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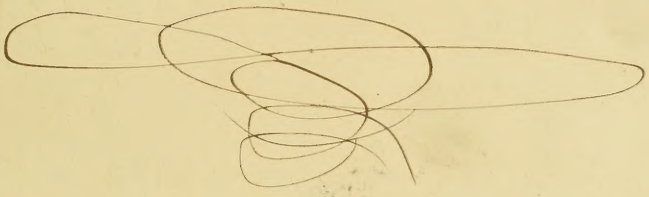
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☞ *With the Number for Saturday next will be presented a Double Page Coloured Plate of "A GROUP OF TEA ROSES." For particulars see page 6.*

NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 *are* 1*s. each.*

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

EXHIBITION of the NATIONAL CARNATION and PICOTEE SOCIETY in conjunction with the FRUIT and FLORAL MEETINGS of the ROYAL HORTICULTURAL SOCIETY, TUESDAY, July 23. For Conditions see Schedule of Prizes, to be obtained on application at the Society's Office.

N.B.—There will be no Meeting of the Fruit and Floral Committees on Tuesday, July 16, as originally fixed.

ROYAL BOTANIC SOCIETY Gardens, Regent's Park.

EXHIBITION of FRUIT and ROSES and other CUT FLOWERS, on WEDNESDAY, July 10. Gates open at 2 and close at 7 o'Clock. Two Military Bands will be in attendance. Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society, price 5*s.* each, or on the day of exhibition, 7*s.* 6*d.* each.

THE OUNDLE FLOWER and POULTRY SHOW will be held on WEDNESDAY, July 17. Prizes, upwards of ONE HUNDRED and FIFTY POUNDS. Special Prizes for Stove and Greenhouse Plants, Ferns and Roses. All entries close July 10. Forms of entry of

ALFRED KING, Sec., Oundle.

BLACKPOOL.—The FLORAL and HORTICULTURAL SHOW will be held at the Winter Gardens, on WEDNESDAY, THURSDAY, and FRIDAY, July 17, 18, and 19.

THOMAS BLANE, Secretary.

NOTTINGHAM FLORAL and HORTICULTURAL SOCIETY'S SHOW will be held on JULY 18, 19, 20, in the Arboretum. Schedules and Entry Forms on application.

Class 1—20 Stove or Greenhouse Plants, 10 in bloom, 10 foliage (Orchids excluded), First Prize, £20; Second Prize, £10; Third Prize, £5.

Class 2—10 Stove or Greenhouse Plants, First Prize, £8; Second Prize, £5; Third Prize, £2 10*s.*

Class 3—6 Miscellaneous Plants, in or out of bloom, distinct varieties (Orchids excluded), First Prize, £3; Second Prize, £2; Third Prize, £1.

Entries close on July 13.

R. S. RADFORD, Secretary, Wilford Road.

LUDLOW HORTICULTURAL SOCIETY.—Exhibition at Ludford, JULY 24 and 25. A Special Prize of TEN POUNDS, open to all England, is offered by the President of the above Society, the Right Hon. the Earl of Powis, for the best SIX BUNCHES of GRAPES (three Black and three White), of not less than two distinct varieties of each colour, absolutely the growth of the exhibitor.

Competitors are earnestly requested to give notice to the HON. SECRETARY, 50, Broad Street, Ludlow, on or before the 20th inst.

WESTON-SUPER-MARE and EAST SOMERSET HORTICULTURAL SOCIETY.

The SIXTH ANNUAL EXHIBITION in connection with this Society will be held at Weston-super-Mare, on WEDNESDAY, July 31, when TWO HUNDRED POUNDS will be offered in Prizes. Schedules forwarded on application to

W. B. FRAMPTON, Sec., Weston-super-Mare.

THE FOURTH GREAT METROPOLITAN BEE SHOW, promoted by the British Bee Keepers' Association, will be held, under the Presidency of the Baroness Burdett Coutts, in the Gardens of the Royal Horticultural Society, South Kensington, S.W., on August 6, 7, and 8. For PRIZE LISTS and other information apply to the Honorary Secretary,

Rev. HERBERT R. PEEL, Abbot's Hill, Hemel Hempstead, Herts.

Venus' Fly-Trap.

DIONÆA MUSCIPULA.—Nice plants with good traps, of this interesting Fly-catcher, 30*s.* per dozen

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

THE CHESHUNT ROSES are now finely in Bloom—late, but finer than ever. Frequent trains from London to Cheshunt.

PAUL and SON, The Old Nurseries, Cheshunt, N.

Roses.

CHARLES TURNER'S extensive Collection is now in fine bloom; an inspection is requested. Trains from Paddington and shoot intervals.

The Royal Nurseries, Slough.

ROSES.—Visitors to the Nurseries are invited to inspect our extensive Collection of ROSES, which are now in magnificent bloom.

CRANSTON'S Nurseries, King's Acre, Hereford.

ROSES NOW IN BLOOM.—Many thousands of the newest and finest varieties in flower. An inspection invited.

JAMES DICKSON and SONS, Newton Nurseries, Chester. (Eight minutes' walk from Railway Station.)

To the Trade.—New Roses of 1878.

GEO. COOLING begs to offer extra fine plants of thirty-two of the best varieties of the above, with plenty of buds for immediate working. List and price on application. The Nurseries, Bath.

TO BE SOLD, a great bargain, twenty-three specimen STOVE PLANTS, the property of a Gentleman in Yorkshire. All particulars on application to

JAMES DICKSON and SONS, "Newton" Nurseries, Chester.

Bedding Violas, Show and Fancy Pansies.

DICKSONS AND COMPANY, 1, Waterloo Place, Edinburgh, invite an inspection of their unrivalled collection of the above (including the new varieties for next season), which is now in great beauty at their Pilrig Park Nursery. Established upwards of a century.

BEGONIAS — Handsome-flowered, good blooming plants, of choice named sorts, 30*s.* and 42*s.* per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Primulas—Primulas—Primulas.

WILLIAMS' superb strain, 1*s.* 6*d.* per dozen, 10*s.* per 100; package and carriage free. CINERARIAS, choicest assortment, same size and price. The above are quite equal to those I have sent out in previous years. Cash with order.

JOHN STEVENS, The Nurseries, Coventry.

New Plant Catalogue.

HEATH and SON beg to announce their New Illustrated CATALOGUE of ORCHIDS, FERNS, STOVE PLANTS, &c., is now ready, and will be forwarded, gratis and post-free, to all applicants.

HEATH and SON, Nurserymen, &c., Cheltenham.

Genuine Garden Seeds.

WM. CUTBUSH and SON have for many years held some of the finest stocks of Seeds in the Trade, and they believe that no House can possibly supply better quality.

CATALOGUES post-free on application.

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Show and Fancy Pansies, also Bedding Violas.

DOWNIE and LAIRD, ROYAL WINTER GARDEN, Edinburgh, invite inspection of their unrivalled collection of the above, which are now in full flower, and may be seen any day (Sunday excepted).

FOR SALE, in October and November, Red and Black CURRANT and GOOSEBERRY BUSHES; also RASPBERRY CANES, STRAWBERRY PLANTS and RHUBARB STOOLS. For particulars, apply to Mr. SCOTT, Garthdee, by Aberdeen.

New Cineraria Seed.

F. and A. SMITH can now supply new Seed, saved from their unrivalled collection, in 1*s.*, 2*s.* 6*d.*, and 5*s.* packets. Price by weight to the Trade on application.

The Nurseries, West Dulwich, S.E.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH and CO. (established 1820), Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the world.

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GARDENER, P.O., Murrayfield, Edinburgh.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S.E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

New Seedling Show and Early Pelargoniums.

F. and A. SMITH'S NEW CATALOGUE of the above is now ready, containing all the Novelties of the Season. May be had free on application.

The Nurseries, West Dulwich, S.E.

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LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18*s.*, 24*s.*, and 30*s.*

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BAY TREES for SALE.—The finest in England. Five pairs in tubs, standing 12 feet high. Apply S., West House, Clapham Common, S.W.

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J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

To the Trade, &c.

CLEMATISES.—An immense quantity of the best and newest sorts. Plants of most kinds are now very fine.

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ORCHIDS.—Thousands of good Orchids can be supplied at 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each. An inspection is invited, or by sending names of those already possessed different varieties can be given, and purchasers will have a good selection made for them.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Special List (No. 37) of Choice Orchids, &c.

THE NEW PLANT and BULB COMPANY beg to invite the attention of Orchid Growers to their Importations from Assam, and various parts of South America, &c.; also to their selection of many of the choicest kinds of ORCHIDS, and those most easily grown. All at very low prices, good healthy pieces, breaking and growing freely. LIST post-free on application.

Lion Walk, Colchester.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.

CATALOGUES and Prices on application. Special terms to the Trade.

HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

To the Trade.

MALDEN and SON have a few quarters of the far-famed Stratton Green Round TURNIP SEEDS to dispose of. For price, &c., apply to

MALDEN and SON, Seed Growers, Biggleswade.

To the Trade.

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H. and F. SHARPE have fine samples of the above-named Seeds, suitable for sowing purposes. Prices, &c., may be had on application.

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PEAT.—The West Moors Horticultural Peat Supply.—C. R. HOLLOWAY, Church, Harts—Brown, Fibrous, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turves and carefully loaded into Railway Trucks, at 17*s.* 6*d.* per ton, in loads of 4 Tons and upwards. Sample bag, 5*s.*, five bags, 21*s.*; 12 Bags, 40*s.* Some also, of good quality, at 13*s.* 6*d.* per four tons and upwards.

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GARDEN POTS of best quality, are requested to send their orders to

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Price List on application.

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Pyrgo Park, Romford, Essex.

IMPORTANT CLEARANCE SALE of Choice Exhibition Specimen STOVE and GREENHOUSE PLANTS of various sizes, all well trained, and in the best possible health, consisting of Anthurium Scherzerianum (Baines' variety), Lapageria alba (true) and rosea; rich assortments of Allamandas and Ixoras, Eucharis, Lomaria heterophylla, Pimeleas, Polygalas; a considerable number of young and attractive specimen Azalea indica and Ericas, admirably trained, embracing all the leading show varieties; Crotons, Dracænas, Caladium, Alocasia, and other ornamental foliage plants; some handsome Palms and Ferns, show and fancy Pelargoniums in variety, a small collection of valuable ORCHIDS, a nearly new CONSERVATORY, 50 feet by 28 feet; HOT-WATER PIPING; a nearly new Show Plant VAN, 14 feet 6 inches long by 8 feet wide, with cloth.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Lieut.-General Fytche to SELL the above beautiful COLLECTION of PLANTS by AUCTION, without the slightest reservation, on the Premises, Pyrgo Park, Havering-atte-Bower, near Romford, Essex, on THURSDAY, July 18, at 12 for 1 o'Clock precisely.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises, of Mr. LANE; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Kelsale, near Saxmundham, Suffolk.

TO BE SOLD pursuant to an Order of the High Court of Justice, Chancery Division, made in the action Chaplin *v.* Rickards, 1878. C. 33, with the approbation of the Vice-Chancellor Sir Richard Malins, the Judge to whose Court the said action is attached, certain PROPERTY, situate at Kelsale, near Saxmundham, in the county of Suffolk.

MR. ROBERT FLICK (of the Firm of Messrs. Flick & Son), the person appointed by the said Judge, will SELL the above by AUCTION in one Lot, at the White Hart Inn, Saxmundham, on MONDAY, July 15, at 6 o'Clock in the afternoon punctually. The Property comprises a convenient stone, brick and tiled Dwelling House, containing two Sitting-rooms, Kitchen, Pantry, Seedroom and three Bedrooms, and surrounded by 3a. 3r. 18p. of excellent land, now planted, and for many years known as the Kelsale Nursery Ground, extremely well situated in the parish of Kelsale, by the side of the road leading from the village to Saxmundham, from which latter town and railway station it is distant only about 1 mile.

The whole is now in possession of Mr. J. S. Rickards, and possession will be given on October 11 next.

About eighty full bearing ORCHARD TREES will be included in the Sale.

The property is copyhold of the Manor of Kelsale, fine arbitrary on death or alienation.

Annual outgoings: land tax, 14*s.* 3*d.*; quit-rent, 6*d.*; apportioned tithe rent-charge, £1.

Particulars and Conditions of Sale to be had of Messrs. SOUTHWELL AND FRY, Solicitors, Saxmundham; Messrs. POWNALL, SON, CROSS, AND KNOTT, Solicitors, Staple Inn, London, W.C.; of the Auctioneer at his office at Saxmundham; and at the place of Sale.

Dated June 27, 1878. ALFRED RAWLINSON, Chief Clerk.

To Be Let or Sold, with Immediate Possession.

TO BE LET or SOLD, a Small FLORIST and NURSERY BUSINESS, situate about 1 mile from the Crystal Palace, and close to Upper Norwood, very central and about 1 acre in extent partly stocked. There are four Greenhouses and one Propagating House, and Range of Pits heated by one Boiler, also 4 Ranges of Cold Pits stocked with various Plants.

To view the same, apply to D. J. S., 4 Beulah Road, New Thornton Heath, Croydon; and for further particulars, to Dr. SMITH, Dingley, Market Harborough.

TO BE LET, at Michaelmas next, the ABINGDON SEWAGE FARM, containing about 15 Acres of Pasture and 45 Acres of Arable Land. The land is very suitable for the Cultivation of Vegetables, and will be Let on a Lease, for Seven Years, a copy of which can be seen on application at the Town Clerk's Office, Abingdon, where further information can be obtained.

TO BE LET, with Immediate Possession, a compact old-established NURSERY and SEED BUSINESS in Somerset, in perfect working order, doing a thriving trade and capable of further extension. Present proprietor retiring. Coming-in about £500. This is an opportunity rarely to be met with. For further particulars apply to HURST AND SON, 6, Leadenhall Street, London, E.C.

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For further particulars and orders to View, apply to SMITH AND ROBINSON, Estate Agents, Hemel Hempstead, Herts.

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"The Roses of Mr. Paul are things to see once and dream of for ever."—*Athenæum.*

"Roses of every hue, so fresh and bright and numerous, that the mind pictures to itself the scenery of the Rose gardens at Waltham Cross in fine summer time."—*Morning Post.*

WM. PAUL AND SON respectfully invite all who take an interest in ROSES and ROSE CULTURE to view the stock growing in their Nurseries at Waltham Cross, which they believe to be still unsurpassed. The old-fashioned Roses dear to many from association are still cultivated, and every novelty of merit is added as it appears. Many seedlings raised in the establishment, and others raised by the celebrated rosarian, R. B. Postans, Esq., can be seen only in this establishment.

The PICTORIAL TREES now so largely used in ornamental gardening are also in fine condition.

Admission free on presentation of address card. Visitors by railway can enter the Nurseries from the platform, Waltham Station, Great Eastern Railway.

Paul's Nurseries and Seed Warehouse, Waltham Cross.

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Established in 1838 for the Relief of Aged and Distressed Gardeners, their Widows, and others engaged in Horticultural pursuits, by means of Pensions, which are granted for Life.

£16 per Annum to Men; £12 per Annum to Women.

☞ The Annual Subscription is £1 1*s.*; that for Life, £10 10*s.*, which entitles the Donor to One Vote at each Election of Pensioners.

Persons of the age of 60 and upwards are eligible for the Pensions, or earlier in the event of being totally disabled.

During the time the Society has been in existence it has relieved 252 persons, at a cost of upwards of £22,780, and it has now upon its Funds 77 Pensioners.

The Funded Stock of the Society is £11,300, standing in the names of the Trustees, in the Three per Cent. Consols.

Special attention is requested to the following Rule (No. 6), which enacts:—

"That none but those who have subscribed for fifteen years consecutively shall be considered eligible while a sufficient number of such persons shall be upon the List, the object being to give a preference to those persons who have been contributing to assist others; so that if the funds should enable the Committee to call for an election of five persons, and there were two or three Candidates who had been subscribing fifteen years, such persons would be appointed Pensioners, without an election, in preference to the other Candidates."

Treasurer:—ROBERT WRENCH, Esq., London Bridge, E.C.

Secretary:—EDWARD R. CUTLER, 14, Tavistock Row, W.C.

Gardeners' Chronicle Office,
41, Wellington Street, W.C.,
June 27, 1878.

W. RICHARDS begs to acknowledge the following donations for the benefit of the above Fund:—

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CALCEOLARIA, superb selection, magnificent colours, beautifully tigred.
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PRIMULA, from exhibition plants.
The above are raised by the best growers in the kingdom, under our own supervision.
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Four Choice and Handsome Orchids.

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All grown in pots.

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"SIR,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

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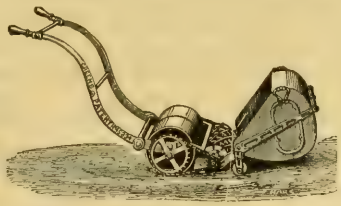
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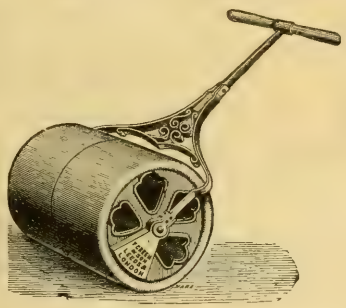
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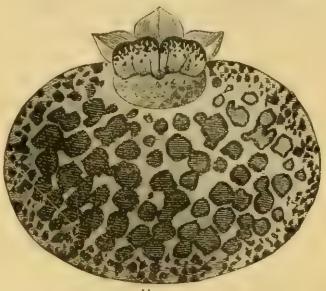
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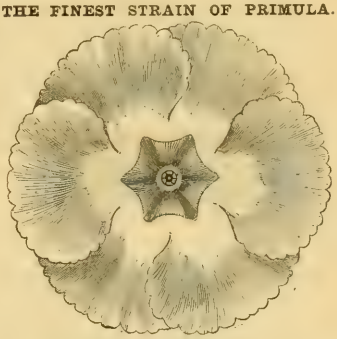


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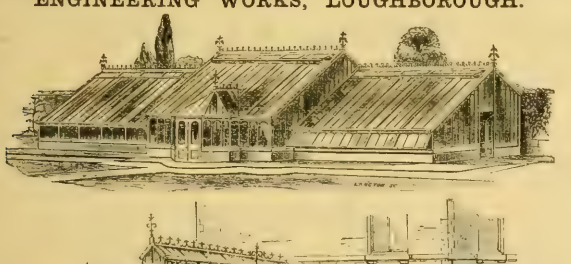
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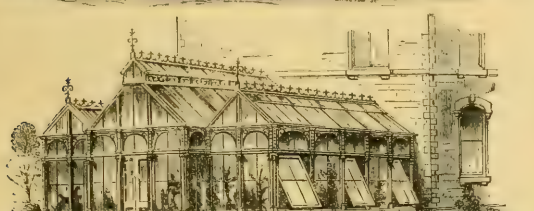
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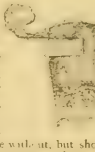
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"THOMAS SPEED.

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TEA ROSES,

Thrown carelessly on to an Old Stone Wall, with a background of JASMINE, &c

The same Number will also contain a

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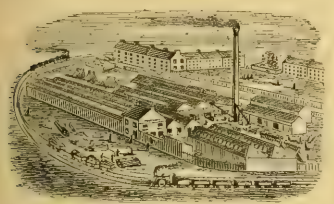
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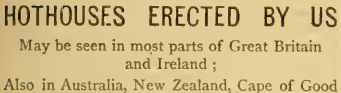
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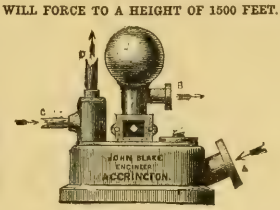
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This advertisement will appear again on July 20.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 200 feet rise.)

From Captain TOWNSHEND, *Wincham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From JOHN BARNES, Esq., *Contractor, Chatburn and Hellifield Railway, Contractor's Office, March,* 1877.

"Dear Sir,—I have the pleasure to inform you that the three Hydraulic Rams you erected for me on this contract about two years ago, have continued to work very satisfactorily, without requiring any repairing. With a fall of 5 feet sufficient water has been raised daily by each ram to supply two of my locomotive engines : they have fully answered my expectations and all that has been said of them."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From Mr. THOMAS MASON, *Alkincoates Hall, Colne, September* 30, 1871.

"Sir,—Your self-acting Hydraulic Ram gives me entire satisfaction ; it has been at work about fifteen months, and has only been seen once during the last six months ; it is forcing about 1400 gallons per day of twenty-four hours to a height of 194 feet."

From JOHN PENNINGTON, Esq., *Emmott Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,

ENGINEER, ACCRINGTON.



SATURDAY, JULY 6, 1878.

BIRDS IN THE BELFRY.

LIKE some other inconsistent people I am in the habit of killing certain kinds of birds in the way of sport, and of cherishing certain other birds near home. Our church tower has been under repair lately, and the birds that build therein were dislodged : they are my special favourites. I was grieved one day to meet a workman, coming down a ladder within the tower, with a swift in his hand. He had caught it on a floor above, from which it seemed unable to rise, in consequence, he thought, of a broken wing, but in point of fact it was quite unhurt.

The legs, feet, and talons of the swift are peculiar. The latter are sharp, curved like a cat's, and exceedingly powerful. I put a finger within one of the claws of the captured bird, and was glad to be released from its tight clutch. The legs are so short that they do not much assist the owner in springing up from any level surface on which he may chance to have settled. The little prisoner had been captured through its awkwardness in getting into flight, and this had occasioned the mistake as to its wing.

"What are you going to do with it?" I asked.

"It has a broken wing," said the young fellow. "I think I had better kill it."

"Perhaps you had," I said ; "but suppose you give it just one chance ; open your hand and let us see."

The hand was opened at this appeal, and in an instant, and to the youth's astonishment, the bird was on the wing and aloft with its fellows.

Every summer evening flights of swifts screech round the old tower ; I can hear them as I write. Every year a colony arrives and takes up quarters in an old warehouse abutting on the churchyard, and here they breed unmolested beneath its open eaves. Here also they rendezvous every evening, and hereabouts around the tower I have counted as many as forty or fifty, hawking in quick flight, screeching and chasing one another before going to roost, in evident enjoyment of life. I watch for their return in spring, and they never disappoint me. It may not be easy to answer my question, but can any one tell me whether the same birds come back to their old homes ?

The white owl is another of my favourites. She and I have been near neighbours now for half a century, and we have always been on the best of terms. As a boy I remember her hissing not very far from my pillow. My bedroom window looked out on to the churchyard, "where owls do cry." But my good parents taught me early that owls do no harm, and I soon grew accustomed to the hissing, and was off to sleep in spite of it. Owing perhaps to these early memories I love the owl ; as for the one that builds her nest in the old tower I am pleased to have lived long enough to do her a good turn.

During some recent repairs and alterations the poor old bird was taken alive under the tiles, in the roof of the northern aisle. The capture was made in April, and, by chance, I was present when the prisoner was brought down. The man who had secured the poor old bird when sitting on her nest had not escaped scot-free ; there was blood upon his hand, and in spite of my own misdeeds in ill-treating birds of another class I did not pity him.

The eggs had been overlooked, and on my inquiring about them the man returned to the roof and found two, white and fresh. The next question was the fate of the old bird. One said, "Cage her," and another went off for a basket. A gardener, looking over a wall, said, "Let her go;" I said ditto, and we carried our point. She was set free. Her captor, with the scratched hand, magnanimously threw her up into the air, and away she went, steering due south, with the sun blazing in her unaccustomed eye. The southern side of our churchyard is fenced with houses, and the suburbs of our little town lay full in her way, with some high house-tops and chimney-pots; but she steered clear of them all. Notwithstanding the unseasonable hour for her flight, she got clean away in safety, and the workmen tell me she has since taken more than one peep round about her old home, where I hope she will again settle in secure quarters when the repairs have been completed. The *debris* in her kitchen—fragments and pellets—made up several wheelbarrow loads. One would like to know how many mice and rats are represented by these remnants.

In the church tower, and in the nooks and crannies of old houses occupied by kindly people not far off, a number of starlings find shelter, and in breeding-time sufficient accommodation for their nests. Like the other birds that build in the tower, they are undoubtedly conservative of the interests of Mother Church, and opposed to disestablishment, although the recent repairs and restorations, stopping of holes and closing of open eaves, must have caused some of them to find shelter somewhere else.

Still the numbers are well kept up, and in fact, when the starlings get together in winter, I believe the flock is more numerous than ever. They are protected better by law and sentiment than they used to be, and their eggs are not now taken by ruthless boys and thoughtless men. I love to see their black and golden wings sparkle in the sun, to hear their cheerful gossip from the vane on the steeple-top and among the vicarage Elms and Hawthorns. The Vicar always accords them a hearty welcome in his garden, allows them their share of fruit in the kitchen garden, and gives them the free use of the lawn, which he calls "the starlings' parlour." They help themselves to fruit in summer time, but the good they do in destroying injurious pests is more than an equivalent for the injury. I believe we are coming to a juster knowledge of our duties and interests in regard to starlings; I never hear now of a gun being fired at them. In spring the starlings work hard for their young, just now the mown meadows are the feeding places of young and old, where they ransack the turf for food with great clang of mandibles and much happiness and sport.

I have yet to mention another friend, the impudent house sparrow. Matters have mended for him wonderfully in my remembrance. Years ago he was deemed a nuisance and a pest; he was accused, among other crimes, of waking people too early in the morning: the penalty was death. He was shot at whenever and wherever he showed himself. In breeding time he passed through fire to visit his dame upon her nest. This was in the old time when the tower was covered with mosses, lichens, and ferns—when the Wallflower, which fastens upon crumbling walls, blossomed high above the ground in many a cranny, and the house sparrow had its nest where it would not now find a chink to hide in. The restorations and repairs have ousted him too, lately, but wherever he can find a lodgment in any part of the tower he remains as faithful to the church as the Vicar of Bray was. His prospects, on the whole, have very much improved. His life is comparatively safe under the general system of patronage which now prevails in regard to birds. Plundering little rascal as he is, and well fitted to live down hard times and survive the prejudices of ignorance, I do not find that he has an enemy left, save and except the cruel cat.

In regard to the treatment of birds generally, except one or two kinds, such as game birds, I will only quote the short and simple saying, "Live, and let live." *T. G.*

New Garden Plants.

Xeronema Moorei, *Hr. et Gris.** (Fig. 3, p. 17.)

This singular and beautiful Liliaceous plant is a native of New Caledonia, and was recently exhibited by Messrs. Veitch at the Royal Horticultural Society. We believe it was first introduced to gardens by M. Linden, but it was made known to science by Messrs. Brongniart and Gris. The botanical history of the plant is fully given in the works cited below, to the accounts therein we have nothing new to add. It may suffice here to say that the plant has the habit of an Iris, with a thick rootstock and a tuft of sheathing sword-shaped leaves, from whose centre rises a tall flower-stalk bearing a few scattered bracts below, and at the upper part a raceme of brilliant crimson flowers all turned to one side (secund). Our illustration, taken from Messrs. Veitch's plant, shows the general habit of the plant (reduced), the flower-spike natural size, a section through the flower magnified twice, the plan of arrangement of the parts, and a grain of pollen magnified 250 times. A remarkable peculiarity of the plant consists in the manner in which the upper part of the flower-stalk is bent sometimes almost horizontally so as to bring the flowers in a horizontal line, as happens also in Freesia. Taking this circumstance in connection with the twisting of the flowers themselves so as to bring them all on to one plane, the inference is that the arrangements in question are connected with the visits of insects to fertilise the flower. At any rate it is quite clear, from the appearance of the flower, that the stamens and styles mature at different times, and hence that the mediation of insects is essential. A coloured figure will, we believe, be given in the *Botanical Magazine*. *M. T. M.*

Hartwegia gemma, *n. sp.*†

This is a most lovely gem. Take a little Pleurothallis, like P. teres, Lindl. (recently introduced by Messrs. Veitch), give it blackish violet stems, thick, semi-terete, channelled, acute single leaves, blotched with blackish violet, and a small one-branched inflorescence of the most brilliant amethyst-purple flowers in the way of those of Hartwegia purpurea—this is the new plant. The genus Hartwegia was established by Dr. Lindley in 1837 in honour of the German traveller, Mr. Hartweg. Now, after forty-one years, the second species appears. It is very much better than its predecessor. I have to thank Mr. W. Bull for it. *H. G. Rchb. f.*

Cœlogyne corymbosa heteroglossa, *n. var.*

I propose this name for a Cœlogyne I have seen but once, so that it is a very difficult question to decide how to name it. I obtained a two-flowered peduncle. The flowers are even larger than those of a Cœlogyne corymbosa, and of same colours; yet the lip has the apices of the side lobes overlapping the base of the very broad (not narrow lanciform) middle lobe, and there are from the base of the lip to the base of the middle lobe three membranous denticulate keels. Two broad brown areas occur one on each side of the basilar disk between the side lobes, which have brown veins, each brown area ends in a yellow one, and there is a four-lobed, angulate, deep yellow area on the very base of the broad middle lobe, with a dark brown narrow border. The bulbs cannot be distinguished from those of a genuine C. corymbosa, Lindl. The leaves, however, appear to be broader, and with shorter petioles.

Can it be a mule between Cœlogyne corymbosa and brevifolia or ocellata? I may add, that I obtained fully developed English flowers from genuine C. corymbosa, with lanciform middle lobe of lip, from Mr. Baker and Sir Trevor Lawrence, in 1876 and 1877. Finally, I have ascertained at Kew that Dr. Griffith was decidedly a collector of this species, though his specimens have been named C. ochracea, Lindl. Our actual novelty was kindly sent me by Sir Trevor Lawrence, Burford Lodge, Dorking. *H. G. Rchb. f.*

* *Bull. Soc Bot. France*, t. xi, p. 317; *Illustration Horticole*, N.S., t 297; Scleronema Moorei. Er. and Gr., *Ann. Sc. Nat.*, ser. 5, t 11, p 166

† *Hartwegia gemma*, n. sp.—Papilla 0.04 m. alta; caule secundario gracilimo; folio semi-tereto carinato obtuse acuto, paniculo reducto pauciflora, bracteis triangulis minutissimis; sepalo impari ligulato obtuse acuto, sepalis paribus oblongis acutis; tepalis linearibus acutis, labello columnæ basi adnato, ante basin ventricoso, gibberoso, compresso, dein constricta, antice cochleari crenulato; margina crispulo. Caules violaceo atrati, folia viridula guttulis atroviolaceis; flores purpureo amethystini. *H. G. Rchb. f.*

THE EVENING FÊTE AT THE ROYAL BOTANIC GARDENS.

The annual exhibition of floral table decorations and of other applications of plants and cut flowers to decorative purposes was held on Thursday last under most enjoyable atmospheric conditions for the thousands who attended the fête, but under very trying influences for the flowers, which we do not remember to have ever seen more affected by heat, in spite of all the care and attention that the most experienced exhibitors could bestow on them. Fortunately for this branch of art, we do not often have 91° in the shade, or the variety of flowers and foliage at our disposal would be materially diminished.

The 1st prize for a dinner-table, furnished with plates, knives, forks, wine-glasses, &c., fell to Mr. W. Soder, gr. to O. Hanbury, Esq., of Brentwood, whose decorations were most elegantly arranged, and consisted of a great variety of flowers of many colours well harmonised and well toned down with light foliage. The central line of objects contained a light feathery Palm, two trumpet-vases each arising out of a bank of flowers, and two smaller vases; there were also four dishes of fruit and twelve specimen glasses. Amongst the flowers used were Orchids of several kinds, Water Lilies, Cactus, scarlet Anthurium, double pink Pelargonium, Rhodanthe, and climbing Fern. The tops of the vases were very lightly done with brown grasses and pips of brightly coloured flowers. The 2d and 3d prizes fell to Mrs. Seale, of Sevenoaks, and to Mr. Charles Burley, of Brentwood, for tables which did them credit, and which partook of much the same general character. Amongst the other exhibitions in this class there were two that deserve notice:—Messrs. Phillips & Pearce had some magnificent glass dishes, in which it would be difficult to make any arrangement of flowers look well, and which were unsuitable for any table less than three times the allotted size of 10 feet by 5 feet; Messrs. J. Mortlock & Co., of Oxford Street, had upon their table five vases, two Palms, and four pretty baskets, all arranged with great skill, but sufficient to decorate a dinner-table fully twice as large as that upon which they were shown.

In striking contrast to these examples of crowded tables was that which secured for Miss J. S. Lovibond, of Starts Hill, Farnborough, the 1st prize for a dinner-table of the same size, not furnished with the before-mentioned accessories. In this class there were ten competing tables, nearly all exhibiting good taste and light arrangements. The competition must have been severe, since equal 2d prizes were awarded to Mrs. F. A. Guimarens, Wray Park, Reigate, and to Mr. James Hudson, gr. at Gunnersbury House, Acton, and equal 3d's to Mrs. Seale and Mr. C. Burley. But the table which took the 1st prize differed in style and character from all the rest; and reminded us somewhat of the tables which Miss Edith Blair and Miss Annie Hassard used to arrange at the Crystal Palace shows eight or ten years ago. Of Miss Lovibond's decorations it might have been asserted, without risk of contradiction, that it would have been very difficult either to have added anything to them, or to have taken anything away from them, without spoiling the effect; and this assuredly could not have been said of any other table at the show. The centre-piece was a trumpet-vase, at the foot of which were four fronds of male Fern and four good Caladium leaves, three large white blooms of Cactus, three good trusses of scarlet Geranium, and nine white Campanulas, mixed with Maidenhair Fern and Selaginellas. Around the stem was entwined a spray of small-leaved dark Cissus discolor. In the top were, lightly arranged, white Campanulas, cerise Begonias, feathery grasses, and leaves of Curculigo recurvata. At each end of the table was a glass basket containing Water Lilies, leaves of Caladium argyrites, Begonias, and Fern fronds. Four small trumpet-vases, containing Echeveria, Japan Spiræa, and Oat-grasses, completed the decorations. Very rarely has so pretty an effect been produced with such a limited variety of materials; and it would be well if exhibitors of floral combinations would keep before them the fact that the highest art consists in using as few flowers as possible, and not in trying to put in as many as they can command.

The prizes for floral decorations for a buffet went to Messrs. J. Mortlock & Co., Mr. G. Wheeler, and Mr. J. Chard, in the order mentioned, but none of the designs were so good as they might have been. Still more unsatisfactory were the arches of cut foliage

and flowers for a sideboard, in which class the 1st prize was withheld. There were no fewer than twelve competitors for the prizes for an epergne or centre table decoration; but most of the exhibits were overdone with flowers. Messrs. J. Mortlock & Co. were 1st with a group of fruits most artistically arranged around the base of a pretty Palm; Mrs. Guimarens was 2d; and Messrs. Walter Wood, Parmley & Co., of Knightsbridge, were 3d. We expect that the faded condition of the flowers in the centre-piece shown by Miss Lovibond explains the reason why her name does not appear in the prize-list of this class, for her centre-piece evidently had been a very elegant arrangement of a limited selection of flowers and foliage.

There were also many entries in the class for six specimen glasses for a dinner-table; but most of the exhibitors had fallen into the mistake of dressing them to one face, like coat-flowers; hence the competition was much reduced, and the prizes were awarded in the following order—Messrs. Wood, Parmley & Co., Mr. F. W. Seale, and Miss Lovibond. We were pleased to notice the prevalence of a lighter style in the making up of bridal and ball-room bouquets—at least amongst those to which prizes were awarded, which honours were nearly equally divided between Messrs. E. Green & Co., of Victoria Street, Messrs. Wood, Parmley & Co., and Mr. James Bromwich, of Buckingham Palace Road. In table bouquets, not tied, there was nothing worthy of a 1st prize; and the same remark applies to the hanging baskets with growing plants, of which we never saw a more feeble display. For the two kinds of standing baskets furnished with plants, one for indoors the other for out-of-doors, there was practically no competition; Messrs. E. Green & Co. well deserved the 1st prize which was awarded to them in each class.

Only two exhibitors competed for the group of plants arranged as a balcony garden, and the unsatisfactory character of the exhibition may be inferred from the fact of equal 3d prizes having been awarded. On the other hand, there was good competition for the group of plants arranged for the decoration of a recess, alcove, or fireplace in a room. Messrs. E. G. Henderson & Son, of Edgware Road, exhibited two fireplaces, more elegantly decorated with growing plants than any we remember to have seen before; one of these took the 1st prize, and the other was highly commended. Messrs. J. Mortlock & Co. carried off a good 2d prize for a fireplace with foliage plants only; a choice collection of a few blue China vases upon dark Oak shelves above the mantelpiece affording a pleasant contrast to the well-arranged Palms and other plants. The fireplace which gained the 1st prize had in the centre a tall elegant pale green grass with transverse yellow bands on its leaves, and in front of it a handsome feathery grass; and amongst their leaves peeped up a lot of blooms of choice Masdevallias. At each corner of the fender was a nice plant of Todea superba, with a good Cocos Weddelliana behind each, and at the back were plants of Campsidium filicifolium, which looked well against the light-coloured fireplace. On the mantelshelf was a fine Anthurium Scherzerianum in the centre, a good Caladium on either side of it, and a nice Dendrobium in bloom at each corner. The other fireplace, shown by the same firm, was decorated much in the same style, but with different kinds of plants; and the dark red colour of this fireplace set off to advantage the pale green and variegated-leaved plants and the white flowers which were principally used in its decoration.

The prizes offered for a wreath of flowers or leaves, garland, or other device for personal adornment were not well responded to; several specimens were shown, but most of the exhibitors were tyros in the art. There was only one well-made wreath in the collection, and for this Mrs. Sparling was awarded the 1st prize; it was to be worn on the head, and consisted of a half-coronet with a long spray, the flowers used being pink rosebuds of graduated sizes, and Heaths, all of the same shade of colour.

Amongst the miscellaneous class were some excellent specimens of crosses and circles of choice flowers for grave decorations, shown by Miss J. Gardner, Mr. J. Bromwich, and Messrs. Wood, Parmley & Co. Messrs. J. Mortlock & Co. also exhibited three fruit and flower stands of novel construction in glass and of moderate size, which are likely to come into general use; the fruit rests upon a small circle of reflecting glass, and is surrounded by a narrow zinc trough for flowers, the trough being hidden behind facets of reflecting glass; this is supported by a tripod of thick glass sticks. If not required for fruit, they look well with flowers only.

Taken as a whole this floral display, though not quite so large perhaps as upon some previous occasions, gave evidence of an improvement in taste on the part of old exhibitors. There is nevertheless room for considerable advancement still on the part of many of them; they have got to learn, in too many instances, when to leave off adding more flowers and more leaves to a group that looks well as it is—they have to study the question of form rather more than they have done, and of colour effects which can be obtained by the judicious arrangement of a few inexpensive flowers. It ought to have been a lesson to gardeners who crowd their vases with flowers from the choicest stove plants, and to glass and china manufacturers who heap up a pile of dishes and stands which are unsuitable for the display of flowers, that this is not artistic floral decoration of a dinner-table. Such exhibitors have been taught by the awards of the judges at this show over and over again that quality more than quantity should be aimed at, and that a pretty and pleasing effect produced by a telling arrangement of a few common materials has always carried the highest prizes; nevertheless, they will not learn the lesson, but will persist in carrying out their notion that no dinner-table has a chance of winning a prize unless it is decorated with a large variety of the most costly Orchids, or furnished with the most expensive vases which art can produce. It is gratifying to know that good taste in these matters does exist, and is carried into practice in thousands of houses throughout England, and it is to be regretted that it is not more often displayed at public competitions.

Our notice of the floral decorations to be seen on this occasion would be incomplete if we omitted to mention the grand display of hardy annuals grown in pots, and exhibited by Messrs. Carter & Co., of Holborn. The collection afforded a most brilliant mass of many colours, and covered both sides of the long corridor north of the conservatory. We were informed that about 740 species and varieties were grown in 25,000 pots to form and keep up this exhibition, and we much doubt whether any one who has not seen such a display can possibly form any idea of the wealth in colour which can be secured by growing annuals.

WHAT IS AN AMARYLLID?

The slight alteration I have made in the succession of genera brings in Crinum as our closing subject, and surely we may say *Finis coronat opus*, so grandly stands Crinum alone amongst its fellow Amaryllids, so unapproachable in its soft and sensuous beauty.

There is an immense number of species extending over a wide geographical range both in the New and in the Old World. Herbert, who was more of a thinker and less of a species-maker than many of his contemporaries, made forty-six species and about as many varieties, with hints towards further reductions; Mr. Baker tells us that they number about fifty at the present day, including the more recent additions.

Such a glorious family of plants was not likely to escape the notice of the hybridist, consequently vast numbers of cross-bred kinds were raised by Herbert and distributed pretty well all over the world, and especially to Calcutta, where Dr. Carey, the gifted Superintendent of the Botanic Gardens, who was as great an enthusiast in Amaryllids as the learned Dean, received and cultivated all his Crinums, both pure and cross-bred. Here they grew and prospered, and filled not only India but other countries with their beauty and variety, rendering it uncertain even now whether a new species of Crinum may be so in reality or merely one of Herbert's old cross-breds.

The hardy African capense proved a most valuable plant in these experiments, as all its progeny, when blended by artificial fertilisation with the tropical kinds, proved as hardy as the female parent, or nearly so. Some of these, which are described as having been nearly as large as the Australian and Asiatic types, from whence they were derived by the male side, must have been very grand things, and would be invaluable to gardeners now that the beauty of foliage and tropical form is so much and so deservedly appreciated. Capense itself is thoroughly and really hardy, flourishing with the Sedges and Bulrushes round the margins of our English ponds, and producing "seed by the bushel" at Welton. In practice, however, it does not increase by seed in such situations, for the rat and slug devour every seed or seedling. It is also very satisfactory to find that the new Mooreanum and also one of the sorts that come under the all-embracing name of ornatum have proved themselves perfectly hardy at Kew. I have also at the present time a large handsome kind, unknown (from India), which is now growing well in the open, having remained uninjured through the winter. As a beautiful hardy garden plant Crinum certainly has a future, and every likely sort should be tried out-of-doors, especially in the warmer parts of England.

I have had no opportunity of examining any modern systematised list of the genus and its species, and do not know even what new sorts, or whether any really new sorts, have been introduced.

For the purposes of popular description they are easily divisible into three groups or sections, which are sufficiently characteristic as regards each other; but there is a great family likeness between the members of each section, so much so, that Herbert regarded numbers of them rather as strongly marked varieties, or local and climatic forms of a few principal species; thus anticipating forty or fifty years ago the broader systems of botanical classification affected by modern writers.

I do not know if I can do better at present than to give an outline of Herbert's groupings, which are few and simple; indeed to do more would only tend to complicate a subject which it has been my intention rather to simplify.

An immense number of tropical, or nearly tropical, species is distinguished by the peculiar form of the bulbs, which are elongated like a Leek, or "bull-necked" Onion, above-ground: each-flower-stem bears numerous blossoms, which are widely expanded and starry, with narrow petaloid divisions, sometimes even revolute, like a Turk's-cap Lily; each flower is also more or less stalked or pedunculate: Asiatic and Australian. They vary in size from the huge amabile and its congeners to the charming little purpurascens lately reintroduced and exhibited a few weeks since by Messrs. Veitch.

These are followed by a fine group of shorter necked plants, distinguished by their marked habit of increase by numerous stolons, or sucker-like offsets. Probably the fine erubescens will take the whole of them as varieties; americanum, however, with its pure white, fragrant, four-flowered scape seems distinct. Endless slight differences in bulb conformation follow, till we come to a different type of flower, which Herbert called semi-patent, in which the segments are broader and curving slightly inwards, the flowers also are nutant, or looking, so to speak, downwards. Several of these are showy, but fleeting-blossomed plants, from the west coast of Africa, bearing from one to two flowers upon each stem, rosy in tint, with a bright purple stripe on each segment. They are known under the names of Broussonetii, yuccæoides, distichum, ornatum, &c., and are possibly all forms of one species, distichum, being only distinguished by the bifarious disposition of its leaves.

But by far the most remarkable subject in this class is the strikingly beautiful and distinct sort here named petiolatum, in apposite allusion to its petioled leaves. This lovely little plant was formerly known by the exquisitely absurd name of giganteum. It is a curious circumstance that one or two slight varieties of this Western African should be also found in the Brazils. The habitats, however, seem to be near the haunts of men, and the plant has been probably naturalised. Scabrum, a very beautiful and high coloured plant, should be noticed here, and finally the almost mythic ornatum—for nobody seems to be able to give any certain information as to what is and what is not Crinum ornatum. Herbert describes eight varieties, all apparently Asiatic, but the most remarkable part of the matter is that one of the ornates should be hardy at Kew! Two plants with curious Primrose-shaped flowers close the the list of patentes, the remainder are rather funnel-shaped or campanulate. With the exception of the splendid Forbesianum the whole of these last are hardy. Capense has been alluded to; revolutum, variabile and campanulatum are very interesting small species about which little is known, at least to gardeners. I used to flower revolutum occasionally, and campanulatum has been lately flowered by Sir Charles Strickland. I have also another of this family from Kew, called delagoense.

This closes the list of Amaryllideous plants, of which

I have endeavoured to give a *catalogue raisonné*. Space would not allow of a greater elaboration of the subject, which I have treated to the best of my limited knowledge, and must pray that my friends will excuse many shortcomings. *R. T. C.* [Most assuredly they will be too grateful to see many shortcomings. Eds.]

NOTES ON THE ROSE SHOWS.

2. Crystal Palace.—The show at this old arena of competition for Roses may be considered as really a combination of that usually held there at this season joined to the exhibition of the so-styled National Rose Society, which can scarcely yet be said to have drawn the "most part" of the rosarians of this country under its wings. Taking this circumstance into account with the improved state of the weather, it was a foregone conclusion that a great number of competitors from all parts of the country would put in an appearance, and that a very large collection of blooms would be staged. Nor was this expectation unfulfilled. Amateurs in particular, whose special field the Society's show may be considered to be, came out in remarkable force, quite holding their own in comparison with the productions of some of the leading nurserymen of the day. Indeed, the cultivation of Roses for the purpose of exhibiting cut blooms is now so generally understood that competitive success no longer depends upon skill or routine of practice, but is a question rather of soil, season, and stock of plants. Napoleon's aphorism as to ultimate success always resting with the largest battalions applies equally to Rose growing—*cæteris paribus*, those who have the largest collections always having the best chance of carrying off prizes. The inexperienced in such matters have little idea of the immense number of plants required to furnish a stand of show blooms at any given date, nor the attention in the shape of disbudding, shading (of which more anon), insect watching, watering above and below, liquid manuring, and assiduous plying of the hoe—by those wise enough to use it—required in getting together a collection of show flowers. While speaking of this particular exhibition it is worthy of remark how strongly the clerical exhibitors were represented. Several were amongst the successful prize-takers, and others, though defeated, were certainly not disgraced, notably the writer's old acquaintance in rosy brotherhood, Rev. E. N. Pochin, who had several very fine blooms. Some, though missing a prize, even had buds to them, which is a rare thing to see in the stands now-a-days. It struck me, indeed, that the flowers of the amateurs were in general better set up than those of the nurserymen. More of the foliage was shown, a real improvement, especially when combined with buds, as in a good many instances. Why should the Rose be shown in single blooms only like a pipped flower —which it is not—instead of in natural trusses, as it ought to be? This is one of the vicious effects of disbudding to produce size.

Rosarians are as obnoxious to the reproach of grumbling at the weather as the agricultural community; yet we do, and, with respect to such as we have hitherto experienced, not without adequate cause. The season has really been most unfavourable, notwithstanding copious rains and bright hot sunshine of late. The forcing effects of the two combined were palpably evident at the show on Saturday last. Notwithstanding plenty of size and even form, there was in too many instances of otherwise fine specimens a general appearance of thinness of petal and want of substance in the calibre of the flowers. There was likewise a prevailing lack of normal colouring amongst the various shades of the more intense toned Roses, entirely destructive of those rich flushings and cloudings upon which their beauty and brilliancy so greatly depends. The ardent gaze of the "Sun-god," which tans and freckles the human face divine, equally bleaches the features of rich-coloured Roses; hence the necessity for shading, as in Dahlias, &c. (which some growers so indignantly repudiate), if their tints are to be preserved intact with 90° in the shade.

Another point worthy of note, as exemplifying the glorious uncertainty of Rose growing for show, is that hitherto the lighter soils have had it all their own way. The heavy clays and loams are nowhere. Later on no doubt they will be in splendid form, but then, unhappily, there will be no large exhibitions to appear at. Hence the value of the practice, which cannot be too strongly impressed upon intelligent rosarians, of visiting the actual Rose grounds. Paraphrasing the American's advice to voters "to poll early and poll often," we say go early and go often to every place within reach where Roses are grown. See them at home in their natural habits — catch them *en dishabille*, so to speak—and the result will be great modifications of opinion and considerable erasures from the note-books of names that had been recorded with enthusiastic admiration during tours round the "stands."

Proceeding from generals to particulars, it may be noted that the varieties remarked upon as being fine at the Alexandra were equally so at the Crystal Palace show. They may be despatched therefore without further observation. Of others, Xavier Olibo was remarkably good both in size and colour, in the latter respect being a remarkable exception to the general run of the rich-coloured Roses. The writer has never seen so many and such fine examples of that magnificent Tea, Souvenir d'Elise, brought together on one occasion; indeed, the Teas as a rule were numerous and fine, though, like other kinds, they were very irregular in size and stages of development. Hot seasons are evidently favourable to their welfare, though it might be a nice query perhaps as to how many of the specimens exhibited were cut from outdoor plants. Referring to notes, the following of the class struck me for their general excellence:—Anne Olivier, Moiret, Jean Pernet, Rubens, Rêve d'Or, M. Ducher, Mons. Furtado, Old Adam, Triomphe de Milan, Belle Lyonnaise (fine in Rev. E. N. Pochin's stand, as was also a rich-coloured Maréchal Niel), Catherine Mermet, Marie Guillot, Madame Lertot (or Bravy—are they not the same?), Niphetos (in several cases overdone), Adrienne Christophle and Mdlle. Jules Margottin (a pretty *mélange* of colours); Gloire de Dijon and Céline Forestier were conspicuously in the shade. Baroness Rothschild, though appearing more frequently, was far from displaying its usual beauty; the samples, too, were thin. I am doubtful whether this variety will hold its own much longer, particularly taking into account its lack of fragrance. It was refreshing to note some fine blooms of the veteran Général Jacqueminot in more than one stand, but it would require a whole number of the *Gardeners' Chronicle* to enumerate all the specialities of the show.

New Roses and novelties were brought forward in unusual plenty. In face of the general aberrations displayed in so many instances from normal character and colour, which have resulted from the weather, I entertain great hesitation in committing myself to definite opinions or descriptions; the remarks upon them, therefore, must be taken *quantum valeant*, and subject to such qualifications as further inspection in the Rose grounds during the season may give rise to. With respect to the following named English seedlings, it may be remarked that Mr. William Paul's Duchess of Bedford and Countess of Rosebery corroborated the opinion expressed of them in my last paper; Mr. C. Turner's Dr. Sewell and Congress appear promising. Mr. George Paul's Earl of Beaconsfield also appears likely to be fine; the specimens exhibited had shape and substance, though in colour not particularly new. I forget to which of the two last named raisers Earl Russell pertains—any way as shown it was dull and poor. But how is it possible to judge accurately of the true quality of a new Rose from two or three blooms, the product of two or three immature plants? Being of native origin we can only hope that they will turn out worthy examples of English skill. Mons. Norman and Le Havre were also well shown. Marie Cointet was very poor, nor was F. Michelon, as a rule, up to its usual excellence.

Many novelties, or quasi-novelties, must remain over for a time, which will afford a more complete opportunity for their further trial.

In the interests of the visitors to the Crystal Palace Rose shows we would earnestly ask, can no more convenient arrangements be made for a comfortable view? An inner space of about 14 feet between the tables, and that divided by a rope into two parts, made the inspection of that portion of the boxes far from a labour of love. The inconvenience of transit under such tropical heat and amidst a crowd evidently deterred many from attempting the difficulties (or horrors) of the "Middle Passage." Could not the tables be placed in rows across the transept as they are in the concert-room at the Alexandra Palace?

One feature of this show, as instructive as uncommon, was particularly deserving of remark. There was a large collection, in bunches, of some of those older Roses now seldom seen except as curiosities, and it may be unknown to many of the younger cultivators of the Rose. Amongst others of like degree there were to be seen The Garland, Village Maid, the true pretty striped York and Lancaster, and Cramoisie and Fabvier, and, *mirabile dictu*, some blooms of the Manetti. There were also blooms of the old double yellow, of which after all it may be said, we can well do without it, notwithstanding its colour, now that is quite equalled by some of the Teas. Why should not such representative collections form an item of every Rose show? *P.*

VARIEGATED PELARGONIUMS FOR MARKET.

The culture of variegated Zonal Pelargoniums for market is a somewhat recent development of horticultural enterprise. It is not to be wondered at. They are not everybody's plants in the sense that they can be grown as readily as the green-leaved types: rather they require a special course of treatment to be well done, and it was because of this that a few men are growing them in large quantities and find a ready sale for them in Covent Garden and other markets. The principal part of the plants pass into the hands of the London nursery trade, and they find it to answer much better to buy from the grower than to attempt to cultivate these handsome-leaved plants on their own account. The Tricolor Pelargonium has ceased to be an expensive pet of the public; but it is found very useful indeed for many purposes, and nicely grown and well coloured plants command good prices.

One of the largest growers of these Pelargoniums is Mr. Thos. Pestridge, Boston Park Nursery, Brentford, and what with gold and silver Tricolors and bronzes or Bicolors, he markets some 20,000 plants, a large proportion in large 60 and 48-pots—nice compactly grown though bushy stuff, and admirably coloured, bearing bold and handsome vandyked leaves, gold and orange, carmine and black flashing out with rare brilliancy. It is the way in which they are grown that gives such a lustre to the Brentford plants, and makes them so eagerly sought after at market. The cultivator is a rare and painstaking artist.

The best golden-margined varieties for this purpose are Achievement, Masterpiece, Golden Queen, Miss Goring, Mrs. Little, a rich coloured variety much sought for in the market; the Czar (Pestridge), a bright-coloured variety and good grower; Marie Stuart (Pestridge), having a bold and handsome circular leaf, betokening an excellent constitution, and very rich marking; Prince of Wales, a useful variety, but rather too much in the way of Mrs. Pollock; Florence, a remarkably good variety, in the way of Mrs. Pollock, but with more colour in the leaves and a compacter growth; Salamander (Pestridge), very full colour; Peter Grieve, a fine looking variety, bold in the leaf and richly coloured, but of slow growth; and Macbeth, one of the best growers, vigorous and very attractive in the leaf. Lady Cullum is largely grown because of its distinctive-character for bedding purposes.

The silver Tricolors are much fewer in number, and consist of Lass o' Gowrie, Miss Pond, Empress of India (Pestridge), a remarkably good and vigorous variety, that, as soon as sufficient stock is forthcoming, will be almost entirely grown for this purpose; Dolly Varden, very good and free; and Mrs. John Marshall (Pestridge), very good colour and vigorous grower.

The bronzes or Bicolors comprise but a select few, as W. E. Gumbleton, very fine broad red bronze, a variety that is in great demand because its bold and striking appearance; the Shah, very distinct and fine, and of excellent habit; Maréchal McMahon, fine, bold, and effective in growth; Mrs. Harrison Weir, not a heavy zone, but bright in colour; and Mrs. Quilter, a very useful variety.

These plants are grown in ordinary market plant houses, not particularly roomy in the roof, but light and airy, and well adapted for the purpose; but the plants are not kept so near the glass as one might suppose. Provided the treatment be right, immediate contact with the glass is not so necessary to rich colouring as is generally supposed. During winter a temperature of from 50° to 55° is maintained, rising to 60° and 65° in the sun-heat; the plants are thus kept comfortable, and there is no paralysis from cold. Plenty of air is given on all favourable occasions;

water is given sparingly in dull weather, but where a comfortable temperature is maintained the plants will take water without harm. Like many other specialities, the way to success lies through the uniformity of treatment, and the constant attention the plants receive.

The principal part of the propagating work is done in January, February, and March; but it may be said to be always going on. The points of the shoots are taken when they are hard and firm, and just moving into growth; if they have four or five leaf joints, that is sufficient. These little cuttings are put into thumb-pots, and shifted once into small 60-pots, and in these many of them are marketed. Many of the commoner varieties are planted out in store beds during the summer, and directly a shoot is sufficiently advanced to make a cutting it is taken off. There is nothing like these hard cuttings to get into rooted plants quickly.

There is no secret as to the nature of the soil used. For the gold and silver Tricolors, about two parts light loam, one part leaf-mould, with a good sprinkling of silver sand is used: the gold and bronze are found to do with a stronger loam, and the addition of a little old manure, as they make more root than the Tricolors.

For the sake of convenience the plants are sent to market in shallow boxes, each box containing twelve plants; sometimes these are of one sort, sometimes of two or more sorts. The largest and best coloured plants command a good price, and so do such varieties as Marie Stuart, Peter Grieve, Mrs. Little, &c. In the case of the Bicolors, or gold and bronze, a good broad striking zone, like that seen on W. E. Gumbleton or the Shah, is much preferred.

Mr. Pestridge has so much experience of the adaptability of certain sorts for bedding purposes by reason of planting out during the summer, that his preferences are worthy attention. The best bedding Tricolors he takes to be Macbeth, Marie Stuart, Peter Grieve, putting out plants strong enough to show the fine character at once; Miss Goring, Prince of Wales, William Sandy, and J. B. Downie. The silver Tricolors he looks upon as too delicate for bedding displays unless the soil be sandy and gravelly, and, therefore, warm and dry; even then they are better suited for small beds. Lass o' Gowrie is Mr. Pestridge's choice, because of its free growth and charming colour. The bronze varieties are generally free growers, and, therefore, should not be put into rich soil. The Shah is a very fine variety for large beds, with W. E. Gumbleton as an edging to the foregoing or for small beds. Those named Mrs. Quilter and Mrs. H. Weir are valuable for small groups; Maréchal McMahon is also a good bedder.

What a change from the brilliancy of colour seen at Brentford, and the utter want of it seen in the specimens of gold and silver Tricolors and bronzes produced at the recent show of the Pelargonium Society. That the plants can be finely coloured all through the summer is often seen at country shows, where the growth of them is understood. All these Pelargoniums without colour means without condition, and in that state they are about the dullest example of plant life found at exhibitions. *R. D.*

ROSES FROM SEED.

If there is one branch of gardening more interesting than another it is that of raising plants from seed, and if this happens to be with the object of obtaining new varieties, it is not only interesting, but there is a degree of fascination and enjoyment about it, that only those who have once embarked in the work can have any idea of. Any one therefore in quest of a really pleasurable pursuit will do well to turn their attention to the improvement of the Rose, the queen of flowers, as an object worthy of his aim; for although much has been done in this respect, there is still a fine field open in which amateurs have just as good a chance of success as nurserymen or professional gardeners. Many of the former, indeed, have already greatly distinguished themselves for their skill as hybridists, and it is to such gentlemen as Messrs. Hoyle, Foster, Beck, and Banks, that we are indebted for many of the magnificent Pelargoniums and Fuchsias that grace our shows and greenhouses; besides which, if I mistake not, it was an amateur that gave us one of the best English Roses ever raised—viz., the old Devoniensis, which to this day is unequalled among the Teas, and always has great weight with adjudicators at exhibitions. It is an axiom that what has been done can be done again, and if one good Rose has been raised by an amateur, why not others? Spare time for the work is a great element towards success, and in this respect amateurs are generally much more favoured than nurserymen, whose business allows them but little leisure to devote to anything else than that of supplying their customers, although a few have been able to turn a little aside from this, and in most cases much to their profit and the public benefit, as is evidenced by the fine new fruits raised and sent out by Mr. Rivers and others.

Many new varieties of plants are obtained by what are termed chance seedlings—that is, from seed gathered without the flowers from which they originated having been cross-fertilised by hand; but it often occurs that this is done through the agency of bees or other insects, and sometimes by the wind, so that in raising Roses from seed it is just possible that the majority of them may be quite different to the one they were sowed from, and perhaps one or two will have decidedly superior qualities. It is this hope and expectancy that gives such a zest to the work, and makes it so absorbingly interesting that one never tires of watching the development of the young plants from the first moment they emerge through the soil till they flower and show what they are. It is towards this period of their existence that the culminating point is reached as one bends over them with searching eyes to see if they differ in any way from the parents in colour or form; and I, no doubt like many more, in my impatience at the slow unfolding of the petals, must plead guilty in forcing Nature by doing the work for her, and pulling them apart perhaps days before their proper time.

In the matter of raising Roses from seed it cannot be denied but that we are much less favourably situated than our Continental neighbours, whose finer climate does so much for them in causing fructification and a perfect ripening of the heps after; still for all that there are many parts of England where, in fine dry summers and autumns, seed ripens abundantly, as was the case last season. If those who have plants will look around no doubt they will find many with heps yet hanging, which, if gathered and sown, may result in something that will not only bring much pleasure, but be a source of profit to other fortunate possessors. The proper way to proceed is to rub the seed from the husks and sow in sandy soil under hand-lights on any open border or quarter of the garden. There they should be kept close and shaded from strong sunshine till they begin to germinate, when air must be given to assist them to come up strong and sturdy, and free from that pest, the mildew, which is sure to assail them if kept in a close moist atmosphere. As soon as the plants get into the second rough leaf they will be large enough to transplant, and should then be singled out and placed in separate rows at about 6 inches apart, which will afford ample room for the first year's growth. In order to strengthen and hasten this as much as possible, work in a good dressing of thoroughly decomposed manure in the soil and see that the plants never lack water or liquid manure when once they have made a fair start. Owing to the hard shells, Rose seeds take a long time to come up, and it often occurs that many lie in the ground two or three years; which being the case, care should be taken when transplanting the young seedlings not to disturb the soil any more than can be helped, otherwise it may so happen that some of the most valuable are spoiled.

Some growers have a preference for pans to raise seed, and to subject most of them, however hardy, to artificial heat; but this is a great mistake with the Rose, which hates coddling under any circumstances; and most particularly is it impatient of such treatment during the first stage of its existence, a time when artificial heat generally proves fatal. If sown in pans at all, they should be stood in cold frames on a damp coal-ash floor of sufficient hardness to keep worms from piercing through and entering the drainage. The great objection to pans for such a purpose is that, from the small body of soil they contain, the seeds are never in that uniform condition for moisture as when sown in the open ground, as there, covered with a handlight, the variation is slight, and slopping with water may thus be avoided.

It should be born in mind that the more leafage the young seedlings can be induced to make, the quicker will they become established and bear flowers; and therefore they should not be stopped or shortened back in any way, either in the summer or winter, but allowed to retain their shoots full length, from towards the tops of which the first blooms will be formed. These of course cannot be expected to be of large size till the plants get strong, but a judge of Roses will at once be able to form a pretty correct opinion as to their merits, and particularly if he happens to know the varieties from which they originated, as then it may readily be seen whether they differ in colour or form, or are likely to be any improvement on either. Such as afford promise in these respects should be at once budded on good strong stocks, and increased as rapidly as possible. Seedling Briers, where they can be had, produce the best flowers, but, if these are not obtainable, good clear-stemmed Dog Roses are the next in order of merit except for light soils, in which the Manetti is the most suitable. Those who may desire to embark in this most interesting occupation (and I hope there will be many) should not rest satisfied with simply gathering any seed they may find and sowing it at random, but set about the work in a scientific way by fertilising the flowers, making choice of such kinds as Maréchal Niel and others of that character as pollen parents, with any others that are known to seed freely. A yellow perpetual of good shape and form would be a fortune to any one, as we have so few Roses of that shade; and efforts should therefore be made with a view to increase them, instead of reds and pinks, of which there are already so many and so good that it would be a difficult matter to beat them. In whites and yellows and parti-coloured flowers there is a great deficiency, and much may be done by working on these as well as the Tea varieties, many of which want more vigour and hardiness of constitution imparted to them to enable them to succeed in beds and borders.

As regards the fertilising of the blooms, that is a very simple affair, and may easily be done by removing a few of the central petals, when the organs to be fructified will be exposed to view, and may then be impregnated by the pollen of any variety it may be thought desirable to introduce. This can be done by the use of a fine camel-hair brush or by lightly touching the anthers; but, however effected, the thing is to set about it on a dry sunny day, and to see that the pollen is ripe before attempting to apply, as success depends on this and having the flower to be impregnated in a sufficiently advanced state, which, when fully blown, they usually are. After being fertilised in this manner, all that is necessary is to keep the wet from them till the petals fall, which they soon do after fecundation takes place, and the seeds begin to swell—a time when rain has no further injurious effect on them, but rather tends to assist them. In all cases the pods should be left till quite the end of November, to insure their being thoroughly ripe before they are gathered and stored, the best way of doing which is to keep the seed plump and sound, or to bury them in sand till the time comes round for sowing. If amateurs and others will only set themselves assiduously to raising Roses in this way, they will find it afford them much pleasure and gratification; and if each is successful in adding only one new flower, it will greatly increase the interest and beauty of our gardens, besides helping to remove the stigma of being so entirely dependent on the French as we have been till within the last few years. *J. S.*

THORPE PERROW.

Thorpe Perrow, the residence of Mark Milbanke, Esq., is situated some two miles from the market town of Bedale, the centre, as it were, of one of the most fertile districts to be found in the West Riding of Yorkshire. The mansion, a somewhat plain, yet substantial looking structure, stands in the centre of some 300 acres of richly timbered and slightly undulating grass land, and is approached on the north side by a pleasant road through the park, about a mile in length. In that part of Yorkshire the gardens at Thorpe Perrow have long been held in high repute, and very deservedly so, as though by no means so extensive as many others we are acquainted with, the combination of wood and water in the pleasure-grounds is very fine, the views beautiful, the flower garden very ornamental, and the whole place kept in the very best style. The flower-garden, of which we give a couple of illustrations (figs. 1 and 2), occupies some six acres of ground on the west side of the mansion; the pleasure-grounds beyond the lake being 25 acres in extent. This garden is divided into three well-marked divisions which are of about equal proportions, the first and left division being

devoted to flowering shrubs and herbaceous plants, the second or central division, the subject of our illustrations, to spring and summer bedding plants, and the third, or right, to coniferous plants. The spring gardening subjects had been replaced by summer bedding subjects at the time of our visit a fortnight ago, but we saw enough of the reserve garden to convince us that it is well done, and must have a charming effect in the earlier months, so well does the garden and its surroundings lend itself to this style of decoration. Fancy Polyanthuses and Auriculas are used in great numbers, and of the former there is here a very fine strain. Bulbs too are in a season. Amongst the other notable subjects which the house contains is a large bush of the old Camellia Bruciana, one of the original plants. Leaving the greenhouse and turning to the left, we pass the garden of flowering shrubs and herbaceous plants on the right, and soon come to a very remarkable old Elder tree, on the left hand of the walk leading to the pleasure grounds. It is 35 feet high, has a noble bole, and carries a splendid head of bloom. Entering the pleasure grounds we soon came upon some fine coniferous and other ornamental trees, but before alluding to them we must note the sward beneath them, which in spring is



FIG. 1.—THE FLOWER GARDEN AT THORPE PERROW, LOOKING NORTH-WEST.

employed in considerable quantities, and so also is Myosotis dissitiflora, which generally does well, but occasionally gets touched with frost. The summer bedding is too elaborate to be mastered in a hurried "look round," so that we must pass on with the remark that the planting has been carried out with excellent taste and judgment, and the view of the whole all that could be desired.

Near to the mansion, and a little to the right of the view shown in fig. 1, is a large span-roofed greenhouse which contains a remarkable plant of the grand old Luculia gratissima. It is planted out in a border, covers the back wall, and runs up nine rafters. The shoots are allowed to grow loosely all the summer, and are tied in in the autumn, commence blooming in the month of October, and continue till February. The plant has produced as many as 700 trusses of flowers literally covered with a mass of wild flowers. Bluebells, Violets, Primroses, and Wood Anemones by the acre—a spring garden, or a wild garden, call it what you will, of the most enjoyable character, and a feature of the place in which the venerable proprietor takes the greatest possible interest. These lovely yet homely flowers are encouraged to grow with the greatest freedom, and to facilitate this are never mown down or disturbed by the process of "cleaning up," until the month of July. To return to the ornamental trees, let us note as standing out prominently amongst the Conifers, in this part of the pleasure grounds, a handsome specimen of the Douglas Fir, about 50 feet high; and, near by, a beautiful Picea Nordmanniana, one of the plants brought by Lord Alvanly from Prince Woronzow's garden in the Crimea. A litle further on a fine example of Picea Pinsapo comes into view. Here let us leave the pleasure-grounds for a while, and entering a long, straight avenue of Limes, make our way to the ruins of Snape Castle, an object of considerable interest to antiquarians, about half a mile due south of the mansion, on the boundary of the park, and close to the village of Snape.

It was long a stronghold of the Nevilles, and afterwards of the Cecils, Earls of Exeter, but at the present time it is partly in ruins, and partly occupied as a farmhouse. The chapel still remains, and has been renovated in all its parts, except the ceiling, since 1874, by Mr. Milbanke, in memory of Lady Augusta Henrietta Milbanke, who died in that year. The painted ceiling has been somewhat injured by damp, but is very fine, the subject—a scriptural one—illustrating the twelfth chapter of Revelations.

Retracing our steps down the before-mentioned avenue of Limes, the pleasure-grounds are entered again, and a serpentine walk leads us round the head of the lake on the left to the well-wooded park beyond, which is indicated in fig. 2. Here we soon come upon a fine avenue of Oaks, partly seen in the view, and dotted about with admirable effect some handsome examples of Abies orientalis and A. Smithiana; A. Menziesii, 50 feet high, and of fine proportions; Pinus excelsa, about 40 feet high, very handsome, and interesting to boot, inasmuch as this was the only one of the Himalayan Pines that escaped the sad destruction of trees which took place

here in the memorable winter of 1860-61, when the thermometer registered 13° below zero. A Weymouth Pine has a bole more than 9 feet in circumference; Abies canadensis is represented by a beautiful specimen; and the next object which catches the eye is a strikingly handsome round-headed tree of the cut-leaved Beech. From this part of the grounds there are many pretty views across the lake, reminding us strongly of the charming "peeps" so plentiful on the banks of the Thames.

Onwards we must go, however, and passing a beautiful Pinus Benthamiana, over 30 feet high, and nearly 6 feet high. Of Cupressus Lawsoniana we noted five varieties; of Thuja Lobbii, a perfect pyramidal plant, about 30 feet high; and of Cryptomeria japonica nana a grand specimen, about 30 feet high, clothed to the ground and perfectly green. Taxodium sempervirens was cut down to the ground during the severe winter of 1860-61, but has grown up again and is a nice specimen.

From the Pinetum we make towards the kitchen garden, which lies on the north side of the mansion at a distance of about 200 yards, having our attention called on the way to a short avenue formed by two dense hedges of Norway Spruce, 10 feet high and



Fig. 2.—THE FLOWER GARDEN AT THORPE PERROW: LOOKING SOUTH-WEST.

believed to be one of the original plants, we get round at the head of the lake to the right of the view shown in figs. 1 and 2, and enter that portion of the flower garden devoted to Conifers only. Soon we come upon a striking variety of Picea Pinsapo, a present when a seedling from Dr. Lindley to Mr. Culverwell, who for some thirty years has had the care of these gardens. Next to come under review is the choice collection of young Conifers collected by the late Lady Milbanke, an ardent lover of trees, and now forming a most appropriate memorial. The trees are planted sufficiently wide apart to allow of their being seen to the best advantage on all sides. A Cryptomeria elegans was pointed out that had stood 4° below zero. Thujopsis borealis grows most freely, never suffering from frost, wet, or drought. One of the first plants sent out of Retinospora pisifera is from 7 to 8 feet through, with a row of standard Roses on either side. Most of these are of Gloire de Dijon, and one especially is deserving of remark, as being one of the first plants sent out—a grand old specimen, having more of the proportions of an Apple tree than of a standard Rose, and carrying a heavy crop of blooms, from which flowers may be cut until November. In the flower garden there is a plant that we should have mentioned before, which measures 10 feet through, healthy and vigorous, and full of buds. Proceeding onwards from the Spruce avenue a new Pinetum is pointed out as occupying the site of what was once noted as a fox covert, and next a sight that would gladden the heart of the raiser of the good old "Gloire" could he but see his famous flower as it is here in full possession of a Holly tree and 25 feet high. The plant is in splendid health, and flowers most freely.

(To be continued.)

Foreign Correspondence.

Cape Town.—The first view of Cape Town on entering Table Bay is very imposing, and gives a favourable impression of South Africa, which, however, is liable to be banished on a closer inspection. The town is situated nearly in the bight of the bay, and extends from the shore nearly to the foot of the Table Mountain, which, with another prominence called the Lion's Rump, from its fanciful resemblance to that part of the animal, forms the background to Cape Town, and bestows upon it a scene of majestic grandeur which could scarcely be excelled. The principal part of the town is laid out in squares, and when viewed from a good height displays a remarkable amount of symmetry in the parallel streets, &c.; the suburbs are much scattered, and possess a great deal of beauty and fertility. Eucalypti, Oak (Quercus Æsculus), Willow, Poplars, Cluster Pines, Stone Pines, Melia Azadirachta, Leucadendron argenteum, the Silver Tree, Widdringtonia juniperoides, the Cape Cedar, which yields a valuable timber, owing to being cross-grained and almost impervious to dampness, Casuarinas, &c., have been planted with partial success in all the broad streets and roadsides, and a few large and umbrageous avenues have been formed with Oak trees.

The roads and paths are very poorly kept, and, judging from the newspapers, the drainage must be

greatly neglected, for in one article Cape Town was termed the "City of Stinks." The buildings, on the whole, are of a poor stamp when compared with the large and magnificent buildings in the capitals of other colonies: a Roman Catholic cathedral, hospital, museum, and library constitute all. The docks are commodious, and a fine breakwater has lately been made, which, with the good lighthouses, assist in turning the once dangerous Table Bay into a safe refuge. The population is about 30,000, including a vast number of the various coloured races of South Africa and of Malays, who are principally the descendants of the slaves under the Dutch East India Company.

The land situate at the foot of the Table Mountain, and at Wynberg, 8 miles from the Cape, is very fertile, and Wheat, Maize, and all kinds of European fruits and vegetables appear to flourish, except Cherries and Gooseberries. Peaches, Nectarines, Figs, and Grapes grow to perfection. The famous wine called Constantia is the produce of the vineyard at Wynberg. Several thousand gallons of wine are produced at Constantia annually; the Grapes grown there are said to be the finest looking fruit and possess as fine a flavour as any in the world. The soil and climate are suitable, and yet the Cape wines are always reckoned to be inferior to French or German wines, which, if a fact, seems most unaccountable, unless it be owing to the low habit given to the Vine almost universally in South African vineyards, and to the intense heat experienced during the process of fermentation. Nearly all the Cape wine is manufactured from the following varieties:—Green Grape, of which there are two varieties; Red and Black Muscats, Pontnac, Muscatel, red and white, and Frontignac: the bulk of the wine is made from the Green Grape. The original stocks of the present Cape varieties of Grapes are supposed to have been brought from France by the exiled Huguenots (through the Edict of Nantes), who, according to colonial accounts, brought cuttings of their favourite Vines with them to the land of their adoption.

Judging from appearances and from statistics, I fancy that Grape growing will become of more importance, and form, at no distant future, a principal article of exportation. The colony is, for the most part, wonderfully healthy and suitable for the location of Europeans, thereby backing up the old adage, "A genial climate is the home of Vine and man." All the houses in the suburbs and a great many in the town have Vines trained over the verandahs and subtropical flowers of numerous descriptions flourishing in their little gardens.

The centre of the town is ornamentally set off by a long avenue of Oak trees; on one side is the Government House, on the other the Botanical Garden and Museum. The garden is rather small for a colonial garden—generally very large—and is poorly and unsystematically laid out; an unsightly, tumbledown, rotten stick fence surrounds it; irregular, undefined paths, badly kept borders and beds, and neglected trees and shrubs fill it; and, worst of all, the labelling of the plants is one vast medley—Solanum laciniatum is placed against Draceena arborea, Perilla nankinensis next Zamia, Plumbago zeylanica to Eucalyptus resinifera, Francia to Agave americana, Cassia florida to a pot of bulbs, Nerium Oleander to a pot Lilium, and numerous others equally ridiculous. Now a Government botanical garden carried on in this state is not only disgraceful, but wrong in the extreme, and it is hardly conceivable the amount of damage it does; for strangers or inquiring colonists requiring the names of plants enter the garden, see the identical plant, and take down the name as indicated by the label, which in a majority of cases is wrong. There were several beautiful things in the garden which I had no knowledge of, but dare not take the names for granted. The labels are made of iron and frame topped, the names printed, and therefore a considerable expense must have been gone to in naming the things, all thrown away through present neglect. The condition of the garden, in spite of what is said in the Colonial Press, is most unsatisfactory. Very few things were in bloom; Burchellia capensis, Duranta Plumieri, Crinum aquaticum, Wigandia caracasana, Polygalas, and Sparaxis pendula, were rather showy in blossom; Cocos campestris, C. plumosa, Oreodoxa regia, with a few Phœnices, comprise nearly all the Palms. Cycas, Zamias, and Encephalartos are planted here and there; they all seem to do well, or, rather, would do so, with a little more attention; Eucalypti and Araucarias grow to perfection. A small glass-house contains a jammed up collection of stove ornamental plants usually met with at home—Coleus, Begonias, &c.; and a new glass-house is nearly finished, so that I expect improvements are going to be made in that direction.

On leaving Cape Town and passing along the valley between the Lion's Rump and Table Mountain towards False Bay, and then ascending to the top from the back part, a numerous and varied flora is to be met with. Iridaceæ are very plentiful, and comprise many pretty little things, including nearly all colours—red, rose, yellow, orange, and blue, &c.—all about the size of the Lily of the Valley; these, with several other bulbs of similar habit, would form interesting collections for private culture in England. Compositæ, principally of the Aster family, in abundance; and a very pretty dwarf large yellow-flowered Thistle, Ericaceæ, and numerous Heath-like flowering dumose plants of the Leguminous order, with Mesembryantheæ, and, greatest of all, Geraniaceæ, covered the whole of the back slopes of Table Mountain.

I found a marvellously pretty red hairy Orobanche parasitic on the roots of a Leguminous shrub, Leucodendron argenteum, and a few Proteads and Conifers form the principal arborescent growth around. Ferns are rather scarce, and limited in species. Table Mountain is a large plateau of about 3500 feet in altitude, and of very difficult ascent, at times dangerous, owing to the heavy clouds which often settle on the summit, and thereby prevent the descent; it consists of horizontal strata of argillaceous and ferrugineous schists, elevated on grey granite, which, on the slopes and in the valleys, is in a great state of decomposition. The schists are often here surmounted by the unfossiliferous old sandstone. The strata on the Table, and the two equally prominent points on either side, correspond to a nicety, and easily account for the plateau formation by elevation and the washing away of the decomposing granite and stratified formations above. I made a good collection of dried plants, and procured many corms and bulbs of the more interesting and beautiful species. Ericaceæ, Pelargoniums, the numerous Irids, and the majority of the beautiful hard-wooded stuff appeared to flourish best in a mixture of decomposed granite, argillaceous schist, and decomposed vegetable matter (Graminaceæ and Cyperaceæ). The museum and public library is a credit to the town; the collection of books embraces all sciences and authors of literature. The museum is full of specimens of the African fauna, and possesses the finest collection of birds I ever saw or heard of, all systematically arranged, and mounted to perfection. Several improvements are being made. *C. Mudd.*

The Villa Garden.

Golden Feather Pyrethrum for a North Garden.—When Nature in one of its many-sided sportive moods brought forth this most popular plant, with the sober green of the leaves changed to a bright golden tint, a boon of almost unimagined value was conferred on lovers of gardening—"high and low, rich and poor, one with another." It is, indeed, a popular plant, for from the meanest and most circumscribed to the noblest and most extensive, the golden sheen of this useful plant shines out in some part of it. It is only at the dead of the winter—when there appears to be so little of action in the vegetable kingdom as to suggest a period of pause in Nature—it is only then that it is least effective, but let mild warm quickening days come in February and then the leaves lengthen, the plant increases in size, the colour intensifies, and it becomes as bright and pleasant a thing as one can well wish to look upon. It is a plant that will be grown for years to come, when generation after generation of gardeners shall have passed away into the shadows where their journey ends at last.

In a cold, wet forecourt garden, with a due north aspect, into which the sun only rarely enters, and that during the period of the long days, the Golden Feather Pyrethrum has done grandly this spring and summer. The all-devouring slugs have left it untouched, and it is but few things they have left untouched during the long spell of wet weather. It is now in full bloom, and the growth being compact and regular quite a cheerful line is thereby secured.

To have plants effective in spring it is well to sow some seed in May or June in the open air, and transplant in October. These plants bloom but little that year, and they are of a vigorous character to go out for spring effect. Plants that are raised from seed sown early in the year appear to become too much exhausted by the end of the first year to stand well through the winter, and that is why it is preferable to sow at midsummer to get plants for this purpose. The safest plan is to plant out in February, just as the plants begin to move, but when doing so, take care to put some nice fine soil about the roots so that the roots can begin to move quickly. That hint, simple as it is, embodies one of the golden rules of gardening, namely, always plant so that the roots can be coaxed into activity as quickly as possible. To take a plant from a bed of light free soil and put it into a bed or border where the soil is cold, wet, stiff and clammy, is plant cruelty: it can never become at home, and it must dwindle and die.

How this delightfully serviceable plant holds its own against all rivals. We have had a few of them. There was a taller growing Golden Feather named Golden Gem, with cut foliage, and bearing double white flowers. It probably got a First-class Certificate, but who grows it now? It may be met with here and there, but scarcely in a catalogue. Then there is the new laciniated variety of the Golden Feather, with its elegantly cut foliage, but it is decidedly duller in colour and less attractive than its progenitor.

Sweet Williams have done well in this cold garden in company with the Golden Feather, and they are now bearing rare heads of bloom. They were put out in February in that careful fashion recommended above, and though the snails attacked them a little, they soon grew beyond the point of attack. Nothing in the way of flowering plants has done so well as these Sweet Williams, in a garden deeply shaded on three sides, and with the branches of trees making the shade even more dense.

Arabis albida has done well also, and has made a very vigorous growth. Whether it will bloom next spring remains to be seen, but even if it does not there will be the green tufts to be thankful for, and we shall plant more of it in the future.

Up to March the variegated broad-leaved Cress was a pleasant subject, growing freely, thrusting up its handsomely variegated leaves and its flower-stalks. But all of a sudden, as it seemed, the slugs attacked it, and in spite of dustings with lime, fine cinder ashes, and soot, the rain rendered them harmless, the slugs fed, and the plants have altogether disappeared. Violas have been punished in much the same way, and during June the leaves of vigorous growing Polyanthuses have been well nigh devoured. During the hot dry weather there came a pause in the depredations, but now that the rain (and notwithstanding that we appeared to have had too much of it, yet how welcome it was) has come, the slugs will feast again, to our great sorrow.

Garden Operations.

FLOWER GARDEN, ETC.

In order to realise the full enjoyment to be derived from plantations or shrubberies they will require to be frequently gone over, as a neat appearance is one of the great essentials; and in order to insure this the hoe and rake should be constantly at work, and if any of the shrubs or trees are growing out of bounds they may be safely reduced at this season with the knife to the necessary dimensions, but in such a manner as not to interfere with the character of the several varieties. American plants, such as Rhododendrons and Azaleas—which have been very fine this season—should have all decayed flowers removed, and as soon as possible the young seed-vessels carefully pinched out before the growth hardens, which will very much strengthen the future blooms. The walks, which are a necessary accompaniment of the plantation, should also be kept neat and pleasant for walking by frequent edging and rolling. With the thermometer at 91° in the shade, and an almost cloudless sky, the energies of newly-planted shrubs and trees will be severely taxed, and the effects of such powerful evaporation must be counteracted by copious supplies of water both at the roots and overhead. The same may also be observed of Roses, which, if not treated to plenty of water, and occasionally liquid manure,

will soon have their blooming powers exhausted, and their season will be a very short one. In order to assist the later blooms it is advisable that all the expanded ones should be removed as soon as they show symptoms of falling to pieces; if required for dried Rose leaves as an ingredient in *pot pourri* it is as well to cut them before the scent has all evaporated, and this earlier removal, when it can be accomplished, is even more favourable to the later development; take care also to check the luxuriance of the strong non-blooming shoots by timely stopping. The newly-planted bedding plants have felt the influence of the sudden change of temperature very much. A rise of 30° of temperature, from dull cloudy weather to bright sunshine, is likely to tell adversely against many things besides bedding plants; for example, at this place Raspberries are scalded on the truss, and turned quite sour and useless. Strawberries have ripened prematurely before they have attained their full development, and the evaporation from the newly planted beds of flowers is enormous, and those which have not attained to any great degree of root development will be very much benefited by the application of a sufficient quantity of water to penetrate an inch; the ground is so wet underneath that a soaking, as it is called, is not necessary, but only sufficient to counteract the daily loss by evaporation. Where plants are rooted and growing away a tolerable sprinkling overhead in the evening after hot days will be sufficient. Hollyhocks which are growing freely should have, in addition to a plentiful supply of water, an occasional dose of liquid-manure; and Dahlias, when they have fairly started into growth, will require the same treatment. Those very interesting subjects, the alpine plants, being generally placed high and dry among the nooks and crevices of rocks, are very liable to suffer from lack of moisture, and this if not attended to will be fatal to some of the tenderer varieties. The strong-growing sorts should be from time to time reduced in size, to prevent them from smothering the miniature alpine gems, which are, however, glad of their protecting shelter. Now is a good time to see to the propagation of many of the varieties which, although alpine in the strict sense of the word, are yet largely used for decorative purposes in other than alpine situations. I allude to such plants as Alyssum, Iberis, Arabis, and others of a like nature, which may now be propagated largely in shaded positions under glass without heat, and will be found invaluable for filling up vacancies in the autumn and early spring. Choice varieties of Sweet Williams and Wallflowers may, if desirable, be subjected to the same treatment for increase, but as a general rule seedlings are far less trouble where such plants are required in great numbers; see, therefore, that seedling plants are receiving due attention as to pricking out from the seed-beds to prepare them for planting in the autumn. The soil should be of a sandy nature, to ensure plenty of fibrous rootlets. The seedling plants of the biennial Campanulas or Canterbury Bells should be at once pricked out, to strengthen them for autumn planting, or they will not flower next season at all satisfactorily. *John Cox, Redleaf.*

FRUIT HOUSES.

ORCHARD-HOUSE.—If the fruit has all been gathered from the forcing orchard-house, it will be quite necessary to still attend to the trees, especially if they are grown in pots; the change in the weather requires the utmost vigilance to keep the soil in the pots from becoming too dry; abundant supplies of water will be necessary to keep the leaves green and to thoroughly plump up and consolidate the buds. The leaves must also be thoroughly cleansed from all insect pests; it was necessary to discontinue the syringing as soon as the fruit became slightly soft, and this allows the red-spider to increase to an alarming extent. The syringe must be brought into constant use to destroy this pest, and while the weather is so warm the ventilators may be open night and day. If there are thrips, aphis or scale on the trees it will be necessary to fumigate with tobacco-smoke to destroy the two first-named, and the scale must be washed off by using a sponge with strong soapy water. If any of the trees require to be repotted it is best to do this very soon after all the fruit has been gathered; I use good strong clayey loam. Chalky loam is well adapted for all stone fruits. The turfy part of the loam should be torn up by the hand, and for large trees it ought to be used lumpy; to four barrowloads of this loam add one of rotten stable manure: the refuse of Mushroom beds answers well for this. I have turned the plants out of the pots when they have been in full leaf, and when the roots have also been thoroughly matted round the ball, and repotted the trees in the same sized pots again. I simply take a chopper and cut about 1 inch or 1½ inch all round the ball and as much from the base. Drain the pots well, also wash them clean, place some fibrous turf over the drainage, and ram the potting material firmly round the sides with a wooden rammer. The trees should be thoroughly well watered before beginning to pot them. I do not water the roots for about twenty-four hours after repotting, but the trees are put into a house where the lights can be kept rather close, and the leaves must be continually moistened by syringing. If the weather should be very dry and hot the glass may be shaded, but I have not at any time done this, as I generally pot in cool moist weather; it is better to wait for this than to begin when the weather is not suitable. In a week after repotting fresh roots will be seen running into the new soil, and in two or three weeks the trees will be thoroughly established again, and the leaves will be but little injured. The late house, where the fruit has just finished stoning, will now stand a good deal of heat; 85° or 90° is not too much after the house has been shut up and the trees syringed. The time of shutting up will depend upon the aspect of the house; if it is a lean-to facing east, the sun will not act upon it after 1 o'clock, and it may be shut up soon after 3, the ventilation to be reduced about 1. The last thing at night the ventilators should be opened a little, as in hot weather the sun acts upon a house with an eastern aspect very early in the morning. If the owner is able to attend to his plants as early as between 4 and 5 A.M., it will not be necessary to do this. Reverse the case, and let the house be on the other side of the wall, the sun would not strike upon the glass until much later in the morning, but it would not be well to shut up such a house until nearly 6 P.M. Span-roofed houses and others of the lean-to or half-span description facing south, will all require different treatment as regards opening the ventilators in the morning and shutting up at night. The grower will soon get to know the right time for attending to this by watching the effect of the sun on the temperature. Give the final surface dressing to the trees when it is seen that the fruit has taken the final swelling; at that time the trees will luxuriate in a high temperature and moist atmosphere. *J. Douglas.*

STRAWBERRIES IN POTS.—Layering and potting will now be the order of the day, and strict attention will need to be given to watering both mornings and afternoons. If previous directions have been attended to a batch of early runners will now be rooted; these should be severed from the parent plants and packed closely together in a cold frame, and kept shaded from the sun for a day or two till they recover from the slight check they would otherwise receive if this precaution were not taken during the present oppressive weather. Before potting is commenced it is assumed that the necessary material is already provided to carry on that operation. Our turf heap for this and similar purposes has been stacked up for several months, and frequent layers of fresh cow-manure were added at the time, according to the quality and texture of the soil. When the soil is chopped up for present use we add a little horse-droppings, and mix the whole thoroughly well together. A few hundred pots are always kept in readiness for potting. They are carefully drained, first with crocks and then a thin layer of green moss from the woods is placed with the green side downwards over the crocks; a sprinkling of soot is then shaken over the moss and potting is commenced, using, of course, the roughest portion of the soil next to the moss. An experienced hand is deputed to the work, which is not proceeded with on any consideration unless all the materials are in healthy working order. The roots are slightly disentangled with a sharp-pointed stick, and the soil is rammed moderately firm, and the plants are simply dewed over for a few days till root-action has fairly commenced. Black Prince "Improved" and Vicomtesse Héricart de Thury are the most eligible varieties for early forcing. *W. Hinds, Otterspool.*

VINES.—The general thinning having been brought to a close, Muscats, Alicantes, and Lady Downe's, intended for use after Christmas, or bottling for early spring, should have the scissors passed through them after the stoning period is over, and at the same time after the shoulders should be well tied up to admit of full development of the berries and a free circulation of air through the bunches in autumn. Stop all gross laterals where they interfere with the even flow of the sap, but avoid the unnatural system of pinching every growth to a single leaf, particularly after the termination of the stoning period. The sudden change to bright summer weather is all that can be desired for Grapes in every stage, as the continued absence of the sun in low-lying situations was producing serious injury to Vines having their roots in outside and unprotected borders; but care must be taken that late houses in which the fruit is stoning do not fall below 70° at night, otherwise the sudden rise with sun-heat will cause condensation of moisture on the berries, which do not yet warm so quickly as the atmosphere, and what is termed scalding follows. Muscats, deriving their principal nourishment from inside borders and now beginning to take their last swelling, should have a thorough soaking with liquid manure or guano water at a temperature of 85° to 90°, after which the surface should be well covered with some good nonconducting material for keeping in moisture and the encouragement of root-action on the surface. If outside mulching is still too heavy to admit of the penetration of solar heat, its removal must be carried on piecemeal and with great caution, as many active roots will now be working on the top of the border, and sudden exposure produces a check at the most critical period in Grape culture. Give abundance of air by night and day to Hamburghs now colouring, with a proportionate supply of moisture by frequently syringing the walls and foliage when it can be done without injury to the fruit, and thoroughly soaking the paths and floors several times a day. Vines that were lifted and replanted last autumn will now be making free growth, which must be encouraged by the adoption of the extension principle—abundant atmospheric moisture with slight shade for a few hours; if they show signs of distress early closing with sun heat and a low night temperature. Young Vines struck from eyes this season may still be planted out with every chance of their making fine canes by the end of the season. Inside borders are best adapted for this way of planting. Mulch the borders and water with warm water to keep the roots near the surface. *W. Coleman.*

PLANT HOUSES.

ORCHIDS.—Plants of Cypripedium spectabile grown in the cold frames in pans will in the majority of cases now have ceased bloom; daring this period they should have been arranged in the conservatory or flowering greenhouse; for, if placed in the Odontoglossum-house, the excessive humidity causes the delicate flowers to become much spotted, and quickly to lose their richness and beauty. These, if they require fresh potting, should now be taken in hand, and even if that operation is unnecessary, it is better that they should be examined so that an exact knowledge may be obtained as to the condition of the soil, the state of the roots, and the prospects of so insuring a ripening of the growths just flowered as that in the proper course the buds for next season may be formed plump and solid, in which condition they remain during the winter, and then start away fresh in the spring. When this species is imported it invariably arrives in masses of a loose fibrous nature, much interlaced with Fern rhizomes and roots, indicating pretty clearly the situation in which in a state of Nature it rapidly spreads and flourishes. From teaching such as this, it is pretty evident that to insure a reasonable prospect of success we must to a certain extent follow such self-evident conditions, and set to work accordingly. When, however, we have settled with the material for the roots to ramify amongst—not for these only, but in fact for all others, whether from the tropics or the temperate zones, epiphytal or terrestrial—we are at once confronted with the climatal conditions; and until it is part of a gardener's library or handbooks to have in a cheap and concise work the maximum and minimum temperatures for a twelvemonth of the principal localities either in the Old or New World, with the average amount of rain for every month, the altitude at which they are found, as also a list of the Ferns, foliage or flowering plants found in their immediate locality—until, I say, such a handbook is compiled and issued at a low price, we must trust to our powers of observation and experience, and follow on with those methods we may have proved; and when offering advice to give only that which we know from our own practice to be right and safe to follow and recommend. Such a work I feel confident would be most acceptable, and certainly now the matter should be accessible for such an undertaking; and if with those objects already mentioned extracts from the writings of such men as Humboldt, Wallich, Van Volxem, Hugh Low, Sir Joseph Hooker, Colonel Benson, Rev. C. S. Parish, Dr. Roxburgh, Linden, Pescatore, or such as those lately appearing in these pages upon the vegetation of Perak, by H. J. Murton, Singapore, such a work would be at once interesting, instructive, and of great service, and a careful perusal of its pages would always give us some fresh matter for thought, and thus increase our knowledge and wisdom. Returning however to C. spectabile, more particularly those that require potting: do not divide the crowns, but keep them in the masses as they have grown; use good-sized pans for the larger plants, crocking them about a third of their depth, place some rough peat and moss over the crocks, and make the pieces up in the pans in a compost prepared of rough fibry peat from which the greater part of the fine soil has been shaken out, with some leaf soil, Sphagnum moss, and a small quantity of silver sand, the whole well mixed together. Keep the crowns up level with the rim of the pans, and when all are done give them a good watering and stand them outside under a north wall or shady place, where the growth will mature and a little root-action will take place. Here they must remain till September or October, according to the locality, after which they must be stood back in a cold frame. Give air now freely to all the houses, let nothing suffer for the want of water, and be very particular that the rollers and shading are in thorough working order, and use them whenever the strong light would be injurious. It is better to err a little on the safe side than to risk expensive plants by exposure to an excess of light. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, JULY 6, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 9	Diss Horticultural Society's Show. New Hampton Horticultural Society's Show. South of Ireland Horticultural Society's Summer Show.
WEDNESDAY,	July 10	Royal Horticultural Society's Provincial Show at Preston (four days). Royal Botanic Society's Third Summer Show. Croydon Horticultural Society's Show. Ealing Horticultural Society's Summer Show. Chelmsford and Essex Horticultural Society's Show Royal Caledonian Horticultural Society's Summer Show.
THURSDAY,	July 11	Woodbridge Horticultural Society's Annual Show.
FRIDAY,	July 12	Chipping Norton Amateur Rose Society's Show.
SATURDAY,	July 13	Enfield Flower Show

IT is too much the custom for enthusiasts devoid of mental balance to magnify the object of their predilection to such an extent that a distorted image is the result. Listen to, or read the gushing rhapsodies which it is considered correct to indulge in when speaking or writing of the Rose. We all acknowledge the exquisite beauty of the Rose, we thrill at the recollection of all the pretty things said about it from SAPPHO to SWINBURNE, but if we give ourselves up to too exclusive adoration of any one thing we become, as it were, idolators—deaf, blind, insensible to all but the one object of worship. The consequence is that even the Rose itself becomes vulgarised by our narrowness of spirit. We see the Rose, not as Nature intended us to see and appreciate her productions, but jammed into green boxes, ranged in straight lines on a green-baize table, and we cry in our ecstacy, Lo! this is a Rose.

Walk into the rhodomaniac's Rose quarters and even more painful exhibitions of man's efforts to distort Nature are apparent. Of course, we have not a word to say against the fancies of individuals. Let them indulge in them to their heart's content. It is only when they become aggressive that any one else has a right to interfere. Let them even band themselves together into societies, and cry "Great is DIANA of the Ephesians!" The advantage to horticulture may be very questionable, and even the benefit to Rose culture marred and nullified by the narrow spirit in which the aim is sought to be obtained; but this is a question of detail into which we do not now care to enter. Our present purpose is to protest against the extravagant adulation of any one plant, to the neglect, implied or direct, of other plants. Thus, we have some weak and foolish enough to quarrel with the works of Nature, and assigning to some plants an ethical superiority over others, speaking for instance of the Crucifers and Umbellifers—Cress, Turnip, Radish, Parsley—as humble plants which may be useful, like the humbler classes of humanity, but which are capable, when under cultivation, of no perfect beauty, though reaching some subdued delightfulness in such plants as Stocks and Wallflowers. These humble tribes, we are told, have every floral quality meanly and in vain. One critic says of his humbler plants that they are "white without purity, golden without preciousness, redundant without richness, divided without fineness, massive without strength, and slender without grace." The poor Crucifers and unhappy Umbellifers, therefore, do not belong to the ornamental classes, and the critic being an artist and lover of the beautiful passes them by with a sneer and bows himself, not before the Rose, but before the Lily. He sets Lilies above all other plants in regard to the moral influence which they have exercised on man. "It is impossible to count their influence for good," he says, "in the middle ages." And why? The answer of the critic is that Lilies were grown in church gardens, dedicated to the Virgin and placed upon her shrine—they were the special types of purity. This is pleasing rhetoric, but it is by no means the whole truth, since all the flowers known to the mediæval gardeners were dedicated to the Virgin, and were piled, with the Lilies, in heaps upon her altars.

All the kinds of flowers exhibited in the churches were "types of purity," and they must have all exercised a good influence on the public mind. The mediæval peasant was fond of his "posy," or his single flower, in cap or buttonhole, and wore one quite as often as his modern successor does, and we can quite believe that the effect of such a "type" stuck in a young fellow's cap by his sweetheart must have been a good one.

Flowers in churches were good too. Historians, however, give but a poor account of the morals of the middle ages. The morals of the country which turned out the flowers from its churches when it turned out the Papists have improved. The truth is, the influence of flowers should begin at home; their effect on morals is not by any means solely dependent on their beauty, and from a moral point of view a Cabbage has a great or greater claims upon our recognition than the choicest occupant of the flower-garden. One is a thing of beauty only, and of beauty which is fugitive; the other is one of those plants that possess a heart and stand the proof of trial. Few plants can be more influential for good, for instance, than the Cabbage. Compare it with the gaudy Tulip at a fanciful price per bulb, or with a brand-new French Rose with a Gallic cognomen, scanty bloom, and no perfume, and it will be seen that in spite of its humble flower and small pretensions to beauty, the despised Cabbage is a heavy cropper, the favourite of the cottage garden, the ally of honest industry and of thrift among the poor. It is an excellent thing for their pigs too.

There is really no need to disparage any plant. The Squills, Garlics, and Onions, says our critic, have always caused him great wonder, for he cannot understand why their beauty and serviceableness should have been associated with the rank scent which, he assures us, "has really been among the most powerful means of degrading peasant life, and separating it from that of the upper classes." The critic whom we are criticising must be a fine gentleman; he has visited the poor, especially in towns, and has found the smell of Onions a barrier; so is any bad smell—that of herrings, for example: but suppose it were removed, would no other barrier remain between the two classes, with their different habits and tastes? But our rhetorical critic does not like parting with the humbler plants without according them a few words of praise. He says, "Yet think over that useful vulgarity of theirs, and of the relations of German and English peasant character to its food of kraut-Cabbage (as of Arab character to its food of Palm fruit), and you will begin to feel what purposes of the forming spirit are in these distinctions of species."

What we really "begin to feel" in reading this kind of criticism is that, so far as the ethics of plants are concerned, you get out of your plants exactly what you have previously put into them. "Food of Palm-nut" is not in the least more enobling than "food of kraut-Cabbage." And as for the smell of Onions, why the Leek is the very plant that would be carved on LLEWELLYN'S monument, if he had one; and even such humble plants as the Thistle and Shamrock are the symbols of two heroic nations. Clearly our critic is an artist, and he places plants on the same platform as pictures and statues, which are of value in proportion to their artistic beauty. But what is the moral influence of all the stone and marble work of Rome or Venice, compared with that of some of the humblest domestic plants? The "floral spirit," which our critic speaks of, smiles more sweetly in the plants we have ourselves tended than in the most gorgeous Lilies belonging to our neighbours. Each blade of grass in the cottagers' cow-plot is dearer to him than all the flowers in the next parish. And if one may fancy this be not cosmopolitan it is perhaps something better, since the principle of family life lies at the very root of morals. On a sailor's heart might be imprinted a ship, on an Irishman's a Potato; and they would be depicted there through having deeply coloured their thought and influenced their life. Can anybody suppose for a single moment that the Sternbergia lutea, the Lily of the field, was painted on the peasant's heart, or influenced his life materially, in the middle ages?

We would not for a moment seem to disparage the refining influence of flowers, but their mission had hardly commenced in the middle ages, when the number of gardens was comparatively few, and when they were very poorly furnished; nor in the nineteenth century is it likely to be increased by the inspection of Rose shows as at present ordered.

—— BERKELEY PORTRAIT.—A very successful portrait of this highly-respected botanist now hangs in the Council-room of the Royal Horticultural Society, prior to being placed in the rooms of the Linnean Society. The portrait has been executed by Mr. PEELE, and is intended as a tribute of respect, on the part of his colleagues and friends, for one of the foremost botanists and most esteemed of men. Those who desire to take part in this tribute should communicate at once with Dr. HOGG, the Secretary of the Royal Horticultural Society, the Treasurer, or with Dr. MASTERS, 41, Wellington Street, W.C., the Secretary.

—— THINGS TO BE LOOKED FOR AT KEW, &c.—Of many Pelargoniums lately in flower in the Cape-house at Kew, none have been more charming than P. oxalidifolium. It is a small tuberous stemmed species, now without leaves, but bearing clear pink, regular flowers, much like those of an Oxalis. Zephyranthes carinata is one of the prettiest plants in this house, and a pot of bulbs lasts in flower by succession a considerable time. Theropogon pallidus takes the attention, from the great resemblance of its flowers to Lily of the Valley, but which are associated with long narrow leaves. It was introduced not long since, and figured in the *Botanical Magazine*. Bomarea Carderi, in the Succulent-house near at hand, is flowering splendidly, and it can but be said is a valuable introduction. The flowers have a very elegant effect in floral arrangements, the deep pink of the outer segments and the black spots of the inner combine with unusual shape to form a striking flower. It should always be planted out when possible, it being one of those plants whose perfection of bloom is in proportion to vigour of growth. A figure of it was given in our volume for 1876.

—— STATE ENTOMOLOGISTS.—If we were Americans we should feel proud of having secured such a man as Professor RILEY as entomologist to the Government Department of Agriculture. As Englishmen we congratulate our cousins on their judgment, and we look forward with confidence to the benefit that will accrue to tillers of the soil, of whatever country, and to the advance of science, that will accrue from this excellent appointment.

—— NEW MELONS.—The two best Melons that have come under notice this season are Dell's Hybrid Green-flesh, and Gilbert's York Herald, a scarlet-fleshed seedling. The York Herald is a good-sized, round, thick-fleshed and nicely netted fruit, and was shown for the first time at the recent York Gala, where it took the 1st prize in its class. We did not taste it there, but a few days later we both saw the plant and tasted the fruit at Burghley, and can speak highly of its merits. We never saw the green-fleshed variety until a few days ago when going round the beautiful gardens at Stoke Rochford, with Mr. DELL, its raiser. He has grown it for the last six years, and no wonder, when we say that it has a good constitution, is a free setter, and, like such a sterling good



FIG. 3.—XERONEMA MOOREI.

sort as Read's, almost invariably proves of unexceptionable quality. All that we have tasted were delicious, and the Fruit Committee gave it a First-class Certificate the first time of asking on Tuesday last.'

—— Barrow Field Naturalists' Club.—We hear that this Club has stepped out of the usual circle within which such societies work, and has sent, or proposes to send, at the cost of the Club, selected delegates from its members to visit the Paris Exhibition and report thereon. Some of the large employers of labour have contibuted to the fund for this purpose. We greatly admire the spirit and enterprise which has prompted the Club to do this good thing, and trust that the general result may be as satisfactory as it deserves to be.

—— Nelumbium speciosum, in the Lily-house at Kew, is now an object of great beauty, as is also N. aspericaule, a nearly allied form, of which we spoke in warm terms of eulogy last year. Batatas paniculata, so much admired here every year, is again wreathing the tank with its festoons of large rosy lilac flowers. Russelia, so far as known to cultivators, is a most graceful genus, and in this house R. sarmentosa is ornamental with leafy arching stems bearing a multitude of tubular scarlet flowers. The more common but still rare R. juncea is blooming in the Palm-house, and with slender almost leafless stems, which grow in flowing masses, suggests in the inflorescence the beautiful Thyrsacanthus rutilans.

—— Canada Rice: Zizania aquatica.—This very interesting and important plant, we have the pleasure to record, is once again the subject of culture at Kew. Several attempts to germinate the seeds having met with the usual and almost inevitable failure, the possibility of getting over young seedlings alive suggested itself, and accordingly some were obtained and despatched by a correspondent on the Potomac River. They were selected 2 or 3 inches high, and taken up with so much mud as the roots would hold, and packed in a small cigar-box with damp moss. Two pots are now in flourishing condition. For information concerning Zizania we cannot do better than refer to the exhaustive article by Mr. Leo Grindon, on "New Material for Paper," in our issue of August 1, 1874, p. 129.

—— Sunday Thunderstorms.—It is a curious coincidence that the heaviest thunderstorms with which the metropolis and its neighbourhood have been recently visited have occurred on three successive Sundays, and each one accompanied by heavy rainfalls. Why the exact interval of seven days should thus elapse it is difficult to say, unless it requires just that period of warm weather to wind up the atmosphere to the proper electrical bursting pitch. Perhaps meteorologists may find some explanation in the Sunday being the select day for these noisy atmospheric displays of the greater quiet that reigns that day over the vast region of houses with its population of teeming millions, and consequent less atmospheric disturbance from beneath. Perhaps conjecture will never lead to the discovery of any active cause. The only thing certain is that the storms have come on Sundays, as many worshippers in church or chapel have found to their cost.

—— Kidney Beans.—The delicious succulent summer Bean, and its French ally the dwarf kind, can hardly be plentiful this season. Growers found that the ground was so cold that much of the seed decayed in the earth, and have made no further sign, whilst upon the living plants slugs and snails have supped night after night with such voracity that everything that was green of them has entirely disappeared. Slugs, like the poor, will, we suppose, always be with us; but this season they have been with us in exceptional numbers. Nature is said to be made up of a series of counterpoises or checks; if that be so, it is evident that the "slug" counterpoise is a little out of order, and wants to be speedily set right.

—— Gardeners' Royal Benevolent Institution.—The Thirty-fifth Anniversary Festival of this Institution took place on Wednesday last at the "Albion," Aldersgate Street, under the presidency of Robert Marnock, Esq. This gentleman has been so long known amongst horticulturists as one of themselves, and has at all times been held in such high estimation for his urbanity and courtesy in the several positions in which he was brought into contact with them, and, moreover, has always been so thoroughly appreciated for his talent as a landscape gardener, both by the proprietors and cultivators of gardens, that it was expected there would be a strong attendance in support of the Institution under his presidency, and such indeed proved to be the case, the spacious hall being well filled. The subscription-list amounted to over 600 guineas, the amount collected being, as the Secretary stated, with one exception, the largest obtained at any of these festivals. A good dinner and a sociable company, bent alike on doing honour to the Chairman and on doing their best in support of the charity, contributed no doubt to this happy result. Amongst the company present we noticed Mr. Serjeant Cox, F. A. Philbrick, Esq., Q.C.; J. J. Mechi, Esq., Professor Bentley, John Spencer, Esq.; R. Wrench, Esq.; Dr. Brewer, Dr. Hogg, Messrs. John Lee, J. F. Meston, S. Hibberd, A. Mackenzie, T. Moore, H. J. Veitch, W. Bull, W. Paul, B. S. Williams, W. Robinson, W. Hurst, J. T. Burnell, C. Turner, R. P. Ker, G. Thomson, A. Roger, J. Gray, and other well-known horticulturists. The health of the "Chairman" was proposed in very eulogistic terms, fully applauded by the company, by Professor Bentley; "The President, Vice-President, and Trustees," by John Spencer, Esq. Bowood; "The Royal Horticultural and Royal Botanic Societies," by F. A. Philbrick, Esq., Q.C.; and the "City Guilds," especially in reference to the Fruiterers' Company and its respected Master, by Shirley Hibberd, Esq.

—— Brazilian Aroids.—The last part of the *Flora Brasiliensis*, lately issued, contains a monograph of these plants from the pen of Professor Engler of Kiel. It is of the more importance, inasmuch as it treats *inter alia* of such genera as Caladium, Dieffenbachia, Monstera, Philodendron, Anthurium. The monograph is illustrated with some fine uncoloured lithographic illustrations.

—— International Congress of Botany and Horticulture, Paris, 1878. — The following arrangements have been made:—

Friday, August 16.—Opening meeting in the Palace of the Trocadéro at 3 P.M. Election of Chairman, &c. Reception at the house of the Horticultural Society, 84, Rue de Grenelle, St. Germains, at 8 P.M.

Saturday, August 17.—Horticultural meeting at the Trocadéro at 3 P.M.; botanic meeting at the house of the Society at 8 P.M.

Monday, August 19.—General meeting at the Trocadéro at 3 P.M.

Tuesday, August 20; Wednesday, August 21; Thursday, August 22; Friday, August 23.—Horticultural meeting at the Trocadéro Palace at 3 P.M., botanic meeting at the Society's house at 8 P.M. on each day.

Saturday, August 24.—Last day of congress, general meeting at 1 P.M. in the Palace at Versailles (Galerie Louis XIII., Cour de Marbre).

—— Scottish Horticultural Association.—The monthly meeting of the Scottish Horticultural Association was held on Tuesday, the 2d inst., at 5, St. Andrew Square, Edinburgh, Mr. Dunn, Dalkeith Palace Gardens, President, in the chair. Mr. A. D. Mackenzie read a valuable paper on the "Heating of Horticultural Buildings." He alluded to the various methods which had been tried for heating such buildings, but the only two effective plans were by flues or by the circulation of hot water in pipes. The old flues had been almost entirely superseded, the cost of repairing, their original expense, and other disadvantages having contributed to this result; but the system of heating by hot-water pipes had spread to such an extent that it now formed an important item in the industry of the country. He described two methods of heating by hot water—the one by high pressure with small malleable iron pipes, and the other by low pressure with cast-iron pipes and boilers. Mr. Mackenzie then gave his experience of the various boilers in use, giving preference to the saddle boiler; and closed with a few hints in reference to the working of the whole system. All the members who took part in the discussion agreed that the saddle boiler was the best in use. Mr. James Grieve read a paper on "Campánulas," in which he enumerated the different kinds and the places from whence they had been first brought to this country, and gave a general idea of the mode of cultivation. The following subjects were exhibited:—Rare species of Iris, Tropæolum polyphyllum, and Alstrœmeria chilense, by Mr. L. Dow; twenty-four new seedling fancy Pansies, by Messrs. Downie & Laird; beautiful flowers of the Hoya carnosa, by Mr. R. Robertson; and large spikes of Stocks, by Mr. W. Black.

—— Westminster Flower Show.—The College Garden, Westminster, was, on Thursday last, the scene of the show of "The Society for Promoting Window Gardening amongst the Working Classes." The object of this society is sufficiently detailed by the title. The show was interesting, as illustrating what can be done in even such an atmosphere as the purlieus of Westminster. This, the twelfth exhibition, was better than those of previous years, no fewer than 900 exhibitors entering into competition. The interest of the show was added to by baskets of cut Roses, Water Lilies, &c., contributed by the Baroness Rothschild, the Duchess of Nothumberland, Countess Brownlow, Lady Hatherley, Messrs. H. Lane & Son, &c. We may congratulate the committee on the successful result of their beneficent labours, and trust that their success will nerve them to yet stronger efforts. The principal plants exhibited were Creeping Jenny (Lysimachia), Pelargoniums, Fuchsias, Musks, &c.

—— A New African Palm.—Among other things brought home by Hildebrandt from Africa were seeds of a Palm, which Wendland declared to belong to some undescribed genus. The seeds grew, and the seedlings in the botanic garden at Berlin are now about 20 inches high. When full grown it is stated (in the *Monatsschrift*), on the authority of Hildebrandt, to be only 6 or 7 feet high, and it has elegant pinnate leaves resembling a Chamædorea of the C. elegans type. It has been named Ravenea Hildebrandti, and will be sent out by Neumann, of Schöneberg, near Berlin.

—— Mr. Vernon Heath's Photographs. — Those who wish to see faithful renderings of trees and atmospheric effects would do well to inspect the very beautiful photographs of well-known trees and gardens taken by Mr. Heath. Photographic records of trees taken at definite intervals would be most valuable as affording evidence of the rate of growth, as well as illustrating the general aspect and mode of growth. It would be easy to affix a scale so as to insure correct measurements. Mr. Heath has lately issued a series of reduced views from his larger pictures, so as to bring them within the means of most lovers of trees and landscape art.

—— Plants of Morocco.—The last part of the *Journal of the Linnean Society* is entirely filled with the concluding portion of Mr. John Ball's descriptive list of the plants of Morocco.

—— Orchis foliosa.—We learn that the Lawson Nursery Company have just now 1000 plants of Orchis foliosa in flower. It deserves all and more than the praise that has been given to it. As a hardy perennial or as a pot plant, few things can surpass it. Some pots containing six to nine roots grown in a cold frame are extraordinarily fine. No plant is of easier culture. It is grown in Edinburgh in a peat-bed, behind a wall, a good deal shaded, and a little moist, and never receives any protection.

—— The County and Borough Magistrates' List for 1878 (Butterworth's).—Under this title Mr. Thom has issued a very useful list of the local magnates for each county and borough in England and Wales. Within less than 400 pages we have a complete list of the Peers of the realm, the members of the House of Commons, the officers of the City Companies, the Lords-Lieutenant and Magistrates of Counties, the municipal authorities of the various boroughs, and of other high and puissant seignors. The university degrees, clubs, and residences of these gentlemen are duly set forth, so that the book forms a compact and select directory. We notice one omission —that of the Judges and County Court Judges, who should have been included in such a list.

—— Gardening Changes. — We understand that, owing to a large reduction in the establishment,

Mr. LANE is leaving Pyrgo Park. The Orchids and specimen plants will be sold next month. Mr. LANE has worked up some fine specimens during the last six years, and Major-General FYTCHE has expressed great regret at having to part with his gardener. The gardens and grounds are in excellent condition at present.

TRESCO, ISLES OF SCILLY.

WHEN I wrote my letter in your paper of May 25 I had no idea that Mr. Saunders was "infringing the privileges of the Isles of Scilly;" I only wished to tell him that he was quite mistaken in supposing that the climate of Jersey was the finest this side of the equator for the growth of New Holland plants, &c. This I now maintain with more confidence, since at p. 735 he seems to challenge comparisons and asks, could I, were he to accept my invitation to visit Scilly, show him trees of Eucalyptus globulus, 15 to 20 feet high? I answer Yes, and much larger; there is one here 40 feet high and 48 feet in diameter of branches, and girth of trunk 8 feet at 3 feet from the ground, before which Mr. Saunders' trees must hide their diminished heads. The tree is at present in flower abundantly and very interesting, especially with the lid of the calyx, which covers the flower, and drops off just before it expands, and from which the plants derives its name, "to well cover." Some years ago the leader of this tree was broken off by a severe gale, and it has since grown out more laterally. I may add here that there are many varieties of Eucalyptu growing in these gardens, some of them very beautiful, especially the young foliage. Yes, Mr. Saunders, Edwardsias grow freely—three varieties, E. grandiflora, E. microphylla, and E. Macnabiana, all very interesting, especially so when in flower. The Pittosporum I have already spoken of at p. 663, and here let me call Mr. Saunders' attention to the Pittosporum Tobira variegatum. He says at p. 569 that "It is with much difficulty we manage to keep it alive," and in my letter at p. 663 I say "It grows freely here." Camellias grow freely and become quite small trees; there is an old double white one 15 feet high and 54 feet in circumference of branches, up which I have seen a young man climb to cut the pure white flowers; and Magnolias—but I cannot say 50 feet. M. grandiflora is trained against a wall, but we have M. Thompsoni as a standard and in flower. Australian Acacias of "fine form and beautiful foliage," one, A. brachybotrys, especially so, with its soft golden foliage, and, so far as I can learn, the only specimen in England; and A. lophantha and A. Newmanii, literally arching over the walks, and in some parts of the garden growing so rude and rampant that we are forced to use the saw and pruning-hook freely to them. Phormium tenax, or New Zealand Flax—the very allusion to it provokes a smile. Here there are banks of it, and it is planted pretty freely for screens, and tons of it might be cut—could the manufacturers manage to clear the fibre of the gummy matter—for making cordage. It flowers freely, and we have individual plants much larger than Mr. Saunders speaks of; but why hold this plant up as an instance of a superior mild climate? I know that some years ago there was a large plantation of it growing in the gardens at Stackpole Court, the seat of the Earl Cawdor, in Pembrokeshire, and I know it to be pretty hardy further inland. We have many Ericas growing; most of the Cape Heaths stand out well. Could Mr. Saunders show me a Pelargonium stalk 14 inches in girth? We have such here, and only a few weeks ago we cleared away a Pelargonium hedge that had stood over thirty years. Escallonia montevidensis grows freely, and E. macrantha and E. alba floribunda are now in full flower. Ixias do well, especially I. viridiflora, and all the Cape bulbs, and Guernsey Lilies and Belladonna in abundance, portions of the gardens being set apart for their growth. Calla æthiopica is quite at home round the margin, and in the lakes, not by hundreds, but by thousands, and no one who has never seen a bank of these beautiful white Lilies can conceive the loveliness of such a sight, especially at early morn when bespangled with dew.

So much for the plants named by Mr. Saunders; and now let me tell him, if he will accept my invitation to visit Tresco and judge for himself, I will promise to show him sixteen plants of Agave americana, or American Aloes, coming into bloom, throwing up large flower-spikes, at the present time 20 inches in girth, and growing at the rate of from 4 to 6 inches a day, and this they will do till they attain a height of from 25 to 30 feet. He would now see the Metrosideros florida in full flower, and in a few days' time M. robusta, a fine plant, 24 feet high and 55 feet round, covering every green leaf with its brilliant flowers—a sight once seen not soon forgotten. At present he would see avenues of Dracæna indivisa in full flower, filling the air with fragrance like some spice island. The rockworks are covered with large masses of Mesembryanthemums, dazzling to look at when in flower, intermixed with bright Pelargoniums that live out the winter through, and Cacti and Aloes and Agaves in variety, and many other choice plants. Here he will see fine specimens of tree Ferns growing out, Dicksonia antarctica and D. squarrosa, and Chamærops excelsa in beautiful flower like large bunches of coral, and C. humilis and Seaforthia elegans with fronds 12 feet long, Aralia Sieboldii, and large masses 20 feet high of A. papyrifera and Tupidanthus calyptratus, with Dasylirions, and many other beautiful and rare plants. I could still go on speaking of the plants that grow out-of-doors here, this I think will suffice for Mr. Saunders, and convince him that he has claimed too much for Jersey. I have said nothing about fruit, for the simple reason attention has not been given to it, but I have seen Pears grown at St. Mary's Island that would compare favourably with Jersey Pears—viz., Gansel's Bergamot. Apples do well and all bush fruit, but little attention has been given to the cultivation of fruit on the islands; were it so I feel assured in sheltered situations they would do well.

There are many small vineries on the islands where good Grapes are cut without fire-heat by the third week in July; Figs do well, and I feel confident were a company formed, as there is at Jersey, for Grape growing, Jersey would soon have to look to its honours in this matter also. We are earlier in the market with Asparagus and new Potatos than the Channel Islands. Asparagus is generally sent off by the middle of February, and new Potatos by the end of March and first week in April (from the open air, earlier from frames and vineries). We soon know when the Channel Islands begin to send these things, for it brings the market price down. The mere enumeration of the choice plants that grow out-of-doors here can convey no idea of the tropical and altogether unique appearance of the gardens, so unlike any other gardens they must be seen to be fully realised.

Visitors who have travelled much assure me there is nothing to surpass them in Italy or Algiers in their tropical appearance and general interest, and great praise is due to the late "Lord Proprietor," Augustus Smith, Esq., who designed and planted them with so much skill and forethought, and no less is praise due to the present Lord Proprietor, T. A. S. Dorrien Smith, Esq., who still keeps them up with so much interest. By his liberality the gardens are always open to visitors, and at the entrance lodge is this notice—"In case cuttings are desired of any of the peculiar plants growing in the garden, the gardener has orders to supply them." We experience all the mildness in winter which Mr. Saunders speaks of in Jersey, our mean winter temperature being 46°; frost is seldom felt, but the drawback is the wind coming in from the Atlantic. Shelter and protection to all these beautiful plants are of vital importance, and this is done with Escallonia macrantha and Euonymus hedges; but there are sheltered vales and nooks where the winds have but little ill effect. *Geo. D. Vallance, gr. to T. A. S. Dorrien Smith, Esq., Lord Proprietor of the Scilly Isles.* [The reader will do well to refer to the articles on Tresco, with illustrations, in our volumes for 1872, p. 1102; and 1876, vol. v., n.s. EDS.]

A SYNOPSIS OF THE KNOWN FORMS OF AQUILEGIA.

THERE is perhaps no genus of hardy herbaceous plants in which the naming is in a state of greater confusion at the present time than in Aquilegia. This is not to be wondered at, for in the first place the genus, like its neighbours, Thalictrum, Aconitum, Helleborus, and Delphinium, is one of exceptional difficulty, many of the forms named from of old being very close to one another, and marked by characters so slight that it needs a large amount of special attention to be devoted to the genus before one can individualise them. Then, as in so many genera that belong to the orders treated in the early volumes of De Candolle's *Prodromus*, there is no recent general enumeration of the species and forms in existence. The genus is distributed universally through the north temperate zone, and consequently is dealt with partially in a very large number of recent local Floras. As I have attempted this summer to work out the Kew specimens in the garden and herbarium, I should like to place on record for the aid of other cultivators the result of my work in the form of such a synopsis as the readers of the *Gardeners' Chronicle* are by this time pretty well accustomed to as my contributions to gardening literature. For horticultural purposes we may conveniently subdivide the Columbines into three groups, according to the size of the flower, which I will call Micranthæ, or small-flowered Columbine; Mesanthæ, or middle-sized flowered species; and Macranthæ, the large-flowered kinds. Each of these three groups is represented both in the Old and New World, and unless it be correct that the American A. formosa extends its range over into Kamschatka, the forms of the New and Old World are all different specifically; and I believe furthermore that, although in the *Flora Indica* the Himalayan forms are all massed under the name of A. vulgaris, that by the general consent of gardeners they too would be individualised, and separated from both the Europæo-Siberian and American forms.

Beginning at the smaller-flowered end of the series the forms which I am able to distinguish are as follows:—

Group I. *Micranthæ.*—Sepals not more than ½ or at most ¾ inch long, so that the expanded flower is 1 inch or 1½ inch in diameter.

* Old World Species.

1. *A. Einseleana*, F. Schultz, in Fl. Gal. et Germ. Exsic., No. 1003 (1847); *A. Bauhini*, Schott, in Verh. Zool. Bot. Ver. Wien, 1853, p. 128; *A. pyrenaica*, Koch, Syn., edit. ii., p. 24, and Reich. Fl. Excurs., p. 479, non D.C.; *A. viscosa*, Reich. Fl. Germ. Exsic., No. 1983, and Ic. Fl. Germ., tab. 4731 *b*, not Gouan.—A plant of slender habit, not more than ½ foot or 1 foot high, the lower part of the stem glabrous, the upper shortly pubescent. Primary petiolules of the leaf ½—1 inch long, bearing three sessile segments with broad shallow rounded end-lobes; texture of the lamina moderately firm; both surfaces glabrous, the upper green, the lower rather glaucous. Stem often branching below the middle, its leaves usually mere sessile bracts with linear segments; flowers 4—8 to a stem; peduncles long, stiffly erecto-patent. Sepals oblong, acute, usually bright lilac, about ½ inch long. Lamina of petal cuneate, nearly as long as the sepal, ¼ inch broad, rounded at the apex, pale blue or white; spur slender, nearly straight, a little shorter than the blade, the end not swollen. Head of stamens equalling the lamina of the petal. Mature follicles ⅜—½ inch long, narrowed gradually into a ⅛ inch slender style.

A native of Switzerland, Piedmont, and Central Europe, as far east as Carinthia and the Tyrol, principally over limestone, ascending to 6000 feet above sea-level. This is a widely-spread plant, the pyrenaica of a large number of local Floras of Central Europe, the true species of that name being restricted to the Pyrenees.

2. *A viscosa*, Gouan, Fl. Monsp., p. 267; Illust., tab. 19, fig. 1.—A plant of slender habit, not more than 1 foot high, the whole stem, especially upwards, furnished with short viscose pubescence. Primary petiolules of the leaf 1 inch or 1½ inch long, bearing three sessile segments reaching 1 inch in length, with deeper lobes than in the last; texture thinner than in the Einseleana; both sides green and finely pubescent. Stem branching from low down, 3—5 flowered, its leaves reduced to mere bracts, with linear or entire lanceolate segments. Sepals oblong acute, blue-lilac, ½—¾ inch long. Lamina of the petal as long as the sepal, rounded at the top; spur rather shorter than the lamina, stout, decidedly incurved, and swollen into a knob at the top; head of stamens just equalling the lamina of the petal. Mature follicles ½ inch long, densely pubescent; style slender, recurved, nearly as long as the follicle.

A native of the hilly tracts of the south-east of France. Gouan's stations are Meyrules in the Lozère and the Vigan in the Gard department. The plant does not seem to have been understood by Grenier (*Flore de France*, vol. i., p. 44), for he gives the name as a mere synonym of A. vulgaris. Gouan's figure shows it in fruit only, but we have a type specimen from his herbarium in flower at Kew.

3. *A. thalictrifolia*, Schott, in Verh. Zool. Bot. Ver. Wien, 1853, p. 130.—A plant of slender habit, about 1 foot high, with stems, as in the last, clothed down to the base with fine viscose pubescence. Primary petiolules of the leaf 1 inch or 1½ inch long, each bearing three distinctly stalked segments cut into deep oblong lobes with a distinct space between them; texture of the lamina moderately firm, both surfaces green and finely pubescent. Stem bearing about three flowers, its leaves

not more than sessile mere bracts, with small simple linear segments. Sepals oblong acute, bright lilac-blue, about ½ inch long. Lamina of the petals about as long as the sepals, rounded at the top ; spur slender, nearly straight, rather shorter than the lamina, not swollen at the tip. Head of stamens the same length as the lamina of the petals. Follicles pubescent, not more than ½ inch long, narrowed into slender spreading styles ½ inch long.

A native of calcareous rocks in the Tyrol, at an elevation above sea level from 2000 to 4000 feet, very like A. Einseleana in the flower, but well-marked from every other species by its leaves.

4. *A. parviflora*, Ledeb. in Mem. Acad. Peters., vol. v., p. 544 ; Fl. Ross, vol. i., p. 57 ; Ic. Altaic., t. 408 ; D.C., Prod., vol. i., p. 51.—Habit slender, the stem being rarely more than 1 foot high, glabrous from the base up to the pedicels. Primary petiolules of the well-developed leaves 1 inch or more long, bearing three sessile segments ½—1 inch long, with about three broad rounded lobes ; texture firm for the genus ; upper surface green and glabrous ; lower very glaucous, quite white. Flowers several, the smallest in the genus, blue-lilac or light claret or white ; leaves of the stem small and bract like, with linear or lanceolate entire divisions. Sepals ovate or oblong, ¼—⅜ inch long. Lamina of the petal about half as long as the sepal, obtuse, cuculiate ; spur very short (⅛ inch), stout, curved. Head of stamens about as long as the sepals. Follicles glabrous, reaching an inch in length ; style ⅛ inch.

A native of Eastern Siberia. One of the best marked species of the genus.

5. *A. lactiflora*, Karel. et Kiril. in Mosc. Bull., vol. xv., p. 374 ; Walp. Rep., vol. i., p. 50.—Stature of A. vulgaris, the stem glabrous in the lower, finely pubescent in the upper part. Primary petiolules of well-developed root-leaves 1½—2 inches long, bearing three sessile or shortly stalked segments, thin in texture, above 1 inch in length, green and glabrous on both sides, with main lobes reaching halfway down, with many round or oblong ultimate segments. Stem leaves petioled and compound. Flowers about three to a stem. Sepals nearly white, oblong-lanceolate, ⅜—½ inch long. Lamina of the petal about half as long as the sepal ; spur ⅓ inch long, slender, nearly straight, not knobbed at the tip. Head of stamens as long as the lamina of the petals. Follicles not seen.

A native of the Altai range in South Central Siberia. A little-known plant, which approaches closely the Himalayan A. pubiflora.

6. *A. pubiflora*, Wall. Cat., No. 4714 ; D. Don, in Royle, Ill. Him. Pl., p. 55.—Habit much more slender than in A. vulgaris. Flowering stems 1—2 feet long, finely pubescent from the base upwards. Primary petiolules of the leaf 1—1½ inch long, the three divisions in well-developed leaves distinctly stalked and cut into three down to the base, the end segment 1—1½ inch long, with shallow broad ultimate lobes ; texture thinner than in A. vulgaris ; both surfaces glabrous ; upper green, lower slightly glaucous. Flowers often five or six to a stem, which is branched low down, and bears two or three large petioled biternate leaves. Sepals oblong or oblong-lanceolate, acute, not reflexing, ½—¾ inch long, finely pubescent, pale blue or pale claret. Lamina of the petal obovate, rounded at the top, ⅜—½ inch long, ⅓ inch broad ; spur moderately stout, much incurved, ¼ inch long. Head of stamens about as long as the lamina of the petals. Follicle ½—⅝ inch long, densely pubescent, narrowed suddenly into a style nearly as long as itself.

Widely spread through the temperate region of the western half of the Himalayas, ascending above Simla to 10,000 feet above sea level. Var. *mussooriensis*, D. Don, Royle, Ill., p. 55, seems to be a form of this with more lanceolate sepals, and *A. vulgaris* var. *viscosa* of the *Flora Indica* another form with dense short viscose pubescence, extending even to the petioles and petiolules of the leaves.

7. *A. viridiflora*, Pallas, in Act. Petrop., 1779, p. 260, tab. 2 ; Jacq. Ic., tab. 102 ; D.C. Prod., vol. i., p. 51 ; Led. Fl. Ross, vol. i., p. 57.—Habit of growth more slender than in A. vulgaris. Stems 1 foot or 1½ foot long, finely pubescent throughout. Primary petiolules of well-developed leaves 1—2 inches long, the three divisions sessile, or the end one shortly stalked ; texture thinner than in A. vulgaris ; ultimate lobes narrower and rather deeper ; upper surface green ; lower slightly glaucous. Flowers several to a stem, which bears two or three large petioled biternate leaves. Sepals oblong, greenish, ascending, obtuse, ⅜—½ inch long. Lamina of the petal also greenish, cuneate, nearly or quite as long as the sepal, and nearly or quite as broad as long ; spur straight, slender, ½—⅝ inch long, not knobbed at the end. Head of stamens exserted beyond both petal-lamina and sepal. Follicles pubescent, ½—¾ inch long, with styles of the same length.

A native of Eastern Siberia. The type runs by gradual stages of transition into the better known *A. atropurpurea*, Wild.; D.C. Prod., vol. i., p. 51 (*A. davurica*, Patr., in Deless. Ic. Sel., t. 49 ; spur too much incurved), which is well figured in the *Botanical Register*, tab. 922, in which the lamina of the petal is a dark dull lilac-purple, and the sepals and spur are more or less tinged with the same hue.

8. *A. Buergeriana*, Sieb. et Zucc., Fam. Nat. Jap., No. 333 ; *A. atropurpurea*, Miquel in Ann. Mus. Lug. Bat., vol. iii., p. 8 ; Franch. et Sav. Enum. Jap., p. 12, non Wild.—Habit of growth more slender than in A. vulgaris. Stem above 1 foot long, finely pubescent in the upper part, glabrous towards the base. Primary petiolules ½—1 inch long, the three divisions sessile, the ultimate lobes short, broad, and close, the upper surface green, the lower glaucous, both glabrous. Stem about five-headed, bearing two or three petioled biternate leaves. Sepals oblong-lanceolate, acute, ⅜ inch long, spreading in the fully expanded flower, yellow, tinted with claret-purple. Lamina of the petal cuneate, ½—⅝ inch long, ⅓ inch broad, nearly truncate at the tip, pale primrose-yellow ; spur erect, nearly straight, slender, as long as the sepals, and the same colour. Head of stamens as long as the lamina of the petals. Follicles pubescent, ⅝—¾ inch long ; style not more than half as long as the follicles.

A native of Japan. My description is taken from the living plant, sent to Kew by Dr. Regel. From atropurpurea, with which Miquel and Franchet and Savatier join it, it differs in the colouring of the flower, the different shape of the lamina of the petals, and the much shorter style.

* New World Species.

9. *A. brevistyla*, Hook. Fl. Bor. Am., vol. i., p. 24 ; Torrey and Gray, Fl. N. Amer., vol. i., p. 30.—Habit of growth more slender than in A. vulgaris. Stems glabrous n the lower part, finely pubescent upwards. Primary petiolules reaching above 1 inch in length, bearing three sessile or nearly sessile divisions ; ultimate lobes rather deeper and narrower than in A. vulgaris ; texture of the lamina thinner ; upper surface green ; lower slightly glaucous. Flowers as many as five or six to a stem, which bears two or three petioled biternate leaves, blue-lilac, or pale claret or white, just as in A. vulgaris. Sepals oblong or oblong-lanceolate, about ½ inch long. Lamina of the petal slightly shorter than the sepals, ¾ inch broad, nearly truncate at the top ; spur stout, decidedly incurved, ⅓ inch long, knobbed at the end. Head of stamens not protruded beyond the lamina of the petals. Follicles pubescent, ½ inch long ; style the shortest of the genus, ⅛—¼ inch long.

Sitka, Hudson's Bay Territory, and down the Rocky Mountains as far south as Colorado. It agrees with A. vulgaris in the colour of the flower, all the other New World kinds except A. cœrulea having bright red and yellow tints predominant. A. canadensis var. hybrida of Hooker comes nearest to this, from which it differs by its rather larger flowers, with the head of stamens decidedly exserted beyond the lamina of the petals. It looks like a hybrid between brevistyla and canadensis.

10. *A. canadensis*, Linn. Sp. 752 ; Bot. Mag. t. 246 ; Herb. Amat., tab. 305 ; Lodd. Bot. Cab., t. 888 ; D.C. Prod., vol. i., p. 50 ; Torrey and Gray, Flor. N. Amer., vol. i., p. 29.—Habit of growth rather more slender than in A. vulgaris. Stems 1 or 2 feet high, finely pubescent throughout or glabrous in the lower part. Primary petiolules 1 or 2 inches long in well-developed root-leaves, their three divisions distinctly stalked, the ultimate lobes narrower and deeper than in A. vulgaris, the texture thinner, the upper surface green, the lower slightly glaucous. Flowers several to a stem, which bears two or three petioled biternate leaves. Sepals lanceolate, yellowish or tinted on the back with red, about ½ inch long, not reflexing. Lamina of the petals falling a little short of the sepals, yellowish, nearly truncate ; spur ⅝ inch long, nearly straight, thick in the upper half, slender in the lower half, bright red throughout, knobbed at the top. Head of stamens much protruded beyond both petals and sepals. Mature follicles about ¾ inch long, with styles about half as long.

Universally spread through the Eastern States of North America from Canada to Florida. It was well known to our pre-Linnean botanists and cultivators, being one of the plants introduced to Europe by Tradescant. It is described and figured in Parkinson's *Theatrum*, p. 1367, under the name of "Aquilegia virginiana flore rubescente—the red Columbine of Virginia," and in Miller's *Icones*, tab. 47, as "Aquilegia præcox pumila canadensis." We have a variety gathered by Fendler in New Mexico, with a smaller limb than in the type (linear-oblong sepals ½ inch long, lamina of petals ¼ inch), and a very long slender spur. True canadensis is confined to the east side of the Rocky Mountains. The species that represent it in the Pacific States are A. formosa and truncata.

11. *A. flavescens*, S. Wats. Bot. 40 Parall., p. 10 ; *A. canadensis var. aurea*, Roczl, in Regel Gartenfl., 1872, p. 258, tab. 734.—General habit of A. canadensis. Stems 1—2 feet high, glabrous in the lower, finely pubescent in the upper part. Leaves like those of canadensis in cutting, stalking and texture, pale green on the upper surface, rather glaucous beneath. Flowers several to a stem, the lower leaves of which are petioled and biternate. Sepals lanceolate, ½—¾ inch long, yellow or slightly flushed on the back with red, reflexing in the fully expanded flower. Lamina of petal obovate-cuneate, paler yellow, ¾—1 inch long, truncate at the apex ; spur shorter than in A. canadensis, ⅜—½ inch long, yellow, slighly incurved, knobbed at the end. Head of stamens much protruded beyond the lamina of the sepals. Follicles pubescent, ½—¾ inch long ; style slender, ⅜—½ inch.

Subalpine zone of the Rocky Mountains in Utah and Oregon, at an elevation of from 5000 to 7000 feet above sea level. This is now widely spread in English gardens. *J. G. Baker.*

GOOD SEEDS — HOW SHALL WE GET THEM?

IT is easy to answer the above question by saying, "Go to a respectable seed-shop ;" but the seed vendor has to ask the same question, and gets for his answer "Go to a respectable seed grower ;" and he, poor man, has to ask the question in its ultimate sense, and to him Echo answers "How?" He has no one else to go to, and the problem is left for him to solve. Efficient seed growing comprehends a great deal beyond the simple manual labour of digging, sowing, weeding, hoeing, reaping, &c., which none but the practical and experienced seed grower can comprehend, or the problem would not be a difficult one. Seeds are unique in their characteristics, and cannot be compared with any other product of art. The seed grower has to aim at getting a live object, and keeping it alive when he has got it. A seed is absolutely worthless for sowing if it has no life ; its life, however, is latent, and the inexperienced grower may be easily deceived, as by injudicious management, although he may get full-sized and apparently good seeds, he may get little or no vitality in them. A good seed consists of a well developed embryo with a quantity of food for its nourishment in its first stage of growth, enclosed and well protected by integuments. Plants choked and starved by weeds, or even by each other, cannot produce seeds of first quality. This is especially evident in Cruciferæ, which not only produce imperfectly developed seed-vessels, containing small and imperfect seeds, but also suffer very much more if attacked by blight, when their cultivation is badly managed or neglected. On the other hand, a too luxuriant growth is not good for the production of good seed. This is more especially evident in Leguminosæ, which, when encouraged by a suitable season, rich soil, &c., in the production of robust stems and leaves, will go on in that direction till the termination of the growing season, or till they are fairly brought down, being smothered by their own luxuriance. While such growth is going on, the blossoms and young pods will drop off in great numbers, and those which remain will come to maturity by such a slow process that they never ripen well, and consequently the seed will gain but little vitality. The best seeds are produced by a plant which has a healthy and free growth till it is well in blossom, and is then kept only sufficiently nourished to enable it to produce and perfect its seed, that it may, by the performance of this, its final use, suffer exhaustion and death.

Although the living embryo plant is well provided for and protected by Nature the integuments are not insensible to external influences ; if they were, the embryo could never come forth to peform its uses in the world, but its cradle would be its grave. A full-grown seed gains vitality by the process of ripening, and this vitality the seed is able to retain to an indefinite period if not exposed to any external influences. Heat, air, and moisture, in various degrees and proportions according to the nature of the plant, are necessary, and also sufficient to call forth the latent vitality of the sleeping embryo, and give it actual and evident life. When a seed imbibes water, and with it a certain degree of heat, it expands, and if

again exposed to a dry atmosphere it again contracts; and this alternate expansion and contraction by alternate exposure to wet and dry atmospheres is very injurious to seeds. When the seed expands by exposure to atmospherical influences the embryo is already moving, and begins to expend its latent vitality by its struggles for actual and evident life. A well developed and fully ripened seed should never be once exposed to a wet atmosphere, not even the dewy eve, if it can be prevented. There is the secret of getting hold of a good seed—a living object—and keeping it alive. Many seeds are destroyed, or partly destroyed, especially in wet seasons, by the injudicious treatment of the careless or inexperienced. Seeds that ought to retain their vitality five or six years are often found dead at the end of twelve months. No seeds can be kept alive in the seed shops for any great length of time if they have been allowed to waste their lives by exposure in the hands of the seed-grower. Some entertain the idea that corn and many kinds of seeds are benefited by exposure to a good shower or two of rain after they are cut, or, as some would say, having plenty of field room. It is true that many or most seeds are easier to thresh after being left exposed to the weather, and some may even increase in bulk after being cut if left in the straw exposed to a few genial showers; but it is a rule, probably without exception, that the less a ripened seed is exposed to atmospheric changes the longer it will retain its vitality or powers of germination. On the other hand, there is a loss when seeds are cut and dried too quickly. Let it be remembered also, that each of the multitudinous kinds of seed requires its peculiar treatment, and that the treatment of each requires modification according to the uncertain and ever-changing seasons, and it will be seen that the duties of the seed-grower are something more than can be done by the simple line and rule process. Let all seed vendors visit seed growers as often as possible during seed harvest, and note the *modus operandi* of seed-gathering, and see what kind of seeds, as to quality, they may expect. *G., St. Osyth.*



Home Correspondence.

French Gardens and French Humour.—*Apropos* of French gardens, and as a specimen of French humour, I cull the following from a French daily paper. In Paris, the moment the sun shows his face for a moment between two passing clouds the lively Parisians become instantly seized with rural vertigo. The only subject of discourse is the delight of a country life, and the only conversation to be heard is as follows: "Decidedly, I must go to my country villa," "I must indeed return to my country house." These villas and country houses are for the most part—well, what, gentle reader, do you imagine? You shall hear. Monsieur M. X. possesses a miniature garden, so miniature, indeed, that the pavilion, the summer-house erected at the extremity, takes up half its area. M. X. feels only flattered at the noble edifice being styled his château. The other day it was extremely hot and sultry, and M. X. had just watered his thirsty Lettuces for the forty-fifth time, they were swimming. "Euphrasia," said Monsieur to his wife, "pray open the dining-room door, to let a little air into the garden." *T. S. J.*

Garden Pests.—Garden pests are at this time of the year in great force. "It is impossible," says Bernardin de St. Pierre, "to give the history of a city without saying something of its inhabitants." With the inhabitants of gardens the gardener must indeed make an intimate acquaintance; there are the caterpillars that eat up the leaves and delicate flower-buds of the Rose, the leaves of the Gooseberry, Currant, and Cabbage; the ants that are troublesome at the roots of things; slugs and snails that nip young plants in the bud, and leave their slimy silvery trail over wall fruits; then, again, there are the mice that wait to demolish the Peas just deposited in the drills, and the sparrows, blackbirds, and jays are sharpening their beaks for the Cherries. But upon the petals of flowers, upon every leaf, there are myriads of little creatures that may be studied, and are worth studying, for there are wonders in every dewdrop and upon every film of Thistle down. It is happily the tendency of the times to direct the studies of youth to these beauties and wonders. The father of a family who would take an interest in the worlds which abound in his garden, and would open them up to his children, would do them a real service. How many errors and extravagances of youth might not be checked by the early infusion of a strong taste for scientific gardening and botanical research. To direct the inquiries of the young to this inner life of the garden is to strengthen their minds for loftier inquiries in the future. Our mind has a better grasp of the grandeur of the universe when it has become familiar with the vital atoms that have a blade of grass for their broad world, and as we pursue our delightful study we daily grow more devoutly reverential in approaching Nature, and in acknowledging the illimitable wonders of that vast scheme of order which God has created, and over which God presides. *T. S. J.*

Potato Shaws, &c.—So far as I am aware nobody said that the word "shaw," referred to in the poetical quotation, had anything to do with Potato and Turnip shaws any more than "Sandy Shaw," or Mr. Dean's "Pshaw" had with the same subject. The quotation was given to show that the word had been in common use from early date, and it was expressly stated that, in the quotation referred to, the word did not apply to anything connected with Potatos or Turnips either. It was also stated, however, that the word was in common use to signify the cluster of leaves, or stems and leaves, growing on Potatos, Carrots, Turnips, and such like, and as such had been admitted by Webster into his dictionary. So that the "Man of Kent's" facetious reference to every Potato top containing a number of birds to warble welcome to the Colorado beetle when it comes rather loses its force. "Tops" as well as "shaws" is applied to more things than one—indeed to a much more heterogenous class of things than shaws; thus we have chimney-tops, tree-tops, mountain-tops, steeple-tops, house-tops, and a host of other tops too numerous to mention—not forgetting spinning-tops, Potato-tops, and Turnip-tops. Now as regards Turnip-tops, suppose I was to take a Turnip from which the cluster of leaves had been removed, and to slice off the top of the Turnip, might not that part be fairly called a Turnip-top? Suppose, further, that I had a quantity of them, might I not legitimately say I had a quantity of Turnip-tops? although there was not a vestige of a leaf among them. Shaws could not in this case be applied to these Turnip-tops, as shaws would only be applicable to the cluster of leaves growing on the top of the Turnip, and which had previously been removed. It appears to me that shaws in this instance expresses the meaning better than tops, so far as applied to the cluster of leaves growing on the tops of the bulbs or tubers. With reference to Mr. Dean's "pshaw," I think the "p" before it rather spoils its applicability. A facetious friend says "the Shah" is on his way to Paris, and will perhaps visit this country, and it occurs to him that "shah" is quite as applicable to the discussion as pshaw. *Pict.*

Harvest Moons.—I thank "X." for his handsome acknowledgment at p. 828 of your last number. He is right in saying that Francis Moore, who has been dead 150 years, states, August 23, "This is the harvest moon." I see a similar mistake in *Vox Stellarum*, 1878, where the harvest moon is said to be in August 13. I must stick by Arago, who says the harvest moon always occurs in September, and the hunter's moon in October. If he is right, as these moons are always full, the harvest moon for 1877 was September 22, and the hunter's moon October 22. For 1878 the harvest moon is September 11, and the hunter's moon October 11. *W. F. Radclyffe, June 29.*

Among the Strawberries.—As the most of us are now securing layers of this most indispensable fruit for the ensuing season, perhaps it won't be amiss if we exchange notes as to the most suitable kinds for forcing and other purposes. The sorts I have used during the past season are Keens' Seedling, Sir Harry, Dr. Hogg, and Premier, but the last-named variety I consider head and shoulders above them all both for productiveness, quality, and size of fruit (as also for continuous supply). I must, however, bear testimony to the splendid fruit I have sometimes gathered from Sir Harry, averaging 1 oz. each in weight. Keens' Seedling (a very old favourite) must go the way of Black Prince and others. It is a good bearer, but the fruit, as a rule, is deformed and ill-flavoured, and disappointing to those who have to supply the table with handsome fine-flavoured fruit. Dr. Hogg with me labours under the same disadvantage, and looks suspiciously related to that variety. In looking through the beds I find Premier truly first and foremost, followed by Sir Joseph Paxton, Sir Harry, and others, Keens' Seedling and Dr. Hogg playing second fiddle. President is a good useful variety, but under unfavourable circumstances sets badly, and consequently bears badly formed fruit. The present season was a most trying one for Strawberries in cold soils during the setting season, by noting which may prove useful in choice of kinds. Héricart de Thury (Garibaldi) I have not grown, and from certain information to hand feel in no hurry to try it. Is it true that it is most fickle and uncertain, albeit somewhat earlier than other kinds? Perhaps some successful correspondent will inform me. *J. J. B., July 1.*

Geranium pratense.—I do not think the Pelargonium pollen has had any influence on the varieties of this plant raised by Mr. P. Grieve. I have known the white and blue striped varieties ever since I was a boy, both wild and in the garden. Some years since I raised a seedling in the garden here from the typical blue bloomed plant with flowers of a delicate French grey. This plant annually gives me self-sown seedlings, about half of which are like the parent plant, and the other half typical blue. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, July 1.*

Stanhopea tigrina.—My attention has just been called to the correspondent's query in your issue for May 25, signed "T. W." I may mention that I have three fine plants planted in wire baskets (I should think wood baskets quite as good if sufficiently open). Last year my bloom was not very good, and to shelter them slightly from the strongest rays of the sun I doubled a supplement of the *Times* newspaper, bored two holes through the paper, and slung it just in front of the plants. My opinion is, this has sheltered the air-roots from too great a scorching. My plants have bloomed remarkably well this year, and are slung over the passage in the stove, which is lofty. I thing the plants require more sun than they would get under your correspondent's Muscat Vine—hence his failure. *Thomas Hughes, Wyndon, near Stafford.*

Weed Growth on Lawns.—I have had for two years past my lawn, which is in a south aspect, at times covered in patches with something like soft seaweed. You would think you were walking on snails and crushing them at each tread; it also makes the surface very slippery indeed, so that care is needed in walking on it. I send two samples in a small box. Can you inform me what it is, and how it can be eradicated or removed? *W. S. Capper.* [The specimen sent is the curious jelly-like Nostoc, aptly described by our correspondent as like soft seaweed. In some places the plant (which is an Alga) is called Falling Stars, from its sudden appearance. Dryden, speaking of the fairies, says:—

> "And lest our leap from the sky prove too far
> We slide on the back of a new falling star,
> And drop from above
> In a jelly of love."

It is possible, however, that our corespondent may not quite appreciate this lovely jelly. We can only suggest raking it off, and if it occurs on a gravel path, salting it. Probably the lawn requires draining. EDS.]

Dionæa muscipula.—On looking over an old memorandum-book I found the following entry, written in the year 1824:—"Mr. Knight, nurseryman, King's Road, found that a plant of Dionæa, upon whose leaves raw beef was laid, was much more luxuriant in its growth than others not so treated." This shows that the flesh-devouring nature of Dionæa was known in this country nearly fifty years ago. *J. Smith, Ex-Curator, Royal Gardens, Kew.* [In Kirby and Spence's *Introduction to Entomology*, as also in Darwin's *Insectivorous Plants*, the fact mentioned by Mr. Smith is alluded to, and Mr. Knight is spoken of as "a gardener," which might lead some to infer that T. A. Knight, the celebrated physiologist, was intended, but it is clear that the "gardener" was no other than Joseph Knight, the predecessor of Messrs. Veitch in the Exotic Nursery, Chelsea. EDS.]

Richardia æthiopica.—The letters you have published in reply to my question, tend, without exception, to confirm my proposition that the plant should never be allowed to go dry. Even in its natural resting season, which is now at hand, it should be supplied with water as at other times, and should in every respect be grown generously. The starving and drying to which it is often subjected result in poor growth and a paucity of flowers, and it is only when treated as hungering and thirsting, night and day, the whole year round, that we become fully aware of its remarkable capabilities. Mr. Earley's suggestion on the subject of planting out is a departure from the question. I am familiar with that practice, and could sometimes show my friend plantations that, with a little stretching, might reach from here to the Land's End. But between making stock and obtaining flowers of great size, and at the rate of two to three from every sheath from fully developed specimen plants, there is a very considerable difference. In illustration of the case I

enclose with this letter flowers cut on July 2, for my plants have not done flowering yet. You will observe that they are smallish, but still too good to be lost, as they would be if the plants were divided and planted out in May or June. The proper course with well-grown pot clumps is to treat them the same as pot Lilies—give them a shift as they go to rest, and to accomplish it with the least possible disturbance of the roots, and to avoid drying them off at any time. Richardia æthiopica is not counted among the grand plants, but if it is worth growing at all it is worth growing well, and the difference in results between the starving system that prevails and the generous system I recommend will, I think, fully justify the space the discussion of the subject has occupied in your well-filled columns. It is very odd that we should take a plant from the marshes and systematically desiccate it as part of the plan for developing its beauties. And it is still more strange that the plant should survive the operation and, after all, display a shadow of those beauties which by better treatment we might have in substance. *Shirley Hibberd.*

Reports of Societies.

Leeds Horticultural: *June 26, 27, and 28.*—To those who from their commencement have seen these Northern horticultural gatherings, and especially the one at Leeds, on the present occasion there was one extremely encouraging feature—that was, the even merits of the competing collections in the different classes, which, with very few exceptions, were highly creditable; this applies particularly to the productions of the local exhibitors, which have greatly improved from what they were during the early years of the Society's existence, showing that it has so far accomplished one object which should be the aim of the promoters of these meetings. In most of the principal classes for plants the competitors were much more numerous than generally seen, and the competing collections more than usually evenly balanced. The weather was all that could be desired, and the people came in such numbers to see the flowers that a flower show in few, if any, other county can command, for at Leeds it is a horticultural exhibition, pure and simple, without any other attractions, except good music.

In the class for twelve stove and greenhouse flowering plants (open) it was a close run between Messrs. Cole, of Manchester, and Mr. Tudgey, gr. to J. F. G. Williams, Esq., Henwick Grange, Worcester, the former getting 1st. In their collection was a good specimen of Erica venosa, one of the very finest summer flowering Heaths, and the white Ixora Colei. Mr. Tudgey's best plants were Allamanda grandiflora and Erica ferruginea superba. Mrs. Ringrose, Cottingham Grange, near Hull, was 3d, with smaller plants. For six stove and greenhouse plants in bloom (amateurs), J. Barran, Esq., Chapel-Allerton Hall, Leeds, was a good 1st, showing a neatly-grown half-dozen, in which Dipladenia amabilis and Bougainvillea glabra were both well flowered and finely coloured. Mr. Tudgey and L. Hanson, Esq., Green Mount House, Halifax, were equal 2d. The other exhibitor had a very fine Dracophyllum gracile and Statice profusa, but some of his plants were too far gone. In the class for three flowering stove and greenhouse plants W. Bateman, Esq., Weatherby, took 1st, with a large well flowered Stephanotis floribunda, Clerodendron Balfourianum, equally well done, and the singular and seldom seen Gloriosa superba; H. Oxley, Esq., Weetwood, was 2d; and J. Rhodes, Esq., Potternewtown, 3d.

The class for six ornamental foliage plants brought out a number of competitors, showing remarkably well grown plants. 1st, T. Simpson, Esq., Weetwood, Leeds; his best in a very good group being Dasylirion plumosum and Cycas revoluta, large and perfectly grown examples; Mrs. Ringrose came in 2d, and L. Hanson, Esq., 3d. Eight exotic Orchids: 1st, Mr. Mitchell, gr. to Mr. Ainsworth, Broughton, Manchester; in a fine collection he had the rare Saccolabium guttatum Holfordii, nicely flowered; Odontoglossum Pescatorei, Phalænopsis Luddemanniana, and his matchless plant of Vanda suavis, not so full of flower as we saw it at Manchester, but still bearing some good spikes; J. Barran, Esq., was 2d, his best plants being of Odontoglossum Uro-Skinneri, and O. citrosmum. Mr. Mitchell was also 1st for four Orchids, having, with others, probably the finest specimen of Aerides Schroederi in the kingdom; W. Bateman, Esq., came in 2d with a quartet in which was included a small but profusely flowered example of the darkest coloured form of Lælia purpurata. For a single Orchid Mr. Mitchell was 1st, with Phalænopsis grandiflora.

Ferns were well and numerously shown. In the class for six Messrs. Cole were 1st, having beautifully grown, healthy examples of Gleichenia Mendelii, G. rupestris, and G. Speluncæ, which may be taken as the best representative, although not the most distinct, of the most prized genus of Ferns; F. W. Tetley, Esq., Foxhill, Weetwood, 2d, the most conspicuous in whose collection were grand specimens of Cibotium Schiedei, C. princeps, and the elegant drooping Goniophlebium subauriculatum; S. Smith, Esq., Headingley, 3d; L. Hanson, Esq., and J. Rhodes, Esq., equal, extra.

Groups of plants arranged for effect have not hitherto found much favour with the promoters of the North of England shows, but have been introduced at Leeds, and very much contributed to the general effect of the exhibition. But the space—limited to 300 feet—is too much, especially for exhibitors who reside at a considerable distance from the place. There were half a dozen competitors for the prizes offered—£18, £10, £6, and £4—but most of them failed to realise exactly either the description of plants best calculated to produce the most effective display, or to arrange them to the best advantage. In all such arrangements, where the general effect produced by the whole is of much greater importance than the size, value, and cultural excellence of the individual plants of which the groups consist, it is a mistake to introduce many large plants of a character such as require formal training. This was exemplified here, as the group which only stood 2d was deservedly awarded the Silver Medal of the Royal Horticultural Society for the best grown collection of plants in the exhibition. Another mistake frequently made in arranging plants for effect is the introduction of overmuch colour by the presence of too many flowering subjects. These at least are the principles by which those are guided who carry out the decorative combinations of fine-leaved and flowering plants now so much in fashion at public and private festivities in and about the metropolis and other places. Mr. Tudgey, who was 1st, had a group nicely balanced both in form and colour, but, like all the other exhibitors, a too even surface, deficient in the relief afforded by a limited number of tall, elegant plants standing well above the others. It consisted of Palms, amongst which was the beautiful Cocos Weddelliana and the fine fan-leaved Pritchardia pacifica; tree and other Ferns, Draccenas, Crotons, Pandanus, and as many small flowering things as gave enough colour to the whole. Mr. House, Eastgate Nursery, Peterborough, was 2d, a great portion of his plants consisting of large specimens; Messrs. Cole 3d, exhibiting a fine lot of plants, the majority of which were suitable for the purpose, but not made the most of in their placing; 4th, Mrs. Ringrose, with nearly all foliage subjects, having an over sombre appearance: a few more suitable flowering examples would have placed this collection higher in the competition.

Pot Roses.—At no place in the kingdom do we see such pot Roses shown by amateurs as at Leeds and York. As a matter of course they bear no comparison to the gigantic plants shown by the trade growers who exhibit in London and occasionally elsewhere, but for moderate-sized specimens in 12 or 14-inch pots they are really fine examples of skilful cultivation, and the way they are retarded so as to keep them back thus late in the season is quite a feat in Rose growing. In the open class of twelve, J. Pybus, Esq., Monckton Moor, near Ripon, was 1st: Etienne Levet, centrifolia rosea and Richard Wallace were the best; 2d, Mr. May, Hope Nurseries, Bedale, whose plants bore a larger number of flower, but not so good in quality. Single specimen Rose in pot: 1st, Mr. May; 2d, J. Pybus, Esq.

Pelargoniums were a fine feature, filling as they did, the sloping central stage of a large tent, with a single row of tall Fuchsias down the middle. They presented a grand bank of colour, the higher shades of which were toned down by the delicate tints of the pale fancy varieties and the lighter coloured Zonals. Most of the plants staged were finely grown and equally finely flowered. For twelve show varieties, fancies excluded (open), Mr. May took a decided lead; his plants, besides being large, were well furnished with flowers and sufficient healthy foliage, and also possessed diversity of colour. Messrs. T. Lazenby & Son, York, 2d; Mr. C. Rylance, Ormskirk, 3d. Six French and spotted varieties: Mr. C. Rylance 1st, with a very good half dozen; Messrs. Lazenby 2d. Six show varieties (amateurs): 1st, W. L. Joy, Esq., Weetwood Mount, Leeds; 2d, F. W. Tetley, Esq. Six fancy Pelargoniums: equal 1st, F. W. Tetley, Esq., and Mr. H. May; 3d, Messrs. Lazenby. The Zonal kinds were splendidly done, profusely bloomed, and not too stiffly trained, with plenty of good foliage to effectually hide the supports—a condition by no means so general as it should be. For six varieties: W. L. Joy, Esq., 1st, T. Simpson, Esq., 2d.

Fuchsias were shown as they almost invariably are now seen, in moderate condition, not equal to the way in which they once were. Six varieties: 1st, F. W. Tetley, Esq.; 2d, Mr. Halliday. Three varieties: Mr. Rylance 1st, G. Talbot, Esq., Burley, 2d. Of Gloxinias some grand seedlings were exhibited by Mr. Kitson, who took the 1st prize, the flowers possessing unusual merit for size, purity of colour, and distinct marking; Mr. W. Chambers, Rotherham, 2d, with better grown plants, but the varieties not so good.

Hardy Ferns were well done, the collections not being confined too much to the everlasting Athyriums, Scolopendriums, and Lastreas, which some growers make up almost the whole of their exhibits with. Mr. C. Rylance took 1st with a fine dozen, Mrs. C. Naylor, Potternewton, being 2d, and Mrs. Ringrose 3d.

Cut Roses were better than we have seen them shown this season, Messrs. Cranston & Co., Hereford, making a clean sweep, taking 1st in the classes for forty-eight single blooms, thirty-six do., and twelve in trusses of three—Messrs. Paul & Son, the Old Nurseries, Cheshunt, 2d—both staging fine flowers, but none the better for the scorching weather. Twelve Tea varieties: 1st, Messrs. Paul; A. G. Soames, Esq., Trucham Park, Bourne, 2d; Messrs. Cranston 3d. In the amateur classes for eighteen Mr. Soames was 1st, Mrs. Halliday 2d. Twelve varieties: Mr. Soames was also 1st. Cut flowers were well shown. For six bunches, staged like Roses, Mr. Letts, gr. to the Earl of Zetland, Upleatham, was 1st. Group of flowers arranged in stand or vase: equal 1st, R. Simpson, Esq., and Mr. Kitson. Bouquets were good, both wedding and ordinary. For the former Mr. J. C. Collins, Harrowgate, was 1st with a really artistic example, suitable flowers tastefully put together, and sufficiently, but not too large.

Fruit.—Time was when the exhibitors of good fruit at these Yorkshire shows were comparatively few, now the displays are not only extensive but are contributed by a large number of individuals; and on the present occasion there was comparatively little of that inferior quality, the presence of a limited quantity of which mars the appearance of the whole. Six dishes: Mr. Bannerman, gr. to Lord Bagot, Rugeley, 1st; H. Thompson, Esq., 2d; 3d, the Marquis of Ripon. Four dishes: 1st, Mr. Letts—in his collection was a good Queen Pine and finely finished Hamburgh Grapes; Mr. Bannerman 2d, the Marquis of Ripon 3d. Six bunches of Grapes, three black and three white: 1st, Mr. A. Ferguson, gr. to B. Shaw, Esq., Selby, with Black Hamburgh and Muscat of Alexandria, the former much superior to what they are usually seen until later in the season—the Muscats also better coloured than ordinarily thus early; the bunches of both varieties were good, the berries well swelled—taking the two kinds, such as not very often shown at the same time by one exhibitor: Mr. Bannerman, 2d; H. Thompson, Esq., 2d. Single dish of black Grapes: 1st, Mr. Ferguson; 2d, H. Bentley, Esq. Single dish of white Grapes: 1st, S. Smith, Esq., Headingly, Leeds. Heaviest bunch of Grapes, any colour: 1st, Mr. Ferguson; 2d, Mrs. Noble. Pine-apple, any variety: 1st, Mr. Letts, with a nice well-grown Queen; 2d, J. B. Metcalfe, Esq., Grantham. Peaches, single dish: 1st, Marquis of Ripon; 2d, H. Bentley, Esq. Nectarines, single dish: 1st, H. Thompson, Esq.; 2d, Mr. Bannerman. Melon: 1st, Mr. Letts; 2d, Mr. Hinds, gr. to Sir Thomas Edwards-Moss, Otterspool. Figs: 1st, Mr. Bannerman; 2d, the Marquis of Ripon. Cherries: 1st, Mr. C. Rylance. Strawberries, single dish: 1st, Mr. Hinds, showing magnificent fruit, which, in addition to the prize, received a special commendation from the judges; Mr. Hinds also took 1st for Strawberries in pots.

Royal Horticultural: *July 2.* — Scientific Committee.—Sir J. D. Hooker, K.C.S.I., in the chair.

Propagation of Primulas.—A letter was read from J. Anderson-Henry, Esq., stating that, as difficulty was sometimes experienced in propagating certain species of Primula, the method of increasing these plants which he had discovered by accident might be of interest. Mr. Henry stated that he received seeds of P. denticulata and others from Kashmir. The young plants were placed in beds and subsequently dug up to make room for other things. The plants were subsequently replanted, and shortly it was observed that numerous offsets were formed—so numerous indeed that the plants came up like weeds. Mr. Henry also alluded to some curious experiments in hybridisation, the result of which will be made known when the experiments have progressed further.

Tea Disease in Sikkim.—Leaves of the Tea plant affected with some insect were sent from Darjiling—where the prospects of the crop are seriously injured—through Mr. Caird, C.B., with a request for information. The specimens were referred to Mr. McLachlan for investigation and report.

Diseases of the Vine.—Dr. M. C. Cooke read a fifth communication on Vine diseases, which was confined to the two kinds of disease recently detected in France, and described by Dr. Maxime Cornu in the *Bulletin de la Société Botanique de France.* The first, termed Anthracnose, or canker, caused scorched spots on the stems and leaves, as well as the Grapes, and is attributed to Phoma uvicola (B. & C.), a North American fungus. The second, not uncommon at Montpellier and Cognac, a brown mould chiefly confined to the under surface of the leaves, was referred to Cladosporium viticolum (Ces.), a fungus with no less than five names, known in the United States as Graphium clavisporum (B. & C.). Dr. Cooke was of

opinion that the scorched spots in the disease called Anthracnose were not sufficiently accounted for by the presence of the Phoma, but that a more complete investigation of the disease in a fresh condition would show that the canker of the stem is independent of the Phoma. If correctly determined as Phoma uvicola (B. & C.), no such appearances are found associated with that species in the United States, where it was originally discovered.

Acer Schwedleri.—Dr. Masters showed leaves of this, commenting on its beauty as an ornamental tree, and pointing out the singular inclination of the petiole to the blade of the leaf.

Flints and Lichens.—Mr. W. G. Smith exhibited a series of worked implements and flakes of flint from the Sussex Downs. In every instance where the original crust of the flint had been left untouched there was on that spot a growth of lichens, principally Lecanora pallida, but wherever a flake had been struck off by the pre-historic makers the worked face and the detached flake were alike perfectly plain or only showed rudimentary vegetation. Mr. Smith said that in damp situations under trees, or when flints were embedded in abundant mortar, the lichens might temporarily creep over a worked surface, but they could not maintain their position or perfect themselves as they invariably did on the old natural crust. To show the almost indestructible character of flint Mr. Smith exhibited a Palæolithic celt from the drift gravel, which showed a large thick snowy-white patch of the original crust on the butt-end just as it was left ages ago by the maker, the worked portion of the flint showing its original black colour where no decomposition whatever had place.

Hybrid Lilies.—Mr. G. F. Wilson showed on behalf of Mr. Mangles, of Haslemere, a noble Lily, like croceum in general aspect—the anthers were quite barren; also a supposed hybrid variety of L. philadelphicum or of pulchellum, from Messrs. Veitch. Two varieties of L. pardalinum were shown, var. Robinsoni with large flowers, and var. californicum with small flowers somewhat glaucous in the centre.

Floral Committee.—Dr. Denny in the chair. First-class Certificates were awarded to Mr. Turner, Slough, for two English-raised H.P. Roses, named respectively Dr. Sewell and Penelope Mayo. The former is a well-built flower, with fine broad petals, of an intense crimson colour, shaded with maroon; the latter large, of beautiful form, and of a full rosy cerise colour. Three blooms of each were staged, those of Penelope Mayo being the finest we have yet seen, and being a distinct flower—if it is possible for a new Rose to be distinct—is certain to take a high position on the exhibition table. Messrs. William Paul & Son, Waltham Cross, also showed several fine English seedlings, including May Quennell and the Duchess of Bedford, to the latter of which a First-class Certificate was awarded. The Duchess is in all respects a grand new H.P., deep, well built, with broad petals of good substance, and withal a novelty in colour—very bright reddish crimson, or cherry is the nearest we can get to it, so difficult is it to describe the exact shade. Messrs. Paul & Son, the Old Nurseries, Cheshunt, also exhibited some new varieties, which like the before-mentioned have the merit of being home raised. Of these Charles Darwin, Duke of Teck, and Countess of Darnley are very promising, but were not at their best to-day. From the New Plant and Bulb Company, Colchester, came Freesia refracta var. alba, a charming little bulbous plant with white yellow-blotched flowers larger in size than the yellow blossoms of F. refracta; and to which a First-class Certificate was awarded. A similar award was also made to M. V. Lemoine, 67, Rue de l'Etang, Nancy, for Ivy-leaved Pelargoniums Elfrida, in the style of König Albert, but larger and of a deeper colour; and Lucy Lemoine, a beautiful double flesh-tinted pink. From Mr. J. R. Pearson, Chilwell, came four seedlings from Pelargonium echinatum, named Pixie, Hybridum, Ariel and Beauty—free flowering and neat growing plants with colours of the softest and loveliest description. Ariel and Beauty are a decided advance upon anything that has been seen before from the same breed, and deserved something more than the commendation bestowed on them. Mr. G. Smith, of the Tollington Road Nursery, showed several examples of a dwarf strain of single and double Petunias, which the committee commended. From Mr. Cannell, Swanley, came half-a-dozen stands of cut blooms of Verbenas, with trusses of fine size, of all the best old and new varieties—a grand lot of flowers. G. F. Wilson, Esq., contributed cut flowers of Lilium Krameri from small bulbs, and showing different shades of colour, also of Lilium pardalinum, L. pardalinum Robinsoni, and L. californicum. Messrs. James Carter & Co. sent their fine new Eschscholtzia crocea Mandarin; Messrs. John Laing & Co., a new and very distinct erect flowering Gloxinia named Papillon, the flowers of which are white, densely and minutely spotted. From Messrs. James Veitch & Sons came the brown and yellow-flowered Oncidium prætextum, and a small variety of Lilium philadelphicum; and Mr. William Caldwell, The Ivies, Wantage, sent a nice lot of cut blooms of Sweet Williams. The fine yellow Œnothera Youngii and the curious Umbilicus sempervirens were shown by Mr. Parker, and cut blooms of Spiræa palmata, the Rose Queen of Bedders, and a new seedling in the same way came from Mr. Noble. MM. Chantrier frères, Mortefontaine, Oise, sent a tall plant of Croton Baron James de Rothschild, a large-leaved form, green with yellow venation, and crimson coloured midribs. In addition to the Freesia above mentioned the New Plant and Bulb Company also sent cut flowers of several other interesting plants, including the pretty Calochortus macrocarpus, C. luteus, and C. venustus, Lilium Hansoni, L. Brownii, L. parvum, L. dalmaticum, L. Thunbergianum var. Horsmanni, deep blood-red in colour, and L. japonicum Colchesterii, creamy white, and not very striking. Mr. Heims, gr. to F. A. Philbrick, Esq., Q.C., received a Cultural Commendation for a well-grown plant of Cattleya gigas, with a dozen fine blooms. F. A. Pache, Esq., Brighton Road, Birmingham, sent specimens of Pelargonium Golden Jewel, which may be described as a Cloth of Gold with very double dark scarlet flowers. Mr. R. Dean showed cut flowers of his strain of Sweet William, and from Chiswick came a large collection of cut blooms of varieties of Dianthus Heddewigii.

Fruit Committee.—H. Webb, Esq., in the chair. Seedling Melons were the leading feature of the meeting to-day, but only two varieties proved to be of any importance, and these were so good as to merit the award of First-class Certificates, which were accordingly voted. The first one came from Mr. Gilbert, gr. to the Marquis of Exeter, Burghley, and was named "The Netted Victory." It is a thick white-fleshed, round, and fine-flavoured fruit, with the netting very strongly pronounced. The other came from Mr. Dell, gr. to C. Turner, Esq., Stoke Rochford, Grantham, and was named Dell's Hybrid. It is a round green-fleshed variety, moderately netted, of most excellent flavour, and, as we can testify, of a good hardy constitution. Mr. Gilbert also sent a scarlet-fleshed Melon, named Lord Mayor, an excellent flavoured variety, but too thick in the rind to warrant the award of a certificate. A pale green-fleshed variety named John Chapman came from Mr. William Chapman, gr. to the Marquis of Anglesey, West Park, Salisbury; and Mann's Hybrid, a smooth, oval-shaped, green-fleshed fruit, was sent by Mr. Mann, gr. to Mrs. Hornsby, St. Vincent's, Grantham; but both were failures as regards flavour. From Mr. John Monro, Potter's Bar, came a dozen examples of a seedling variety called Monro's Bismarck, a medium sized ribbed and green-fleshed variety, of fairly good flavour; and two fruits of another seedling named Marquis of Salisbury, a larger fruit than the first-named, smooth skinned, and with a pale scarlet flesh, of very inferior quality. From Mr. Mann also came a dish of Elruge Nectarines, heavy and well coloured, for which the exhibitor was thanked. Mr. Gilbert also sent samples of two seedling Peas, named Marvel and The Baron. The first has straight and well filled pods of good flavoured Peas—a promising variety; the pods of The Baron are very large, somewhat curved, and of a deep green colour, but when opened contained nothing that could be eaten! You sent them too soon, Mr. Gilbert. Another seedling Pea, named Sequel, came from Mr. Hardy, of the Stour Valley Seed Grounds, Bures, evidently a heavy cropping variety of medium height; and from Mr. Turner, Slough, came a nice sample of the Early Bird Kidney, which gained a Certificate at the last Potato show at the Westminster Aquarium.

Rochester Horticultural: *June* 25.—The second annual exhibition took place on the above date, in the grounds attached to the residence of H. Nicholson, Esq., a place which has one of the old-fashioned flower gardens it is so pleasant to look upon, and where one meets with many old friends of a somewhat scarce character. A very fine example of the Purple Beech, with ample spreading branches and grandly-coloured leaves was a fine feature in the centre of the lawn. Rochester is not a plant-growing district, that is quite certain from what could be seen at the show, unless the plant growers decline to compete for the small prizes offered in the schedule. But newly-formed societies deserve some consideration at the hands of nurserymen and gardeners, for they are often but struggling corporations, and find it difficult to pay their way, and therefore it is wise not to offer prizes beyond the financial means at command.

The principal prize for plants was that of the Members' Cup, value £5, arranged for effect in a space equal to 80 square feet. This was won by Mr. Lawrence, nurseryman, Rochester, with small but nicely-grown and arranged plants. The other competing groups had larger plants of a more valuable character, but they were badly arranged, and the general effect was *nil*. There were collections of stove and greenhouse plants, foliage plants, Caladiums, exotic and British Ferns, Pelargoniums, &c., but the system adopted in Rochester of keeping the exhibitors' names from the plants prevented the gleaning of any particulars. The Tricolor Pelargoniums were nicely grown, being much superior to anything that appeared at the Pelargonium Society's show at South Kensington a short time since. In the classes for vegetables and fruit, Mr. Dewsbury, gr. to the Earl of Darnley, Cobham Park, was the principal exhibitor. The collection of six dishes of fruit with which Mr. Dewsbury gained the 1st prize consisted of Black Hamburgh and Foster's Seedling Grapes, Peaches, Nectarines, Pine and Strawberries. Generally, fruit was fairly represented, and vegetables were both numerous and fine. The leading cut flowers were Roses, and these were well shown by local amateur growers. There were table decorations and bouquets, and the other incidentals to this department of an exhibition.

Maidstone Horticultural: *June* 26.—The spring show, as it is termed, of the above Society, took place in the Corn Exchange on the above date. In the reduced circumstances of the Society the committee wisely determined to limit their outlay according to their resources; and if the members missed the usual tents, and the pleasant shade of trees, there was real compensation in the cool pleasant atmosphere of the Corn Exchange, which was certainly preferable to the close atmosphere of the tents. In the plant department, stove and greenhouse plants were rather poor, though the prizes were good enough to have attracted something better. The best groups of eight fine-foliaged plants, competing for the High Sheriff's special prize, came from G. A. Dodd, Esq., the leading examples being Dæmonorops fissus, Pandanus Vetchii, Draceena Shepherdi, and Kentia Canterburyana. Major Best was 2d. In the centre of the concert-hall, in which the fruit was set forth, was a tastefully arranged group of plants, contributed by H. A. Campbell-Bannerman, Esq., M.P. The best specimen plants were Clerodendron Balfourianum, from L. D. Wigan, Esq.; Bougainvillea glabra and Rhynchospermum jasminoides dividing the honours for 2d place—these came from G. O. Dodd, Esq. and Mrs. Whatman. Other plants comprised Coleus, Fuchsias, Pelargoniums, and Heaths; and, while they did not call for special notice, were very useful in making an effective display. In the best six Fuchsias, from J. W. Braddick, Esq., was a well-grown plant of Wave of Life, nicely coloured and flowered. The best six Ferns came from Major East, and included Adiantum farleyense, Cibotium princeps, and Davallia Mooreana. The best group of hardy Ferns came from Mrs. Whatman.

The Roses were decidedly the leading feature in the cut flower classes, and the possession of the High Sheriff's prize was warmly competed for by F. Warde, Esq., and J. Hollingworth, Esq., the fiat being given in favour of the former. In point of merit the flowers were evenly balanced, but in the matters of arrangement, evenness, balance of colour, variety, and general getting up, Mr. Warde had the advantage. His best blooms were Mons. Noman, Star of Waltham, Louis Van Houtte, very fine; Maréchal Niel, Marie Cointet, Thomas Mills, La France, Countess of Oxford, Madame Hyppolite Jamain, John Hopper, Royal Standard, and Madame Lacharme. In Mr. Hollingworth's box the best flowers were Marie Rady, Duchesse de Vallombrosa, Marie Baumann, Captain Christy, La France, Victor Verdier, Mr. Baker, and Xavier Olibo. L. A. Killick, Esq., had the best twelve Roses, and J. Smythe, Esq., the 2d best. In the class for twelve Tea Roses J. Hollingworth was 1st with some charming flowers, L. A Killick, Esq., being 2d. Hardy flowers in twelve bunches were very good, and in the class for a basket of cut flowers some large and well arranged exhibits were staged; the Misses Jones were 1st and Mr. Pearce 2d. The best bouquet came from F. Pine, Esq. Wild flowers were a good feature—Mrs. Cutbush being 1st and L. A. Killick, Esq., 2d.

The best collection of six dishes of fruit came from G. A. Dodd, Esq., and consisted of black and white Grapes, Strawberries, Cherries, and two Melons. The best black Grapes were Black Hamburghs, from R. Leigh, Esq.; G. A. Dodd, Esq., being 2d. The best white Grapes were Muscat of Alexandria, from G. A Dodd, Esq. Captain Brenchley was 1st with Peaches, having Royal George—R. Leigh, Esq., being 2d with Early York. Strawberries were very good, the leading sorts Sir C. Napier, Sir J. Paxton, Dr. Hogg, Randall's Seedling, and Trollope's Victoria. Gooseberries and Currants were somewhat unripe, and Raspberries very good.

Vegetables were numerous and very good. The leading prize was for a basket unlimited as to the number of varieties, the Misses Jones being 1st and J. Whatman, Esq., 2d, with excellent lots. Collections of herbs were very good also, and in the class for Longpod Beans were some capital examples of the Seville Longpod. The best kidney Potatos were Myatt's Ashleaf and Jackson's Kidney; the best round Potatos Porter's Excelsior and Coldstream. Peas were fine, but for the best part unnamed. The non-appearance of the names of gardeners in this

report is attributable to the fact that they appear to be quite ignored at Maidstone shows. This is unusual, and scarcely defensible.

Richmond Horticultural: *June 27.*—If weather of unusual brilliance and at almost tropical heat, allied to active Royal patronage, could, combined, promote success, certainly the show held in the Old Deer Park on Thursday of last week was doubly blessed. But these things were but a portion of the advantages enjoyed by the energetic committee on this occasion, as added to a long and liberal prize-list there were entries *ad libitum*, specimens of first-class quality, and, not least, the support of many of the leading London trade firms, all of whom seem to understand the nature of the Richmond attendance, and the wealthy and appreciative people of which it is composed. The tent-space erected was of great extent—one immense tent for the chief plant classes, a second for the special prizes, a third for table decorations and cut flowers, a fourth for fruit and vegetables, and a fifth for cottagers, and some extra classes. The centre of attraction was of course the large plant tent, which was filled to repletion with collections of great variety and interest. The centre was occupied by a double stage, on which were placed stove and greenhouse and ornamental foliage plants; Ferns, both exotic and hardy, Caladiums, Fuchsias, Pelargoniums, and numerous other plants in season; whilst the extremities were filled with choice collections from the nurseries of Messrs. Veitch & Sons, Chelsea, and Mr. B. S. Williams, of Holloway; and around the sides were placed many fine semicircular groups of decorative plants in competition and otherwise; and, not least, at either end next the entrances superb groups of pot Roses, sent by Messrs. Veitch & Sons, and Messrs. Paul & Sons, of Cheshunt. These were all dwarf young plants of the choicest sorts, and were immensely admired by the visitors. The groups arranged for effect are here invariably a telling feature, and in the competition the 1st prize was awarded to Mr. F. R. Kinghorn, the Sheen Nurseries, Richmond, for a very effective arrangement—Messrs. Hooper & Co. being placed 2d for a handsome lot of plants from their Twickenham nursery; and Mr. Powell, gr. to Sir H. W. Parker, of Richmond, 3d. Fine and effective groups were staged, not for competition, by Messrs. Osborn, Fulham; Rollisson, Tooting; and Jackson, of Kingston, to all of whom medals were awarded; and an extra prize was also given to Mr. Brown, florist, of Richmond, for a good group. In the stove and greenhouse plant classes Messrs. Jackson & Son, of Kingston, were strong exhibitors, having in the class for nine plants some very good specimens of standard exhibition kinds. The 2d prize lot, shown by Mr. Hinnell, gr. to F. A. Davis, Esq., Surbiton, was a most meritorious collection, and displayed first-class cultivation, wanting size only.

Fuchsias were well grown but had suffered from the great heat, but the show Pelargoniums looked very bright and fresh—Mr. James, of Redlees, Isleworth, being 1st in the various classes with good specimens; Mr. Livesley, of Spring Grove, taking 2d place with small but well-flowered plants. To particularise all the plant classes would be impossible, as those offered by the Society and by special donors made the number legion, and it was truly wonderful that in the midst of the great heat the judges got so well through the work cut out for them. Such powers of endurance deserve a special note of approbation. The special prize tent was occupied chiefly with plants, some of the things being good, but many were hardly worthy the encouragement given to their cultivation. A reduction in the number of these specials, and the addition of the sums given for them to more suitable plant classes, or for the production of high-class fruits, would serve to enhance the character of the exhibition.

The table decorations consisted largely of centre-pieces of glass, dressed as most *habitués* at London flower shows are familiar with, some with elegance and taste, others with heaviness and a lack of taste. There was a large competition in these classes, local ladies being competitors, and the tables set apart were entirely filled. Cut Roses were shown largely and well, although the great heat kept some of the trade exhibitors from competing in the open classes. For thirty-six kinds, three trusses each, Messrs. Paul & Sons, of Cheshunt, were a good 1st and only competitor; and in the class for twenty-four kinds, the same firm were placed 1st; Mr. William Rumsey, of Waltham Cross, 2d. Mr. Rumsey also staged a large box of Tea Roses. From Messrs. Veitch & Sons came boxes of cut Roses, and of the red-flowered Spiræa palmata; from Mr. Charles Turner, Slough, several boxes of Roses, Carnations, Picotees, Pelargoniums, Verbenas, &c.; Messrs. Lee & Sons sent from their Ealing Nursery some fine boxes of Roses, and one of twenty-four blooms of La France, which were remarkably fine. Some flowers from this collection of Xavier Olibo, Louis Van Houtte, and others of darker hue, specially admired by the Princess Mary, were presented to her in the evening, at her request.

The cut Rose classes, open only to the district and to amateurs, were well filled, the display of these and other cut flowers being a marked feature of the show. Fruit was well and largely shown, there being several classes for both black and white Grapes; but in many cases the colour was not all that could be desired. Mr. Punchard of Twickenham was the most successful exhibitor in these classes, and in the open class for four dishes of fruit Mr. Edwards, gr. to J. S. Budgett, Esq., of Ealing Park, was 1st, with good black Grapes, fine Peaches, and Nectarines, and Pine; Mr. Cornhill, gr. to J. S. Virtue, Esq., of Weybridge, coming 2d with similar fruits. Vegetables were good, and largely shown, the collections in baskets being a capital feature. In the cottagers' tent Mr. Marcham, of Spring Grove, staged a fine bank of striped Petunias that were greatly admired. The entire show was a most marked success, thanks to the energy displayed by Mr. A. Chancellor, the active honorary secretary, and the support of a strong committee, whilst the arrangement of all the varied exhibits was in the hands of Mr. R. Dean, of Ealing, and were such as to give the greatest satisfaction.

Romford and Essex Horticultural: *June 27.* The annual exhibition of this Society was held on Thursday, June 27, in the grounds of C. P. Matthews, Esq., The Bower, Havering. The show on this occasion was not quite up to its original dimensions, although the quality of the plants exhibited was quite as good as usual. Exhibitors who enter plants and who have places kept for them up to the last moment are guilty of a grave offence if they do not put in an appearance at all. The Romford committee were put to considerable inconvenience by defaulters of this kind; for instance, there were four entries in one class for flowering plants, but only two came forward to compete for the prizes. It was in the classes for flowering plants that the greatest falling off was discernible. Besides the defaulters already alluded to, the weather had been hot, and many plants expected to be in were quite past their best. 1st prizes for stove and greenhouse plants were awarded to Mr. Lane, gr. to Major-General Fytche, of Pyrgo Park, Romford, and to Mr. Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford. Mr. Lane had Erica tricolor coronata, E. ventricosa grandiflora, and Phœocoma prolifera Barnesii very fine indeed. Mr. Douglas had a well flowered plant of Statice profusa and a nice specimen of Anthurium Scherzerianum.

In foliage plants Mr. Douglas had the best, amongst them a well-coloured Croton Weismanni, the best of all for exhibition purposes. Mr. Douglas likewise had the best Ferns, amongst them Todea superba and T. pellucida. Mr. Noodhams, gr. at "The Bower" had some well grown specimens in his 2d prize collection of the commoner sorts, especially of that excellent sort for large baskets, Nephrolepis exaltata. Stage and fancy Pelargoniums were well exhibited by Mr. Bone, gr. to D. M'Intosh, Esq., Havering, and Mr. Lane, Messrs. Meadmore, nurserymen, Romford, and Mr. Soder, gr. to C. Hanbury, Esq., Weald Hall, Brentwood, had very good double zonal Pelargoniums—the double variety of Wonderful fine indeed. J. H. Pemberton, the Round House, Romford, had excellent Roses, his 1st prize collection containing all the best sorts. Messrs. William Paul & Son, of Waltham Cross, showed a collection of many varieties, all good, which was highly commended.

There were very good collections of cut flowers, but the hot weather was very trying to them, especially to one collection of Pansies, the owner of which did not provide tubes of water for it, and they were quite shrivelled up. Mr. Douglas gained the 1st prizes in all the classes, and Mr. Lane also showed good flowers. Fruit was well shown, 1st prizes being awarded to Mr. Bone for a good collection; to Mr. Douglas for Muscat Grapes, and for distinct varieties of Grapes; and to Mr. Farrance, market grower, of Chadwell Heath, for Black Hamburgh. Mr. Bone had excellent Peaches. Strawberries were very fine, and abundantly shown: Mr. Smith, market grower, Romford, had the best collection, and Mr. Meadmore the best dish (a very fine one) of British Queen. James Veitch, President, Auguste Nicaise, and Dr. Hogg, were fine and large in the collections. Mr. Douglas had the best black and white Cherries—Knight's Early Black and Elton.

Vegetables, as usual, were very good, and upheld thecredit of the county. The best basket (a very good one), containing eight varieties, was from Mr. Iggulden, gr. to R. B. Wingfield Baker, Esq., Romford; it contained excellent Culverwell's Telegraph Pea, Seville Longpod Beans, and a very fine dish of Kidney Potatos. Mr. Douglas had the best brace of Cucumbers, the variety Tender and True. Other single dishes of vegetables were shown in abundance by gardeners, amateurs, and cottagers. Prizes were also given by Mrs. McIntosh for specimens of needlework by children, and the little ones of four and six years came in for awards and commendations.

The National Rose Society's Exhibition at the Crystal Palace: *June 29.*—The newly formed National Rose Society, which held its first exhibition last year at St. James' Hall, this year changed its quarters to the Crystal Palace. Last year the Roses were abundant, the visitors scarce; at the second venture these conditions were somewhat reversed, the show on Saturday being not so extensive or so good all round, but the visitors—well, as "thick as leaves in Vallombrosa." The cold and unfavourable spring, with late frosts, spoilt the chances of many growers, and notably of such doughty champions as Mr. Turner and Messrs. Paul & Sons, of Cheshunt, who, we regret to say, will, from the latter cause, not have a good cut this season; while the bleaching weather of the previous week effectually settled some others. There was, however, a great competition in some of the classes, notwithstanding these drawbacks, and, as a general rule, the flowers were of fine quality. Especially was this the case in the nurserymen's and a few of the amateurs' classes, and most notably of all as regards the Hereford contributions, which were cut late overnight, and brought up to town by a special train!—with what result will be seen below. Yet, though the show was a good one and held under the auspices of a society boasting the title of "National," it was not so good as many Rose shows that we have seen at the same place, and probably no better than we should have seen there this season had the Crystal Palace Company held the show on its own account, instead of subsidising the "National;" and further, we are quite certain that had the Palace Company held the show on its own account we should not have heard a tithe of the grumbling and dissatisfaction with the management that came to our ears on Saturday last. Much of this would have been obviated had the leading spirits of the movement displayed a little less fussiness and a little more business capacity.

As every one knows who has had any experience of the Palace Rose shows, there are none more difficult to report on, so thick is the crowd of sightseers who swarm in front of the boxes immediately the judges have completed their labours, yet no arrangement whatever had been made for the admission of reporters until the crowd went in at 12 o'clock, and they had to get in as best they could after much marching outside the Palace premises. Handsome treatment this from a "National" Society, whose very existence depends in no small degree upon the support accorded to it by the Press. This was only one of the blots on the management; we could fill a column about them, so great was the muddle, but will content ourselves with one or two others, and then proceed with a more pleasant subject. The first we have to note is, that exhibitors who did not choose to pay 5*s.* for re-admission had to stay in the Palace from the time they took their boxes in in the morning until they removed them at night; another complaint came from some of the subscribers to the Society who did not receive tickets of admission—an arrangement which bore specially hard on one gentleman, who, besides being a subscriber of two guineas, was the donor of a special prize of five guineas, and who only got in before the general public to see the result of his generosity after much worry and annoyance at the turnstiles. There must be a change if the National Society is to live much longer; it cannot go on in this way.

Nurserymen's Classes.—The six classes confined to nurserymen brought a fine lot of blooms, the bleaching weather of the previous week notwithstanding. For the four prizes offered for seventy-two's there were five competitors, and Messrs. Cranston & Co., Hereford, had no difficulty in securing the highest award, so uniformly good were their flowers in size, colour, and freshness. Amongst the best represented flowers we noted Marie Rady, Etienne Levet, Duc de Montpensier, Beauty of Waltham, Reynolds Hole, Madame Vidot, Baron Hausmann, Abel Carrière, Belle Lyonnaise, Madame Nachbury, Countess of Oxford, Antoine Ducher, Madame C. Crapelet, Marie Baumann, Madame Lacharme, Madame Eugénie Verdier, Horace Vernet, Auguste Rigotard, Nardy Frères, Le Havre, Madame C. Wood, and Mons. E. Y. Teas. Mr. B. R. Cant, of Colchester, came in 2d with a nice fresh lot, but not of the size of the Hereford flowers. However, he had very pleasing blooms of Pitord, Le Havre, Madame de Caylus, Duc de Wellington, François Michelon, Countess of Oxford, Charles Lefebvre, Souvenir d'Elise, Beauty of Waltham, Star of Waltham, a lovely bloom; Xavier Olibo, grand in colour; Madame Prosper Langier, Antoine Ducher, Madame Victor Verdier. Messrs. Paul & Son, The Old Nurseries, Cheshunt, were 3d, and Messrs. Keynes & Co., Salisbury, 4th; the unsuccessful exhibitors being Messrs. J. Mitchell & Sons, of the Piltdown Nurseries, Uckfield. Messrs. Cranston & Co. again come to the front with forty-eight trebles, showing splendid specimens, amongst others, of Lord Macaulay, Paul Néron, Annie Laxton, Madame Hippolyte Jamain, Madame C. Wood, Niphetos, Mons. E. Y. Teas, Fisher Holmes, Mons. Woolfield, Marie Baumann, Le Havre, and Le Duc de Morny, &c. Messrs. Keynes & Co. were a good 2d here, and

Messrs. Paul & Son 3d again, the 4th going to Mr. Cant. Mr. Turner, who could not show in either of the preceding classes, came out strong in that for thirty-six singles, and took the lead amongst the nine competitors, his finest flowers being of Ferdinand de Lesseps, Madame Jules Margottin, Horace Vernet, Xavier Olibo, Camille Bernardin, Souvenir d'Elise Vardon, Devoniensis, Star of Waltham, Madame George Paul, Niphetos, Penelope Mayo, and Marguerite Brassac. The 2d prize went to Messrs. Curtis, Sandford & Co., of Torquay; the 3d to Mr. Prince, Market Street, Oxford; and the 4th to Messrs. Kinmont & Kidd, Canterbury. With twenty-four trebles Mr. Cant stood in amongst the winners of 1st prizes in a very strongly contested class, showing a capital lot, including La Boule d'Or, Baronne de Rothschild, Mdme. Cointet, Reynolds Hole, Antoine Ducher, Souvenir d'Elise, Xavier Olibo, and Charles Lefebvre, &c. Messrs. Keynes & Co. also came in 2d here, Messrs. Cranston & Co. getting no nearer than 3d, and Messrs. Paul & Son 4th. A strong muster of competitors also appeared in the class for twenty-four singles, and here again Mr. Turner came out 1st followed by Messrs. Curtis, Sandford & Co., Mr. Henry Frettingham, Beeston Nurseries, Nottingham, and Mr. G. Prince, of Oxford, in the order named. With twelve Teas or Noisettes, Messrs. Mitchell & Sons took the 1st prize—as they have done before—with admirable specimens of Devoniensis, Duc de Magenta, Madame Margottin, Souvenir d'Elise Vardon, Madame Céline Nairey, Catherine Mermet, Maréchal Niel, Souvenir d'un Ami, Niphetos, &c. Mr. B. R. Cant was 2d, and Messrs. Paul & Son 3d.

THE AMATEUR'S CLASSES were quite up to the average, and as regards the competition for the Challenge Cup, won last year by J. Jowett, Esq., The Old Weir, Hereford, was especially good. Had Mr. Jowett won the prize this time it would have become his own; but though he showed in grand form, he was beaten very closely by R. N. G. Baker, Esq., Heavitree, Devon, and these two will next year have to compete between themselves for its possession. Mr. Baker had amongst others splendid blooms of Jean Liabaud, Mdlle. Marie Rady, Centifolia rosea, Marie Baumann, Madame Charles Wood, Xavier Olibo, Marquise de Castellane, Comtesse d'Oxford, Baronne de Rothschild, Camille Bernardin, Sir Garnet Wolseley, Abel Carrière, Mons. Noman, Charles Lefebvre, Ferdinand de Lesseps, Madame Caroline Kuster, Alfred Colomb, Marguérite de St. Amand, Mons. E. Y. Teas, Etienne Levet, François Michelon, Duke of Connaught, Madame Prosper Langier, Duc de Wellington, Mdlle. Eugénie Verdier, Magna Charta, Auguste Rigotard, Royal Standard, and Sultan of Zanzibar. Mr. Jowett's best examples were of Duke of Edinburgh, Xavier Olibo, Captain Christy, Alfred Colomb, Charles Lefebvre, Madame Nachury, Duc de Wellington, Marie Baumann, Marguérite de St. Amand, Horace Vernet, François Michelon, Madame Marie Finger, Le Havre, Prince Camille de Rohan, Beauty of Waltham, Reynolds Hole, Docteur Andry, Devoniensis, Abel Grand, Belle Lyonnaise, Mons. E. Y. Teas, Mdlle. Marie Cointet, Hippolyte Jamain, Marie Van Houtte, Cheshunt Hybrid, Maréchal Niel. The Rev. Canon Hole, Caunton Manor, Newark, was 3d; Mr. W. Nichol, gr. to H. Powell, Esq., Drinkstone Park, Bury St. Edmunds, 4th. There were seven competitors. In the class for thirty-six single trusses, also a good one, Mr. Brown, gr. to A. J. Waterlow, Esq., Great Dood's, Reigate, came in 1st; Mr. Baker 2d; Mr. J. L. Curtis, Chatteris, 3d; and Mr. J. Hollingworth, Turkey Mills, Maidstone, 4th. In the twenty-fours there were the same number of competitors, and there the highest honour fell to the lot of Mr. H. Atkinson, Marley, Brentwood, Mr. Jowett coming in 2d; Mr. John Sargent, Reigate, 3d; Mr. J. H. Pemberton, Havering-atte-Bower, Romford, 4th; Mr. Burnaby Atkins, Halstead Place, Sevenoaks, 5th; and Mr. J. Edwards, Stistead Rectory, Braintree, 6th: a large and excellent class. The four prizes in the next competition, which was with twelve varieties, three trusses of each, went in the following order—to Mr. Baker, Mr. Hollingworth, Mr. Ridout, and Mr. J. C. Quennell, Brentwood; while in a strongly contested class for twelve single trusses equal 1st prizes were awarded to Captain Christy, Buckhurst Lodge, Westerham, and Mr. A. G. Soames, Trueham Park, Bourne—the other five awards being taken by Mr. Pearce, gr. to Prof. Adams, of Cambridge; Mr. Lakin, Chipping Norton; the Rev. Allan Cheales; Mr. Evans, Marston; and Mr. John Wakeley, Rainham.

The best six single trusses were contributed by Captain Christy; and the best six suburban grown Roses in a poor class went to Mr. Scott, the Treasurer of the Society. For twelve Teas or Noisettes, Mr. J. Brown was 1st; Mr. W. Smith, gr. to Mrs. Round, Birch Hall, Colchester, 2d; Mr. W. Nichol, 3d; and Mr. John Pearce, 4th.

THE OPEN CLASSES were twelve in number, and productive of much variety. For a dozen new Roses, not in commerce previous to 1875, the 1st prize went to Messrs. Paul & Son, Mr. Turner, and Messrs. Curtis, Sandford & Co., in the order named. The varieties shown by Messrs. Paul & Son were Marie Baumann, Duchesse de Vallombrosa, Sultan of Zanzibar, Rev. J. B. M. Camm, Jean Soupert, a very dark red; Emily Laxton, Duke of Connaught, Marchioness of Exeter, Star of Waltham, Madame Devert, and Magna Charta. Mr. Turner had Richard Laxton, Madame Devert, Prince Arthur, Oxonian, Marguerite Brassac—a beauty, Duchesse de Vallombrosa, John Stuart Mill, Penelope Mayo, Henry Bennett, Rev. J. B. M. Camm, Duke of Connaught, and Royal Standard. The five classes for a dozen blooms each of specially named varieties were not so well contested as usual, and the 3d prize in every case was withheld. The following are the awards:—Etiénne Levet: Messrs. Paul & Son, 1st; Messrs. Keynes & Co., 2d. François Michelon: Messrs. Keynes & Co., 1st; Mr. G. Cooling, Bath, 2d. Jean Liabaud: Messrs. Cranston & Co., 1st; Messrs. Paul & Son, 2d. Maréchal Niel: Mr. Turner, 1st; Mr. Cooling, 2d. Marguérite de St. Amand: Messrs. Paul & Son, 1st, and Messrs. Keynes & Co., 2d. There were fourteen competitors in the class for any dark variety not named above, and Messrs. Curtis, Sandford & Co., came in 1st with a splendid stand of Marie Baumann; Mr. B. R. Cant with Horace Vernet, remarkably fine; and Messrs. John Laing & Co., 3d, with Marie Baumann again. Amongst the other varieties represented were Alfred Colomb, Countess of Oxford, Penelope Mayo, Rev. J. B. Camm, Mons. Noman, Mons. E. Y. Teas, Mdlle. Marie Rady, Sir Garnet Wolseley, and Madame Victor Verdier. In the corresponding class for eight varieties there was one more competitor than in the preceding one. Messrs. Paul & Son showed Captain Christy and Duchesse de Vallombrosa, and took the 1st prize, but with which one we cannot say for certain, though we should think with Captain Christy. Mr. J. Ridout, gr. to J. B. Hayward, Esq., Wood Hatch Lodge, Reigate, was 2d with Baroness Rothschild, and Messrs. Cranston & Co. 3d with Madame Lacharme. La France, Miss Hassard, and Marie Cointet were amongst the unsuccessful ones. For twelve of any Tea or Noisette not named above Mr. Cant was 1st with La Boule d'Or, a magnificent lot; Messrs. Keynes & Co. 2d, with Souvenir d'Elise, and Messrs. G. Prince 3d, with Jean Ducher. Messrs. William Paul & Son took the 1st prize for three trusses of any new Rose with Duchess of Bedford, and Messrs. Paul & Son, Cheshunt, the 2d, with Earl of Beaconsfield, rose, with a shaded centre. The piece of plate offered by Mr. William Robinson for the best collection of "old Roses," *i.e.*, Roses in commerce prior to 1840, was awarded to Mr. Julius Sladden, of Chipping Norton, who was the only exhibitor, but who staged a remarkably fine collection, including, amongst others, the old China, the Scotch White, Felicité Perpetuel, Aimée Vibert, the old Monthly, the White Bath, Bourbon Queen, the old Cabbage, the common Moss, Madame Legras, Chenedole, Fairy, Eliza Savage, the yellow Provence, crimson Damask, the old Damask, Pactolus, Ruga, Globe Hip, Rosa Manetti, Comtesse de Lacepède, Rosa Mundi, York and Lancaster, Village Maid, Rose de Meaux, Coup de Hebe, Adam, Crested Moss, York White, Comte de Paris, &c. We look upon this exhibit as one of the most interesting in the whole show, and trust so good a precedent will be followed in future.

HOW TO JUDGE ROSES.

THE following outline suggestions as to judging at Rose shows, compiled from expressed opinions of leading rosarians, has been circulated by the National Rose Society:—

I.—JUDGES.

1. The judges shall, as far as possible, be three in number for all small shows, and for all sections of large shows.

2. They shall be selected principally from successful exhibitors.

3. They shall have no manner of interest in the section in which they are judging.

4. They shall begin punctually at the hour appointed.

II.—BOXES.

1. Roses must be judged as they are in the boxes at the time of inspection. No other consideration of any kind is admissible.

2. The boxes should be of the regulation size and shape and set out with moss, unless otherwise specified. Boxes of the regulation size are 4 inches high in front and 1 foot 6 inches wide.

III.—PRIZES.

1. No exhibitor may obtain more than one prize in the same class.

2. All Roses shown must have been cut from plants which have been the property of the exhibitor for not less than three months previously.

3. All Roses should be correctly named.

4. The showing of duplicates under the same name, still more under a different one, will disqualify the exhibitor. Judges are expected to look closely to this.

5. Judges have power to disqualify for any infringement of the rules on the schedule.

IV.—METHOD OF JUDGING.

1. First cast out all bad boxes.

2. Then compare the residue.

3. The following, when necessary, shall be the method of comparison.

(*a*). One of the judges should count and designate the good blooms.

(*b*). The other two should stand by and stop him when they do not agree.

(*c*). In every difference of opinion a majority shall decide.

(*d*). The result of such counting shall form the decision.

V.—POINTS.

Where points are found necessary they shall be allotted as follows:—

1. Three points shall be given for the best blooms; two for mediums; one for those not so good, but not bad enough to cut out; and an extra point for a very superior bloom.

2. One point shall be taken off from the box for every case of decided badness.

3. Teas and Noisettes shall have no especial favour shown to them as such.

4. Where stands are equal in respect of blooms, judges shall proceed to consider the general evenness, variety, arrangement, and setting up; the boxes being placed side by side, and in the same light, for that purpose.

DEFINITIONS.

1. *A Bloom or Truss* shall be taken to mean a Rose, with or without buds and foliage, as cut from the tree.

2. *A Good Rose* must have form, size, brightness, substance, foliage, and be at the time of judging in the most perfect phase of its possible beauty.

3. *A Bad Rose.*—All blooms or trusses shall be considered bad that have faulty shape, confused centre, or faded colour; and which are either undersized, or oversized to the extent of coarseness, or of over-blooming.

4. *Form* shall imply petals abundant, and of good substance, regularly and gracefully disposed within a circular symmetrical outline.

5. *Brightness* shall include freshness of colour, brilliancy, and purity.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JULY 3, 1878.

	BAROMETER.			TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Fahr	Departure from the Mean for 28 days	Highest	Lowest	Range	Mean of 24 Hours	Departure of Mean for the Week	Mean Dew Point	Dew Point at 9 A.M.	Dryness of Air at 9 A.M. Sat = 100.	Average Direction.	
June 27	In. 29.83	In. + 0.06	° 89.1	° 50.9	° 38.2	° 73.6	° + 12.3	° 56.9	56	S.E. to S.S.E.		In. 0.00
28	29.76	+ 0.06	85.0	62.1	22.9	71.1	+ 9.9	57.1	65	E.S.E.		0.00
29	29.63	+ 0.19	83.0	57.3	25.7	68.0	+ 6.7	56.8	67	E.		0.00
30	29.66	+ 0.16	70.9	50.6	14.3	59.7	− 1.5	59.3	99	E.N.E. to N.E.		0.87
July 1	29.74	+ 0.08	67.0	53.2	13.8	58.4	− 2.8	54.6	87	E.N.E. to E.		0.00
2	29.70	+ 0.12	64.1	49.8	14.3	54.0	− 7.1	50.0	86	E.N.E.		0.04
3	29.81	0.00	63.0	50.7	12.3	54.7	− 6.5	47.0	85	N.W. to W.N.W.		0.05
Mean	29.74	− 0.03	71.6	55.0	18.7	62.8	+ 1.6	55.2	78	E.		Sum 0.90

June 27.—A very fine hot day. Cloudless. Breeze.
— 28.—A very fine clear hot day
— 29.—A very fine day, clear and warm. Cloudless at night.
— 30.—Overcast, dull, and cool throughout. Thunder heard from 11 A.M. to 2 P.M. Heavy rain from 2 to 3 P.M., and again from 5 to 6 P.M.
July 1.—Fine but cloudy till 10 A.M. Overcast and dull after. Cool. Thin rain at night.
— 2.—Overcast, frequent thin rain till 3 P.M. Fine till 4 P.M. Dull afterwards. Overcast at night.
— 3.—Dull and very cloudy till 2 P.M. Fine after. Smart showers between 11.30 A.M. and 2 P.M.

LONDON: *Barometer.*—During the week ending Saturday, June 29, in the vicinity of London, the reading of the barometer at the level of the sea decreased from 30.15 inches at the beginning of the week to 30.07 inches by the evening of the 23d, increased to 30.21 inches by the morning of the 26th, and decreased to 29.80 inches by the end of the week. The mean reading for the week at sea level was 30.06 inches, being 0.06 inch above that of the preceding week, and 0.06 inch above the average.

Temperature.—The highest temperature of the air observed by day on the 23d was 82°, on the 24th was 85½°; 25th, 85°; 26th, 90½°; 27th, 89°; 28th, 85°; and 29th, 83°; the mean value for the week was no less than 85¾°. The lowest temperatures of the air observed by night varied from 56¾° on the 24th, to 63¼° on the 25th; the mean value for the week was

59¾°. The mean daily ranges of temperature were large, and varied from 31½° on the 26th, to 21¼° on the 25th; the mean for the week was 26°. The mean daily temperatures of the air, and the departures from their respective averages were as follows:—23d, 68°.2, + 7°.5; 24th, 69°.1, + 8°.2; 25th, 70°.6, + 9°.5; 26th, 72°.3, + 11°.1; 27th, 73°.6, + 12°.3; 28th, 71°.4, + 9°.9; 29th, 68°, + 6°.7. The mean temperature of the air for the week was 70°.5, being 9°.3 above the average of sixty years' observations. It was the hottest week since that ending August 19, 1876, the next in order was that ending July 27, 1872.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 160½° on the 27th, 159° on the 23d, 157¾° on the 24th, and about 156° on the 28th and 29th; on the 25th the highest reading was 148°. The mean of the seven high readings was as large as 154¼°. The lowest readings of a thermometer on grass with its bulb exposed to the sky were 48¼° on the 23d, 50½° on the 29th, and 51° on the 24th and 26th; the mean for the week was 51¾°.

Wind.—The direction of the wind was variable, and its strength gentle. The weather during the week was very fine and bright, and excessively hot; the sky was generally free from cloud.

A thunderstorm occurred on the 23d, accompanied by very heavy rain, and distant thunder was heard on the 26th during the afternoon.

Rain fell only on the 23d, during the thunderstorm; the amount measured was 0.58 inch.

England: *Temperature.*—The highest temperatures of the air observed by day were 92½° at Bristol, 90½° at Blackheath, 90° at Cambridge, 89° at Eccles, 88¾° at Nottingham, 88° at Leeds, 87¾° at Leicester and Bradford, and 87° at Norwich, Wolverhampton, and Sheffield; the highest temperature at Portsmouth was 76°, and at Sunderland was 79°; the mean value from all stations was 86½°. The lowest temperatures of the air observed by night were 51° at Truro, 51½° at Cambridge, 52° at Eccles, and 53° at Sheffield; the lowest temperature at Portsmouth was 57°, and at Blackheath was 56¾°; the mean value from all stations was 54°. The range of temperature in the week was the greatest at both Bristol and Cambridge, 38½°, and the lowest at Portsmouth, 19°; the mean range of temperature from all stations was 32½°.

The mean of the seven high day temperatures was the highest at Blackheath and Cambridge, both 85¾°, Bristol 84¾°, Nottingham and Eccles, both 84°, and Leicester 83½°; and the lowest at Portsmouth, 73°, and Plymouth 73½°; the mean from all stations was 80½°. The mean of the seven low night temperatures was the lowest at Truro, 56°, Eccles 56¾°, and Hull 57°; and the highest at Portsmouth, 61°, and Brighton 60½°; the mean value from all stations was 58½°. The mean daily range of temperature in the week was the greatest at Cambridge, 28½°, and the least at Portsmouth, 12°; the mean daily range from all stations was 22¼°.

The mean temperature of the air for the week from all stations was 67¾°, being 11¼° higher than that of the preceding week, and 9½° higher than the value for the corresponding week in 1877. The highest were 70½° at Blackheath, and 69¾° at Bristol, Leicester, and Cambridge, and the lowest were 64° at Truro and 64½° at Plymouth.

Rain fell generally on one day only during the week; the amounts collected varied from seven-tenths of an inch at Wolverhampton and Leeds to one-hundredth of an inch at Liverpool. At Portsmouth, Sheffield, Hull, and Bradford no rain was measured; the average fall over the country was a quarter of an inch.

The weather during the week was very fine, bright, and hot, and the sky generally clear.

Thunderstorms were pretty frequent all over the country.

Scotland: *Temperature.*—The highest temperatures of the air varied from 87° at Glasgow, 83° at Paisley, and 82° at Greenock, to 73½° at Aberdeen; the mean value from all stations was 80¾°. The lowest temperatures of the air varied from 45° at Paisley and 46° at Perth to 52½° at Aberdeen; the mean from all stations was 47¾°. The mean range of temperature from all stations was 33°.

The mean temperature of the air for the week from all stations was 64°, being 3½° lower than that of England, and 7½° higher than the value for the corresponding week in 1877. The highest were 65½° at Glasgow and 65° at Paisley, and the lowest was 63¼° at Aberdeen and Perth.

Rain.—The falls of rain varied from 0.44 inches at Perth, to 0.01 inches at Greenock, at Aberdeen and Paisley no rain fell; the average fall over the country was 0.15 inch.

Dublin.—The highest temperature of the air was 79½, the lowest 49°, the range 30½°, the mean 64°, and the fall of rain 0.80 inch.

JAMES GLAISHER.

Obituary.

Time—the great leveller—has of late sorely thinned the ranks of the florists whose influence and work was felt more than a generation ago. John Keynes, of Salisbury, and George Wheeler, of Warminster, have quickly been followed to the grave by a younger man, but yet one who was a most active, hard-working, and successful florist a quarter of a century ago—William Holmes, of the Frampton Park Nursery, Hackney. Those who were familiar with the burly, manly form of our late friend little thought the germs of dissolution lay so thickly within him; and a long lingering illness of nearly a year's duration resulted in consumption, and he died on the afternoon of Saturday last, fully conscious up to a short period before his death.

William Holmes was born at West Ham, on September 26, 1820, and was a florist by instinct, for as a lad he was a real enthusiast in the matter of florists' flowers, the Dahlia being one of the first, as it was one of the most favoured, of his pets. It was exceedingly pleasant, when in his company, to hear him recite details of his young experiences as a florist, and I well remember the glee with which he once told me that his father or uncle exhibited Dahlias in an old-fashioned divided pie-dish filled with sand, into which the stems of the flowers were stuck, three on one side and three on the other of the division. At that time he used to attend the Chelmsford and other floricultural exhibitions, all of which fed his enthusiasm, and fired him with high desires to excel.

It is perhaps to be regretted that we know so little generally of the earlier doings in their favourite pursuit of some of our leading florists. One thing is certain in regard to William Holmes, that when quite young he was active in raising seedling Dahlias, and sent out at various times some good and useful flowers. In 1848 he became gardener to Dr. Frampton at Hackney, and it was while he filled that situation his fame as an exhibitor culminated. He was a frequent and successful exhibitor of Dahlias, and the large-flowered Chrysanthemum was one of his most dearly loved flowers. Pansies, too, were a real pleasure to grow, and he exhibited also Gloxinias, Achimenes, Pelargoniums, &c.; and could the records of the exhibitions he attended be opened and read it would be found that his exhibits were invariably in the first position.

He was one of the earlier promoters of the National Floricultural Society, which was established in March, 1851; he was a constant censor at the Society's meetings, and florists' societies always got from him a helping hand. In conjunction with the late Mr. R. James, of Stoke Newington, he originated the Stoke Newington Chrysanthemum Society, of which his eldest son, William, is now the secretary. This was the first Chrysanthemum Society started on the Middlesex side of the Thames.

At one time his contributions to gardening literature were frequent and valuable. The *Gardeners' Chronicle, Florist, Gossip of the Garden*, and others had the benefit of his experience; especially in connection with the culture of the Chrysanthemum.

When Dr. Frampton's establishment was broken up Mr. Holmes started in business as a florist and nurseryman in Well Street, Hackney, and designated his place the Frampton Park Nursery. Of late years his business had changed, and his principal work consisted in laying out and maintaining the gardens attached to suburban residences. The pretty City garden of St. Botolph, Bishopgate, was kept by him, and his illustrations of successful City bedding-out were familiar to many. He grew the choicer bedding plants largely both for his own use and for purposes of sale.

In his own district he was a well-known public man. As Vice-Chairman of the Hackney Board of Guardians and otherwise for eighteen years connected with parochial affairs at Hackney, as well as Churchwarden of the church of St. Luke's, he was well known for his upright, manly, straightforward businesslike character. He may be said to have loved the strife of local politics, and, having some amount of leisure at his command, heartily enjoyed this branch of public work. The Vicar of St. Luke's mourns the loss of a valuable fellow-worker in his church work.

Some of us who knew him best can properly estimate the social side of his character. He literally overflowed with geniality and good spirits, and those who were wont to travel with him to the provinces to act as censors at flower shows (in which position his services were in frequent request) came to value highly the kindly man rich in animal spirits. Many a horticultural society will have cause to regret that he will no more be present at their annual gatherings. The Gardeners's Royal Benevolent Institution loses a long and steady supporter.

He died full of honours at the age of fifty-seven. The season of his life was one of work worthily done. The lesson of his death can be best given in one of Sir William Jones' translations from the Persian poets:—

"So live that, sinking in thy long last sleep,
Calm may'st thou smile while all around thee weep."

R. D.

Enquiries.

He that questioneth much shall learn much.—Bacon.

Dutch Clover.—When did the epithet "Dutch" get first applied to white Clover, and why should it be more particularly applied to that species? *M.*

Flowering Agave.—A correspondent has a specimen of the American Aloe coming into flower—the flower-stalk being now 8 feet in height—which he is anxious to dispose of but cannot do so through the ordinary channels. The Editors will give further informatiun.

Answers to Correspondents.

Calceolaria Seed: *E. D. L. D.* We are sorry we cannot tell you; see our advertising columns.

Insects: *A. H.* The insect which has burrowed into the stems of your Petatos is the caterpillar of a moth, apparently one of the Pyralidæ; a very unusual habit. A sharp pinch of the stem would kill the caterpillars without cutting off the head of the plant. *I. O. W.*

Monstrous Gloxinia: *Correspondent.* Gloxinias are subject to this highly curious and interesting malformation. It is an outgrowth from the outer surface of the corolla, and is sometimes so complete as to form a second corolla outside the first, and when that is the case it is no dissight. We would recommend you to select the best and try to improve them.

Names of Plants: *B. W.* 1, Adiantum hispidulum; 2, too much crushed for identification; 3, Cirrhœa tristis; 4, Lamprococcus fulgens.—*Camjee.* Viburnum opulus. May be increased by cuttings and seeds. Fruit eaten in Sweden.—*Clifford.* Helichrysum rosmarinifolium.—*J. C. & Sons.* 2, Saxifraga rotundifolia.—*R. E. E.* 1, Spergularia marginata; 2, Cardamine impatiens; 3, Glaux maritima.—*A. B.* 1, Lælia crispa; 2, Stanhopea insignis.—*P. W.* Specimen utterly insufficient; send leaves and fruit as well as flowers.—*Maria M.* Pyrethrum macrophyllum.—*C. R.* 1, Staphylea pinnata; 2, Valeriana officinalis; 3, Potamogeton natans; 4, Circeia lutetiana; 5, Narthecium ossifragum; 6, Eriophorum angustifolium.—*C. B.* Pernettya mucronata.—*J. E., Luton.* 1, Symphytum officinale; 2, Melilotus officinalis; 3, Galium verum; 4, Galium saxatile; 5, Hypericum perforatum; 6, Circeia lutetiana; 7, Erythræa Centaurium.—*J. B.* 1, Habenaria bifolia; 2, Ranunculus aquatilis; 3, Lotus corniculatus; 4, Potamogeton natans; 5, Orchis maculata; 6, Galium verum.—*G. M., Gordon Castle.* 2, Escallonia rubra; 4, Potentilla nepalensis; 5, Spiræa filipendula, double fl.; 6, Lychnis; 1 and 3 labels misplaced—Tropæolum majus, double fl., and Campanula glomerata, probably.

Pinks: *Saml. Brown, Handsworth, Birmingham.* 1, light purple, bright, well laced, large and full; 6, dark purple, would take high rank save that the petal is inclined to curl; 15, heavily laced purple, the marginal colour paler than the eye, but good; red-laced, unnamed, and unnumbered, very broad in the lacing, but wants substance and smoothness. The three numbered varieties are the best. Each deserves cultivation, though no advance upon the best already distributed. *E. S. D.*

☞ Foreign Subscribers sending Post-office Orders are requested to make them payable at the post-office, King's Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

Communications Received.—J. G (thanks).—A. F.—J. O'B.—E. C.—J. G. B.—A B (received with thanks, and will be published shortly).—A. J.—J. S.—A. H.—L. K.—D. T. F.—J. R. L.—W. H. D.—A. O.—Bonairkaie.—J. B.—Sir J. L.—G. R.—A Reader.

Markets.

COVENT GARDEN, July 4.

Our market has been very active since our last report, and outdoor fruit is now showing itself in fair supply. Raspberries are in demand at low rates, but Cherries and Currants, except fine samples, are flat. High-class hot-house fruit is cleared well at good figures. *James Webber, Wholesale Apple Market.*

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apricots, per dozen	1 6	3 0	Melons, each	3	0 8 0
Cherries, per lb.	0 6	1 6	Oranges, per 100	0	0 12 0
Figs, per dozen	4 0	10 0	Peaches, per dozen	4	0 18 0
Grapes, per lb.	2 0	8 0	Pine-apples, per lb.	2	0 8 0
Lemons, per 100	4 0	12 0	Strawberries, per lb.	0	6 3 0

VEGETABLES.

	s. d.	s. d.
Artichokes, English Globe, doz.	.. 2 0– 4 0	
Asparagus, Sprue, per bundle..	.. 1 6– ..	
— Eng., per 100	.. 2 0– 6 0	
Aubergines, p. doz..	3 0– ..	
Beans, French, per 100 ..	.. 1 0– 2 6	
— broad, per bush.	3 0– ..	
Beet, per doz.	.. 1 0– 2 0	
Cabbages, per doz. ..	1 0– 2 0	
Carrots, per bunch ..	0 4– 0 6	
— new Fr., p. bun.	1 0– 1 3	
Cauliflowers, per doz.	4 0– 6 0	
Celery, per bundle ..	1 6– 2 0	
Chilis, per 100 ..	5 0– ..	
Cucumbers, each ..	0 4– 1 6	
Endive, per doz. ..	1 0– 2 0	
Endive, Batav. dozen	1 6– ..	
Garlic, per lb. ..	0 6– ..	
Herbs, per bunch ..	0 2– 0 4	
Horse Radish, p. bun.	4 0– ..	
Leeks, per bunch ..	0 2–0 4	
Lettuces, Cos, Eng., per score ..	.. 1 6– 2 6	
Mint, green bunch..	0 4– 0 6	
Onions, young, bun.	0 4– 0 6	
Parsley, per bunch..	0 4– ..	
Peas, green, per qr.	1 6– 2 0	
Radishes, per bunch	0 1– 0 3	
— Spanish, doz. ..	1 0– ..	
— New Jersey, doz.	2 0– ..	
Shallots, per lb. ..	0 6– ..	
Spinach, per bushel	2 0– 3 0	
Tomatos, per dozen	2 6– 3 0	
Turnips, new, p. bun.	0 6– ..	

Potatos:—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

PLANTS IN POTS.

	s. d.	s. d.
Bedding Plants in variety, per dozen	1 6– 3 0	
Begonias, per doz. ..	6 0–12 0	
Bouvardias, do ..	12 0–24 0	
Calceolarias, p. doz. .	6 0–18 0	
Campanula, per doz.	12 0–18 0	
Coleus, per dozen ..	6 0– 9 0	
Crassula, per dozen	15 0–36 0	
Cyperus, do... ..	6 0–12 0	
Dracæna terminalis	30 0–60 0	
— viridis, per doz.	18 0–24 0	
Erica, in var., doz. .	12 0–36 0	
Euonymus, var., doz.	6 0–24 0	
Ferns, in var., doz.	4 0–18 0	
Ficus elastica, each	2 6–15 0	
Foliage Plants, various, each ..	.. 2 0–10 6	
Fuchsias, per dozen .	6 0–18 0	
Hydrangea, per doz	18 0–24 0	
Lilium eximium, doz.	18 0–36 0	
Mignonette, per doz.	4 0– 9 0	
Musk, per dozen ..	3 0– 9 0	
Myrtles, per doz. ..	6 0–12 0	
Palms in variety, each	2 6–21 0	
Pelargoniums, per dozen	9 0–30 0	
— scarlets, zonal, per dozen ..	4 0– 9 0	
Petunias, per dozen	6 0–18 0	
Rhodanthes. p. doz.	6 0–12 0	
Roses, per dozen ..	18 0–60 0	
— Fairy, per doz.	9 0–12 0	
Saxifrage, per doz ..	12 0–36 0	
Spiræa, per dozen ..	6 0–24 0	

CUT FLOWERS.

	s. d.	s. d.
Abutilon, 12 blooms	0 6– 1 0	
Arum Lily, per doz.	3 0–12 0	
Bouvardias, per bun.	1 0– 4 0	
Calceolaria, 12 bun..	9 0–18 0	
Campanula, 12 bun.	6 0– 9 0	
Carnations, 12 blooms	1 6– 4 0	
Cornflower, 12 bun..	4 0– 9 0	
Eschscholtzia, 12 bun ..	.. 2 0– 6 0	
Eucharis, per doz. ..	6 0–12 0	
Heliotropes, 12 sp. ..	0 6– 1 0	
Iris, 12 bunches ..	6 0–18 0	
Mignonette, 12 bun.	6 0– 9 0	
Myosotis, 12 bun. ..	3 0– 6 0	
Pelargoniums, 12 spr.	0 9– 2 0	
— zonal, 12 sprays	0 4– 1 0	
Peony, Ch., 12 bun.	6 0–12 0	
Pinks, var., 12 bun.	4 0– 9 0	
Primula, double, per bunch	1 0– 2 0	
Ranunculus, 12 bun	3 0– 6 0	
Roses (indoor), doz.	1 6–12 0	
— (outdoor), 12 bun.	4 0–12 0	
— Moss), 12 bunch.	6 0–18 0	
Spiræa, 12 sprays ..	1 6– 4 0	
Stephanotis, 12 sp...	3 0– 9 0	
Sweet Peas, 12 bun.	4 0– 9 0	
Tropæolum, 12 bun.	1 0– 4 0	

SEEDS.

LONDON: *July* 3.—There is nothing new to report in connection with the trade for farm seeds, which, as is usual at this time of year, commands but little attention. No inclination is manifested to speculate in any particular article, though some few parcels of red Clover seed have been quietly absorbed, presumably for holding over. White Clover seed and Alsike are very dull, as is also Trefoil, though reports of this last continue favourable. Sowing Mustard and Rape seed are steady, and continue in fair request, but there is a great want of life about the trade. Hemp and Canary seed are without alteration, and move off very slowly. Feeding Linseed is in good demand, but the quantity offering is fully sufficient to meet all requirements. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was active, owing to clearance at the dead market, and prices advanced. There was a short supply of sheep and a brisk demand; prices 1*d.* higher, and an early clearance was effected. There was also a good demand for lambs at higher rates. Calves were about the same as of late. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 8*d.*; lambs, 7*s.* 6*d.* to 8*s.* 6*d.*; pigs, 4*s.* to 5*s.*—The cattle trade on Thursday was tolerably steady. Beasts and sheep of good quality were in request at full prices. Lambs were dear, and calves and pigs were steady.

HAY.

The report of Tuesday from Whitechapel states that there was a fair trade and prices were firm. The supply was rather short. Prime Clover, 100*s.* to 135*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 85*s.* to 100*s.*; inferior, 70*s.* to 80*s.*; and straw, 42*s.* to 53*s.* per load.—On Thursday a short supply of fodder was offering. For best sorts trade ruled brisk, but other descriptions were dull of sale. Prime Clover, 100*s.* to 138*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 85*s.* to 102*s.* 6*d.*; inferior, 70*s.* to 80*s.*; and straw, 42*s.* to 53*s.* per load.—Cumberland Market quotations:—Superior old meadow hay, 112*s.* to 120*s.*; inferior, 86*s.* to 92*s.*; superior old Clover, 132*s.* to 140*s.*; inferior, 105*s.* to 115*s.*; and straw, 55*s.* to 60*s.* per load.

POTATOS.

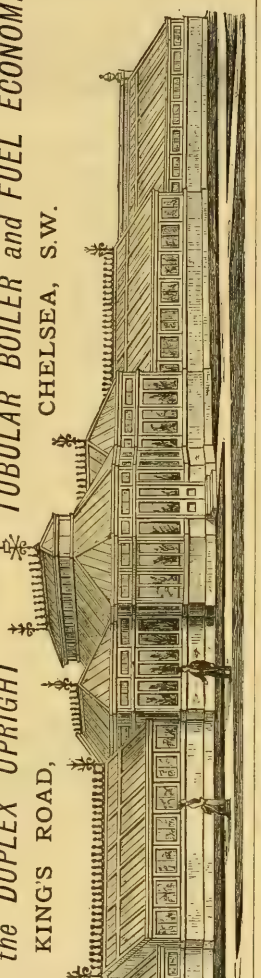
The Borough and Spitalfields markets reports state that there have been moderate arrivals, and without activity the trade has been steady. New Jersey kidneys, 160*s.* to 190*s.*; ditto, round, 120*s.* to 160*s.*; Guernsey kidneys, 170*s.* to 200*s.*; ditto, round, 130*s.* to 160*s.* per ton; New Dutch, 2*s.* 3*d.* to 2*s.* 6*d.* per basket; French, 2*s.* to 2*s.* 6*d.* per basket; English shaws, 140*s.* to 160*s.* per ton.—The importations into London last week comprised 2756 cases from Barfleur, 990 cases 436 boxes Cherbourg, 1021 baskets Rotterdam, 138 boxes 287 packages Malta, 811 boxes Antwerp, and 88 packages Boulogne.

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Price, in jars containing 8 oz., 1*s.* 6*d.*, and 20 oz., 3*s.*; drums, 28 lb., 25*s.*

2 oz. sufficient for 1 gallon of water for ordinary use.

Wholesale from the Manufacturers, CORRY AND SOPER, Bonded Tobacco Stores, Shad Thames, London, S.E.; or HOOPER AND CO., Covent Garden, W.C.; and Retail from all Seedsmen.

Wholesale Russia Mat Merchants.

MARENDAZ AND FISHER have received from their Agents at Archangel several large shipments of new ARCHANGEL MATS; also a large quantity of ST. PETERSBURG MATS from Cronstadt. A small quantity of RAFFIA in Stock.

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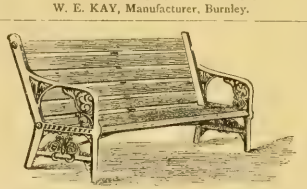
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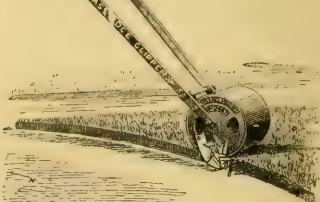
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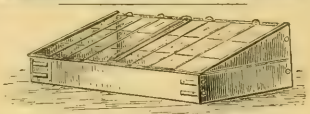
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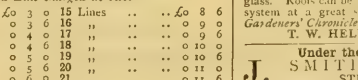
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Contents of this week's Number (July 2):—

1. On the Watch.
2. The Priest in Politics.
3. Parliamentary Reporting.
4. German Socialism.
5. The Oxford Fastman.
6. The Criminal Code Bill. Considerations by a Habitual Criminal.
7. The Dark Continent.
8. Pictures in Paris and London.
9. The Morals of Merrion Square.
10. Carmen.
11. The Chat of the Fair.
12. Country Society.
13. Fashions in the Fair.
14. Turning Over Fresh Leaves.

Mayfair of this week also contains Portrait Sketches of Sir William Harcourt, M.P.; Mr. O'Donnell, M.P.; Mr. Marvin (the over-paid Clerk in the F.O.); Mr. March (of the F.O.), &c.

Next week's Number will contain a Personal Sketch of MR. BUTT IN THE FOUR COURTS.

It will be illustrated by an Original Portrait, taken in Court, in March, 1865.

A Sketch of Lord Chief Justice Whiteside will follow.

The Habitual Criminal will continue, next week, his "Considerations" of the New Criminal Code Bill.

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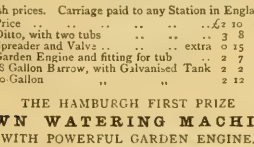
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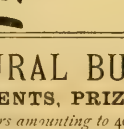
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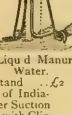


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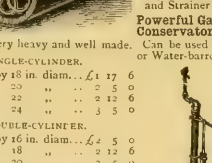
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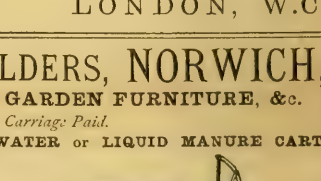
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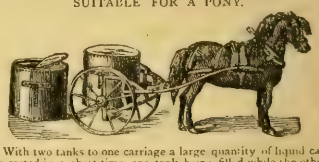
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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With this Number is presented a Double Page Coloured Plate of "A GROUP OF TEA ROSES."

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 *are* 1*s. each.*

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

EXHIBITION of the NATIONAL CARNATION and PICOTEE SOCIETY in conjunction with the FRUIT and FLORAL MEETINGS of the ROYAL HORTICULTURAL SOCIETY, TUESDAY, July 23. For Conditions see Schedule of Prizes, to be obtained on application at the Society's Office.

N.B.—There will be no Meeting of the Fruit and Floral Committees on Tuesday, July 16, as originally fixed.

NEWCASTLE-ON-TYNE, SUMMER SHOW, Leazes Park, JULY 18 and 19. Annual Expenditure, over £2000. 20 Plants £50, and liberal Prizes for Pelargoniums, Roses, Table Decorations, Fruit, &c.

W. J. TAYLOR and J. H. FRENCH, Hon. Secs.

WESTON-SUPER-MARE and EAST SOMERSET HORTICULTURAL SOCIETY.

The SIXTH ANNUAL EXHIBITION in connection with this Society will be held at Weston-super-Mare, on WEDNESDAY, July 31, when TWO HUNDRED POUNDS will be offered in Prizes. Schedules forwarded on application to

W. B. FRAMPTON, Sec., Weston-super-Mare.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

SPECIAL EXHIBITION for COTTAGERS on SATURDAY, August 3.

Schedules of Prizes may be obtained from

BRUCE FINDLAY, Curator and Secretary, Royal Botanic Gardens, Manchester.

THE FOURTH GREAT METROPOLITAN BEE SHOW, promoted by the British Bee Keepers' Association, will be held, under the Presidency of the Baroness Burdett Coutts, in the Gardens of the Royal Horticultural Society, South Kensington, S.W., on August 6, 7, and 8. For PRIZE LISTS and other information apply to the Honorary Secretary,

Rev. HERBERT R. PEEL, Abbot's Hill, Hemel Hempstead, Herts.

BLACKPOOL WINTER GARDENS and PAVILION COMPANY (LIMITED).

IMPORTANT NOTICE.—In consequence of the deferred opening of this establishment, and the preparations necessary for a State Visit of the Right Honourable the Lord Mayor of London and the Sheriffs of London and Middlesex, the HORTICULTURAL EXHIBITION announced to be held there on July 17, 18 and 19, WILL BE ABANDONED.

By Order (Signed), THOMAS BLANE, Sec.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

ALTERNANTHERAS, and other Carpet Bedding Plants, from Stores or in pots, in any quantities, consisting of all the best varieties. Priced Lists on application.

WILLIAM MILES, West Brighton Nurseries, Cliftonville, Sussex.

CINERARIA.—Smith's superb strain. Strong plants, ready for potting off, 2s. per dozen post-free. PRITCHARD AND SONS, Nurserymen, Shrewsbury.

BRYSON'S GOLDEN GEM is the best FUCHSIA (1878), with golden-yellow foliage, corolla double, purple feathered with red, habit remarkably neat. Nice little plants, 5s.; smaller, 2s. 6d.; cuttings, 1s. 6d.

J. BRYSON, Parkend Nursery, Helensburgh, N.B.

To the Trade.

RAPE SEED and WHITE MUSTARD.

H. AND F. SHARPE have fine samples of the above-named Seeds, suitable for sowing purposes Prices, &c., may be had on application.

Seed Growing Establishment, Wisbech.

To the Trade.

MALDEN AND SON have a few quarters of the far-famed Stratton Green Round TURNIP SEEDS to dispose of. For price, &c., apply to MALDEN AND SON, Seed Growers, Biggleswade.

ORCHIDS.—Thousands of good Orchids can be supplied at 5s., 7s. 6d., and 10s. 6d. each. An inspection is invited, or by sending names of those already possessed different varieties can be given, and purchasers will have a good selection made for them.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

To the Trade, &c.

CLEMATISES.—An immense quantity of the best and newest sorts. Plants of most kinds are now very fine.

EWING AND COMPANY, The Royal Norfolk Nurseries, Eaton, near Norwich.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.

BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

Hyacinths, Tulips, and other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

B. MALLER, LEWISHAM, has to offer for cash 3000 GREVILLEA ROBUSTA in 48-pots at 75s. per 100. Less number than 50, 12s. per dozen.

Cabbage Plants.

FOR SALE, good strong ENFIELD MARKET Cabbage Plants, on Rail at 3s. per 1000. Can now be supplied by

J. WOOBERRY, Washington, Pulborough, Sussex.

RICHARD WALKER has to offer London Market CAULIFLOWER Plants, 6s. per 100; Snow's Winter White BROCCOLI, 5s. per 100; SAVOYS and BRUSSELS SPROUTS, 4s. per 100; EAST HAM Plants, 3s. per 1000, ROBINSON'S DRUMHEAD, 2s. per 1000. These plants are all true to name. Cash with orders.

Market Gardens, Biggleswade.

Gentlemen's Gardeners, Amateurs, and Others REQUIRING

GARDEN POTS of best quality, are requested to send their orders to

J. MATTHEWS, Royal Pottery, Weston-super-Mare, Price List on application.

ORANGE TREES.—Two fine free-flowering and well furnished with foliage, about 9 feet high and 8 feet through, for SALE, or EXCHANGE for TWO TREE FERNS of similar size. Apply to

Mr. COOK, Gardener to Welbore S. Ellis, Esq., Hazelbourne, Box Hill, Dorking.

WANTED, One Thousand or more Struck Cuttings of Show and Fancy PELARGONIUMS, good market sorts; also 500 strong BRONZE GERANIUMS, not particular as to sorts. State cash price to

JOHN W. SENLEY, St. George, near Bristol.

WANTED, GREEN TARRAGON.—Two hundred dozen Market Bundles, more or less. Apply, stating quantity and price,

M. B., *Gardeners' Chronicle* Office, W.C.

WANTED, six tons of HARD GREEN GAGES (English), and twenty tons of APPLES. Apply, stating price, to JOHN MOIR AND SON, 148, Leadenhall Street, London, E.C.

WANTED, one or two NESTS of DRAWERS suitable for the Seed Trade.—Apply, with full particulars, to

JAMES YATES, Seed Merchant, Royal Oak Mills, Stockport.

FOR SALE, in October and November, Red and Black CURRANT and GOOSEBERRY BUSHES; also RASPBERRY CANES, STRAWBERRY PLANTS and RHUBARB STOOLS. For particulars, apply to Mr. SCOTT, Garthdee, by Aberdeen.

STRAWBERRY PLANTS.—All the best Covent Garden kinds, in any numbers, either for planting or forcing. CATALOGUE free. Special price for large quantities.

H. CANNELL, F.R.H.S., Swanley, Kent.

Show and Fancy Pansies, also Bedding Violas.

DOWNIE AND LAIRD, ROYAL WINTER GARDEN, Edinburgh, invite inspection of their unrivalled collection of the above, which are now in full flower, and may be seen any day (Sunday excepted).

Genuine Garden Seeds.

WM. CUTBUSH AND SON have for many years held some of the finest stocks of Seeds in the Trade, and they believe that no House can possibly supply better quality.

CATALOGUES post-free on application.

Highgate, London, N., and Barnet, N.

New Plant Catalogue.

HEATH AND SON beg to announce their New Illustrated CATALOGUE of ORCHIDS, FERNS, STOVE PLANTS, &c., is now ready, and will be forwarded, gratis and post-free, to all applicants.

HEATH AND SON, Nurserymen, &c., Cheltenham.

Primulas—Primulas—Primulas.

WILLIAMS' superb strain, 1s. 6d. per dozen, 10s. per 100; package and carriage free. CINERARIAS, choicest assortment, same size and price. The above are quite equal to those I have sent out in previous years. Cash with order.

JOHN STEVENS, The Nurseries, Coventry.

BEGONIAS — Handsome-flowered, good blooming plants, of choice named sorts, 30s. and 42s. per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Bedding Violas, Show and Fancy Pansies.

DICKSONS AND COMPANY, 1, Waterloo Place, Edinburgh, invite an inspection of their unrivalled collection of the above (including the new varieties for next season), which is now in great beauty at their Pilrig Park Nursery. Established upwards of a century.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

To the Trade.—New Roses of 1878.

GEO. COOLING begs to offer extra fine plants of thirty-two of the best varieties of the above, with plenty of buds for immediate working. List and price on application. The Nurseries, Bath.

ROSES.—Visitors to the Nurseries are invited to inspect our extensive Collection of ROSES, which are now in magnificent bloom.

CRANSTON'S Nurseries, King's Acre, Hereford.

Mitchell & Sons' Renowned Roses.

JAMES MITCHELL AND SONS beg to announce that their magnificent collection of ROSES are now in full bloom.

Piltdown Nurseries, near Uckfield, Sussex.

Venus' Fly-Trap.

DIONÆA MUSCIPULA.—Nice plants with good traps, of this interesting Fly-catcher, 30s. per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

True Native Scotch Fir Seed.

R. AND A. MORRISON, NURSERYMEN, Elgin, are taking in Orders for the above for spring delivery. Price on application.

CALCEOLARIA, superb selection, magnificent colours, beautifully marked.

CINERARIA, of splendid colours and large flowers.

PRIMULA, from exhibition plants.

The above are raised by the best growers in the kingdom. Packets 1s. and 2s. 6d. Supply limited, cannot serve the Trade.

C. R. FREEMAN, Economic Seedsman, Norwich.

Dutch Bulbs, First Quality Only.

C. G. VAN TUBERGEN'S Wholesale CATALOGUE of Hyacinths, Tulips, &c., will be forwarded free to the Trade on application to

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

NEW ZEALAND FERNS. Fine Exhibition Plants.

30 TODEA SUPERBA. 12 to 18 inches across.

12 ,, PELLUCIDA. 12 to 18 inches across.

All established in pots, and will be sold cheap to make room for other Plants. Apply to

PETER McKENZIE, Florist, 1, Gordon Street, Glasgow.

SALES BY AUCTION.

Dendrobium superbiens.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 18, at half-past 12 o'Clock precisely, an importation of the rare DENDROBIUM SUPERBIENS, in splendid plants, just received in the best possible condition, many of them in fine masses. This handsome Dendrobium is illustrated in our page 49 of this year's *Gardeners' Chronicle*, and at page 40 Professor Reichenbach says of it, "It is a great satisfaction to have this great beauty at hand." One great merit of this charming Dendrobium is that its handsome spikes of richly coloured flowers are extremely persistent, lasting individually eight or ten weeks.

On view the morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 18, a small COLLECTION of ESTABLISHED ORCHIDS, comprising many extremely rare and choice kinds, and including the following:—

Aerides crassifolium	Cattleya Exoniensis
Cattleya Dowiana	Calanthe Domnii
Cypripedium Druryi	Lælia anceps Dawsoni
Dendrobium Ainsworthii	Oncidium Balderramæ
Trichopilia crispa	Angræcum sesquipedale
Oncidium sessile	Odontoglossum phalænopsis
Trichosma suavis	Phalænopsis Manni
Epidendrum prismatocarpum	Lælia arpophylla
Aerides difforme	Aerides japonicum
Cattleya dolosa	Vanda Parishii

On view the morning of Sale, and Catalogues had.

Oncidium stipitatum platyonyx.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 18, at half-past 12 o'Clock precisely, an importation of plants of this New ONCIDIUM—quite recently described by Prof. Reichenbach. The plants to be sold are in excellent condition. Also an importation of ONCIDIUM AMPLIATUM and other ORCHIDS.

On view the morning of Sale, and Catalogues had.

Tree Ferns, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 32, King Street, Covent Garden, W.C., on FRIDAY, July 19, at half-past 12 o'Clock precisely, several importations of TREE FERNS, comprising fine trunks of Dicksonia antarctica, Cyatheas, Todeas, &c, in good condition; two consignments of BULBS from Algiers; ten cases of AMARYLLIS; specimen STOVE and GREENHOUSE PLANTS; also, which have just come from France; established and imported ORCHIDS; twelve galvanised wire UMBRELLA ROSE TRAINERS, &c.

On view the morning of Sale, and Catalogues had.

Bristol.

HIGHLY IMPORTANT UNRESERVED SALE of a celebrated Collection of Exhibition STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Parker & Bush (who are giving up exhibiting) to SELL by AUCTION, on the Premises, St. Michael's Hill Nursery, Bristol, on TUESDAY, July 16, at 11 for 12 o'Clock precisely, the whole of their magnificent Collection of Specimen Exhibition STOVE and GREENHOUSE PLANTS, which have won high honours at the chief shows in the West of England and elsewhere, comprising many perfectly unrivalled specimens, amongst which may be named Lapageria alba and rosea, Dipladenias, Ixoras, Alocasias, Marantas, Dracænas, Anthurium Scherzerianum, best variety, with 200 leaves; several matchless specimen Palms, including Cocos Weddelliana, Thrinax elegans, Livistona altissima, Dæmonoropus trichorus, and others of great merit; also an unusually fine assortment of specimen FERNS and MOSSES, including Gleichenia semi-vestita and rupestris, Adiantum Farleyense and gracillimum, Davallia Mooreana, Dicksonia antarctica, &c., Selaginellas in great variety, &c.

The stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Pyrgo Park, Romford, Essex.

IMPORTANT CLEARANCE SALE of Choice Exhibition Specimen STOVE and GREENHOUSE PLANTS of various sizes, all well trained, and in the best possible health, consisting of Anthurium Scherzerianum (Baines' variety), Lapageria alba (true) and rosea; rich assortments of Allamandas and Dipladenias, Bougainvillea lateritia, Pimeleas, Polygalas; a considerable number of young and attractive specimen Azalea indica and Ericas, admirably trained, embracing all the leading show varieties; Crotons, Dracænas, Caladium, Alocasia, and other ornamental foliage plants; some handsome Palms and Ferns, show and fancy Pelargoniums in variety, a small collection of valuable ORCHIDS, a nearly new CONSERVATORY, 50 feet by 18 feet; HOT-WATER PIPING; a nearly new Show Plant VAN, 14 feet 6 inches long by 8 feet wide, with cloth.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Lieut.-General Fytche to SELL the above beautiful COLLECTION of PLANTS by AUCTION, without the slightest reservation, on the Premises, Pyrgo Park, Havering-atte-Bower, near Romford, Essex, on THURSDAY, July 18, at 12 for 1 o'Clock precisely.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises, of Mr. LANE; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

The Nurseries, Taunton, Somerset.

IMPORTANT and ATTRACTIVE SALE of ORCHIDS, STOVE, GREENHOUSE and other PLANTS.

MESSRS. EDWIN WOTTON AND CO. have received instructions from Mr. W. Hockin to SELL by AUCTION, on the Nurseries, North Town, Taunton, on WEDNESDAY and THURSDAY, July 24 and 25, to commence each day at 11 o'Clock, COLLECTIONS of SPECIMEN STOVE, FOLIAGE, and GREENHOUSE PLANTS, Orchids, Exotic and British Ferns, Palms, Eucharis amazonica, Amaryllis, Liliums, and other Bulbs; Camellias, Azaleas, Epacris, and Heaths; 50 Magnolia grandiflora, 4 to 6 feet; pyramidal Myrtles, Cytisus racemosus, 17; large Specimen Fuchsias, 6 to 8 feet; 38 Zonal and Nosegay Geraniums, averaging 2 feet across; Acer Negundo variegatum, in pots; and a quantity of other Miscellaneous Plants, VASES, RUSTIC SEATS, RUSTIC ARBORETTES, HANGING BASKETS, &c.

Catalogues and Orders to View may be obtained on the Premises, or at the offices of the Auctioneers, 28, East Street, Taunton, five days prior to the day of Sale.

To Florists, Seedsmen, Fruiterers, Gardeners, &c.

TO BE DISPOSED OF, on very advantageous terms, in consequence of continued illness, an excellent BUSINESS in the above. Not long established, but doing a large and increasing trade. Main road S.W. To an enterprising man this is an opportunity seldom met with. Full particulars by addressing

A. Z., *Gardeners' Chronicle* Office, W.C.

Kent.—(4437.)

Eight miles from Covent Garden; occupying a first-class position in leading thoroughfare.

FOR DISPOSAL, a NURSERY and FLORIST'S BUSINESS, comprises about a quarter of an acre of ground, with four large Span-roof Greenhouses and Show-house, eight-roomed Dwelling-house and Seed-shop. Lease fifty-five years. Ground rent £6. Price for Lease, Goodwill, Dwelling-house, Shop, Glass, and other Erections, £150. Stock at a valuation, or would be sold by Auction.

Apply to PROTHEROE AND MORRIS, 98, Gracechurch Street, London, E.C.

TO LET, for a Term of years, a FLORIST'S BUSINESS, well situated in the West End. Compact and in Good Repair.

A. B. C., *Gardeners' Chronicle* Office, W.C.

TO LET, a Noble RESIDENCE in CUMBERLAND, known as Skirsgile Hall, near Penrith. Capital Stabling, Gardener's and Coachman's Cottages. Homestead, Pleasure and Kitchen Gardens. Frontage of upwards of a mile to the winding River Chamont. Richly timbered Park; in all 89 acres. Descriptions of Hall and Grounds now ready. Possession had November 11. To view and other particulars apply to

JOSEPH TREMBLE, Nurseryman (the owner), Penrith.

Berkshire.

FOR DISPOSAL, a Genuine Old-established NURSERY BUSINESS. First-class neighbourhood, close to rail. House, two Cottages, Stabling for two Horses, Cart-shed, Greenhouse, Tool-house, and about 9 acres of Land. For particulars apply to

Mr. HUNTON, Estate Agent, Bracknell.

FOR SALE.—Some large CAMELLIAS and ORANGE TREES, from 7 to 11 feet high. Full particulars may be obtained by applying to

C. V. R., Stanage Park, Brampton Brian, Herefordshire.

To Nurserymen, &c.

CHARLES VUYLSTEKE begs to call attention to his large and splendid stock of fine budded PLANTS, the best variety of the following:—Azalea indica, Azalea mollis, hardy Ghent Azaleas, Camellias, Kalmia latifolia, Rhododendrons, Spiræa (Hoteia) japonica, &c.

CATALOGUES on application at the

Nurseries, Loochristy, near Ghent, Belgium, or to his Agents in London, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, E.C.

ORCHIDS.—Thousands of choice Orchids arriving this month from Brazil, West Indies, Colombia, Assam, &c., can be supplied in fine imported pieces on arrival, at 35. 6d., 5s., 7s. 6d., and 10s. 6d. A choice selection of Established and Semi-established plants, growing freely and in good health, also kept in stock. Orchid growers are respectfully requested to make an early application to the

NEW PLANT AND BULB COMPANY, Lion Walk, Colchester, in order to secure the best pieces.

N.B.—The Brazilian Orchids are to hand, in fine condition.

To Market Gardeners and Others.

BROCCOLI PLANTS FOR SALE.

MR. MYATT has a large quantity to dispose of, the ground being let where he intended planting them. Walcheren Broccoli, 6s. per 100; Snow's Winter White, 4s. per 100. Crates for packing cost price.

26, Harefield Road, Brockley, S.E.

To Market Gardeners.

(To be sent out in the Autumn.)

MARÉCHAL NIEL, grafted on Brier roots, 4000 fine plants, fit for pot culture, at £2 16s. per 100, £26 per 1000.

VIOLA, Belle de Chatenay, fine, in good transplanted young plants, at £1 5s. per 100, and £10 per 1000. Other varieties of Viola, such as Marie Louise, Parma, Czar, do. white flower, for disposal in large quantities.

As many orders last season could not be supplied, as the Stocks run out, orders must be sent immediately, to

L. PAILLET, Nurseryman, Chatenay by Sceaux near Paris, France; or to his Agents, Messrs. SILBERRAD AND SONS, 15, Harp Lane, Great Tower Street, London, E.C., where CATALOGUES and Trade Lists may be had on application.

GARDEN LAWNS.

These may now be greatly improved by sowing

SUTTON'S MIXTURE

OF FINE

GRASSES AND CLOVERS

FOR MAKING NEW OR IMPROVING OLD

GARDEN LAWNS, CROQUET GROUNDS, &c.,

Consisting of the finest growing varieties, which will produce a beautiful evergreen sward in a very short time.

Sow 3 bushels or 60 lb. per acre, or 1 gallon to 6 rods (or perches).

For improving Lawns already in turf, sow 20 lb. per acre.

Price 1s. 3d. per lb., 22s. 6d. per Bushel.

Instructions on the Formation and Improvement

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GARDEN LAWNS, CROQUET GROUNDS, &c.,

Gratis and Post Free.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

Four Choice and Handsome Orchids.

MR. WILLIAM BULL offers:—

AERIDES FIELDINGII (FOXBRUSH),
DENDROBIUM BIGIBBUM,
CYMBIDIUM ERURNEUM,
CŒLOGYNE BARBATA,

at the extremely low price of 10s. 6d. each.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

ROSES for Coming Autumn.—Standards, Half Standards, and Dwarfs respectively, £5, £4, and £3 per 100.

CHOICE CONIFERS.

YEWS, Irish, Golden, 1 to 2½ feet, 10s. to 40s. per dozen.
,, English, Golden, nice plants, 9s. to 15s. per dozen.
CYPRESS, Knaphill, 1 foot, 40s. per 100.
RETINOSPORA PLUMOSA AUREA, nice plants, 9s. to 12s. per dozen.
THUJA AUREA, 12 to 15 inches, bushy, £5 per 100.
GREENHOUSE PALMS, in choice variety, in 7 and 8 inch pots, 2s. 6d. to 3s. 6d. each.

Usual discount to the Trade.

GRANT AND CO., Park Nursery, Portadown, Ireland.

VEGETABLE PLANTS.

BRUSSELS SPROUTS and DRUMHEAD SAVOY, 3s. 6d. per 1000.
PERKINS' CHAMPION BROCCOLI, the best for Main Crop, 5s. per 1000.
PERKINS' LATE PERFECTION BROCCOLI, the finest late sort in cultivation, 5s. per 1000.
THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

LEE'S NEW VIOLET ODORATISSIMA.

For Description, Opinions of the Press, &c., see *Gardeners' Chronicle* for April 6. Plants per doz., 18s.; per half doz., 10s. 6d.; per quarter doz., 6s. The usual allowance to the Trade when a dozen or upwards are ordered. Although they are good plants, yet, except in large quantities, they can be sent by post, and by having them at once a season will be gained. At planting merely dip the roots in water (this is preferable to watering after planting), shade first day, and they are quite safe.

GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

A. DE HAENE (late A. Dalliere), NURSERYMAN, Ghent, Belgium.—Immense stock of CAMELLIAS and AZALEAS with buds (100 different varieties), from £5 to £8 per 100; 200,000 PALMS in store-pots, such as Areca lutescens and rubra lutescens, Cocos Weddelliana, Euterpe edulis, Geonoma Schottiana and others, Glaziova insignis, Latania borbonica, Pandanus, Phœnix, &c. Palms and other plants for Decorative Purposes, such as Aralia Sieboldi, and variegated Arecas, Ficus, Latania, Euterpe, &c., from 1s. to 5s. each, and upwards.

New Ferns, &c.

A. STANSFIELD AND SON beg to offer the following fine Novelties:—

ADIANTUM CAPILLUS-VENERIS CORNUBIENSE (figured in the *Gardeners' Chronicle* for April 28, 1877), good plants, 10s. 6d. each.
POLYSTICHUM TRIANGULUM XIPHIOIDES, 5s. to 42s. each.
WOODWARDIA RADICANS BROWNII, the best crested form, 5s. to 42s. each.
WOODWARDIA RADICANS BURGESIANA, elegantly laciniate, 7s. 6d. to 42s. each.
WOODWARDIA RADICANS CRISPA, 10s. 6d. to 63s. each.
,, RADICANS HETEROPHYLLA, 5s. each.

Also the following, Prices on application:—

PTERIS ARGUTA POLYDACTYLA.
,, ARGUTA STANSFIELDII.
,, ARGUTA ROTUNDATA.

See figures in *Gardeners' Chronicle* for March 23, 1878.

General FERN CATALOGUE post-free for two stamps.

Vale Nurseries, Todmorden.

SPECIAL OFFER to the TRADE of HARDY BULBS and FLOWER ROOTS.

Camassia esculenta, 20s. per 100.	Muscari comosum monstrosum, 5s. per 100.
Delphinium nudicaule, 17s. per 100.	Narcissus biflorus, 4s. per 100.
Dielytra spectabilis, strong plants, 25s. per 100.	,, odorus (Campernel Jonquil), 4s. per 100.
Erythronium dens-canis, fl. roseo, 7s. per 100.	,, poeticus, fl. pl., 5s. per 100.
Hemerocallis fulva, 12s. per 100.	,, Tazetta aureus (Grand Soleil d'Or), 9s. per 100.
Iris cristata, 17s. per 100.	,, telamonius, fl. pl., 7s. per 100.
,, germanica, the best named varieties, 13s. per 100.	Orchis maculata, home grown, 10s. per 100.
,, pumila azurea, 17s. per 100.	Ornithogalum splendens, 3s. per 100.
Lilium auratum, home-grown bulbs, 2½ in. in diam., 100s. per 100; 2½ to 2 in., 125s.; 2 in., 167s.; and 2 to 3½ in., 209s.	Platycodon grandiflorum, fl. cœruleo (Campanula grandiflora), 17s. per 100.
,, bulbiferum, 42s. per 100.	Polygonatum multiflorum (Convallaria multiflora), 9s. per 100.
,, Martagon, 20s. per 100.	Saxifraga granulata, fl. pl., 34s. per 100.
,, tigrinum, 5s. per 100.	Scilla hyacinthoides cœrulea, 5s. per 100.
,, ,, fl. pl., 67s. per 100.	,, patula albida, 7s. per 100.
,, ,, splendens, 84s., per 100.	,, patula atro-cœrulea, 7s per 100.
,, umbellatum atro-sanguineum, 20s. per 100.	Smilacina bifolia (Convallaria), 9s. per 100.
,, ,, grandiflorum, 25s. per 100.	Spiræa filipendula, fl. pl., 9s. per 100.
,, ,, speciosum superbum, 34s. per 100.	Spiræa japonica (Hoteia), 14s. per 100, £5 17s. per 1000.
Muscari botryoides, 4s. per 100.	Triteleia uniflora, 3s. per 100.

FLOWER ROOTS for COLD FRAMES.

Canarina campanula, 34s. per 100.	Cyclamen persicum, fl. roseo, 25s. to 67s. per 100.

All grown in pots.

HARDY PERENNIALS.

Spiræa Aruncus, 25s. per 100.	Spiræa palmata, 84s. per 100.
,, japonica (Hoteia), 14s. per 100, £5 17s. per 1000.	,, elegans, 8s. each, six plants, £2; twelve plants, £3 10s.

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK,
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

ROYAL BOTANIC SOCIETY.

THIRD SUMMER EXHIBITION, JULY 10.

AWARDS of PRIZES.

CUT FLOWERS.

ROSES, 72 varieties, single trusses.
1st, Messrs. Paul & Son, Cheshunt.
2d, Messrs. Cranston & Mayos, Hereford.
3d, Mr. John Keynes, Salisbury.
Extra, Mr. George Cooling, Bath.

ROSES, 48 varieties, 3 trusses.
1st, Messrs. Cranston & Mayos.
2d, Messrs. Paul & Son.
3d, Mr. John Keynes.
Extra, Messrs. James Mitchell & Sons, Piltdown, Uckfield.

ROSES, 24 varieties, 3 trusses. (Amateurs.)
1st, Mr. James Davis, Wilton, Wilts.

ROSES, 24 varieties, 3 trusses. (Nurserymen.)
1st, Messrs. Paul & Son.
2d, Messrs. Cranston & Mayos.
3d, Mr. Charles Turner, Slough.
Extra, Mr. Henry Frettingham, Beeston, Nottingham.
Extra, Mr. John Keynes.
Extra, Mr. W. Rumsey, Waltham Cross.
Extra, Messrs. James Mitchell & Sons.

ROSES, 24 varieties, single trusses. (Open.)
1st, Mr. Charles Turner.
2d, Mr. Henry Frettingham.
Equal 3d, { Mr. John Keynes. / Messrs. Cranston & Co.

ROSES, Yellow, 12 trusses, one variety.
1st, Mr. Henry Frettingham. | 2d, Mr. John Keynes.

ROSES, 12 trusses, Red, one variety.
1st, Messrs. Cranston & Mayos. | 3d, Messrs. Paul & Son.
2d, Mr. John Keynes. |

ROSES, White, 12 trusses, one variety.
1st, Messrs. Paul & Son. | 3d, Mr. Thomas Jowitt.
2d, Mr. J. Keynes. |

ROSES, basket, one variety.
1st, Messrs. Paul & Son.

ROSES, basket, mixed colours.
1st, Messrs, Paul & Son. | 2d, Mr. William Rumsey.

ROSES, 12 New, of 1874, or since. (Nurserymen).
1st, Messrs. Paul & Son. | 3d, Messrs. Cranston & Mayos.

ROSES, Collection of Climbing Varieties.
1st, Messrs. Paul & Son.

CARNATIONS, 24 varieties. (Open.)
1st, Mr. Charles Turner.
2d, Mr. J. Douglas, Gr. to F. F. Whitbourne, Esq., Loxford Hall.
3d, Mr. Henry Hooper, Bath.

PICOTEES, 24 varieties.
1st, Mr. Charles Turner. | 3d, Mr. Henry Hooper.
2d, Mr. James Douglas.

HARDY HERBACEOUS FLOWERS, 24 trusses.
1st, Mr. Edward Morse, Epsom.
2d, Mr. George Wheeler.
3d, Mr. W. F. Roberts, Gr., Peterborough House, Fulham.

STOVE and GREENHOUSE FLOWERS, 24 trusses.
Equal 1st, { Mr. Edward Morse, Epsom. / Mr. J. Douglas.
3d, Mr. James Bolton, Gr. to W. Spottiswoode, Esq., Sevenoaks.

GROUP or BASKET of WILD FLOWERS from a definite area of 5 miles' radius.
1st, Mr. Walter Hills, Gr. to Mrs. J. S. Wells, Frittleworth.
2d, Mr. F. Tyler, The Gardens, Welford Park, Newbury.
3d, Mr. G. A. Bethell, Slangham, Sussex.

MISCELLANEOUS.

Extra Prizes were awarded as under:—
Mr. B. S. Williams, Holloway, for 2 Collections of Foliage and Flowering Plants.
Messrs. E. G. Henderson & Sons, for 2 Collections of Plants and 1 of British Ferns.
Messrs. Ivery & Son, Dorking, for a Collection of British Ferns.
Messrs. Osborne & Son, for a Collection of Plants.
Messrs. Laing & Co., for a Collection of Plants.
Messrs. Carter & Co., for a Collection of Plants.
Mr. Cannell, Swanley, Kent, for a Collection of Cut Flowers.
Messrs. William Paul & Son, for a Collection of Cut Roses.
Mr. Henry Hooper, Bath, for a Collection of Carnations and Picotees.
Messrs. Cutbush & Son, for a Collection of Plants.
Mr. Charles Turner, for a Collection of Verbenas.

FLORICULTURAL CERTIFICATES of MERIT.
Mr. C. Turner, for Rose Harrison Weir, for Pink Rosa Bonheur, for yellow Picotee Lady Roseberry, Picotee Sultana, for yellow Picotee Ne Plus Ultra.
Messrs. Paul & Son, for Rose Countess of Rosebery.

BOTANICAL CERTIFICATE of MERIT.
Messrs. E. G. Henderson & Son, for Polypodium Hendersoni.

FRUIT.

COLLECTION of 6 Dishes.
1st, Mr. C. Ross, Gr. to C. Eyre, Esq., Welford Park, Newbury.
2d, Mr. T. Coomber, Gr. to F. A. Rolles, Esq., The Hendre, Monmouth.
3d, Mr. G. Cornhill, Gr. to J. S. Virtue, Esq., Oatlands Park.
Extra, Mr. W. Robbins, Gr. to E. Dyke Lee, Esq., Aylesbury.

COLLECTION of 9 Dishes.
1st, Mr. G. T. Miles, Gr. to Lord Carrington.

PINE-APPLES, 2 Queens.
1st, Mr. J. Hepper, Gr. to C. O. Ledward, Esq., The Elms, Acton.
2d, Mr. J. Dinsmore, Gr. to T. F. Blackwell, Esq.
3d, Mr. G. Ward, Gr. to T. N. Miller, Esq., Bishop Stortford.
Extra, Mr. J. Akehurst, Gr. to L. Copestake, Esq., The Grove, Highgate.

PINE-APPLE, 1 Queen.
1st, Mr. J. Dinsmore.
2d, Mr. W. Polley, Gr. to Henry Rogers, Esq., Oatlands Park.
3d, Mr. T. Bailey, Gr., Shardeloes, Amersham.
Extra, Mr. G. Ward.

PINE-APPLE, any other Variety.
1st, Mr. W. Davis, Gr. to W. F. Booker, Esq., Velindra, Cardiff. | 3d, Mr. J. Hepper.
2d, Mr. G. T. Miles.

MELONS, 2 Green, 2 Scarlet.
1st, Mr. H. Harvey, Wooley Park, Wantage.
2d, Mr. G. Murrell, Gr. to A. R. Allen, Esq., Prittlewell.
3d, Mr. James Bolton.

1 MELON, Greatest Weight.
1st, Mr. T. Bailey. | 3d, Mr. H. Ward, Gr. to the
2d, Mr. W. Robins. | Earl of Radnor.

GRAPES, Basket, Black, 12 lb.
1st, Mr. P. Edwards, Gr. to Mrs. Tristram, Liphook, Hants.
2d, Mr. Philip Feist, Gr. to R. J. Ashton, Esq., Staines.
3d, Mr. G. Osborn, Finchley.
Extra, Mr. J. Peed, Roupell Park Nursery, Norwood.

GRAPES, Basket, White, 12 lb.
1st, Mr. J. Douglas. | 2d, Mr. Philip Feist.
3d, Mr. Mowbray, Gr. to the Earl of Leven, Fulmer.
Extra, Mr. Jas. Fry, Gr. to L. J. Baker, Esq., Haydon Hall, Eastcote.
Extra, Mr. H. Harvey.

GRAPES, 3 Bunches, Black Hamburgh.
1st, Mr. P. Edwards.
2d, Mr. R. Prince, Gr. to F. Gretton, Esq., Bladon House, Burton.
3d, Mr. P. Feist.
Extra, Mr. W. Robins.

GRAPES, 3 Bunches Black, or any other variety.
1st, Mr. Walter Hills. | 3d, Mr. James Bolton.
2d, Mr. W. Mowbray.

GRAPES, 3 Bunches, Muscat of Alexandria.
1st, Mr. J. Douglas. | 3d, Mr. G. Cornhill.
2d, Mr. James Fry.

GRAPES, 3 bunches White, any other kind.
1st, Mr. W. Mowbray.
2d, Mr. P. Kay, Finchley.
3d, Mr. G. Masters, Gr. to F. Day, Esq., Oatlands Park.

PEACHES, 2 dishes.
1st, Mr. G. Cornhill.
2d, Mr. C. Ross.
3d, Mr. Burnett, Gr., The Depedene, Dorking.

NECTARINES, 2 dishes.
1st, Mr. J. Bashford, Gr. to H. Brenchley, Esq., Chalton House, Staplehurst.
2d, Mr. W. Robins.
3d, Mr. G. Halliday, Gr. to J. Morris, Esq., Castle Hill, Bletchingly.

CHERRIES, 2 dishes Black.
1st, Mr. T. Bailey. | 3d, Mr. G. T. Miles.
2d, Mr. Burnett.

CHERRIES, 2 dishes, white or red.
1st, Mr. James Douglas.
2d, Mr. C. Ross.
3d, Mr. T. Jones, Gr. Elvetham Park, Winchfield.

STRAWBERRIES, 2 dishes.
1st, Mr. James Douglas.
2d, Mr. John Harwood, Gr. to J. L. Lovibond, Esq., Beckenham.
3d, Mr. Kaile, Burton Lodge, Woking.

FIGS, 2 dishes.
1st, Mr. T. Jones.

MISCELLANEOUS.—EXTRA PRIZES.

To Mr. W. Robins for a Collection of Melons.
To Mr. J. Douglas for a Collection of Tomatos.

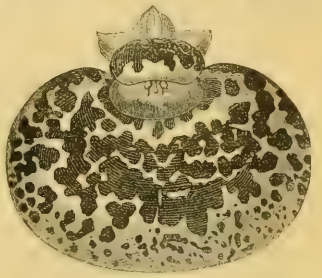
B. S. WILLIAMS'

NEW AND CHOICE

FLOWER SEEDS FOR 1878,

Post Free. Per packet—*s. d.*

AURICULA, finest show varieties ... 1 6
„ Alpine, finest mixed 1 0
BEGONIA HYBRIDA, finest mixed ... 2 6



CALCEOLARIA, Williams' Superb Strain
per packet, 5*s.*, 3*s. 6d.*, 2*s. 6d.*, and 1 6

From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice
Strain .. per packet, 5*s.*, 3*s. 6d.*, 2*s. 6d.*, and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA,
Williams' Superb Strain, red, white, or mixed, per packet, 5*s.*, 3*s. 6d.*, 2*s. 6d.* and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA
COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

SOLANUM HYBRIDUM, "Empress"
(New) .. .. per packet 2 6

ILLUSTRATED GENERAL,
AND ALSO
NEW PLANT CATALOGUES,
Now ready, post-free to all applicants.

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

ROYAL HORTICULTURAL SOCIETY.

GREAT PROVINCIAL SHOW, PRESTON,

JULY 10, 11, 12, and 13.

AWARDS OF THE JUDGES.

CLASS 1.—16 STOVE and GREENHOUSE PLANTS, distinct, 8 in bloom and 8 with fine foliage. (Open.)
1st, J. F. G. Williams, Esq., Henwick Grange, Worcester (E. Tudgey, Gr.) £10
2d, Messrs. E. Cole & Sons, Withington, Manchester, £20.
3d, The Preston Nursery and Pleasure Gardens Company, Preston (W. Troughton, Manager), £10.

CLASS 2.—BRIDAL BOUQUET. (Open)
1st, Messrs. Turner Bros., St. John's Market, Liverpool.
2d, Robert Horsfall, Esq., Grassendale Priory, Liverpool (W. Coldbrook, Gr.)
3d, Messrs. W. Heath & Son, College Nursery, Cheltenham.

CLASS 3.—BALL-ROOM BOUQUET. (Open.)
1st, John Mosley, Esq. | 2d, Messrs. Turner Bros.
3d, Messrs. Pope & Smith.

CLASS 4.—12 STOVE and GREENHOUSE PLANTS, in bloom, distinct. (Amateurs.)
1st, J. F. G. Williams, Esq., (E. Tudgey, Gr.), £20.

CLASS 5.—6 STOVE and GREENHOUSE PLANTS, in bloom, distinct. (Amateurs.)
1st, Mr. Edward Pilgrim, Fern Lawn, Cheltenham, £10.

CLASS 6.—12 MISCELLANEOUS STOVE and GREENHOUSE PLANTS, distinct, 6 to be in bloom. (Amateurs.)
1st, Mr. Edward Pilgrim, £12.
2d, Miss Fiarington, Warden Hall, Preston, £10.
3d, William Birley, Esq., The Larches, Preston (J. Newton, Gr.), £7.

CLASS 7.—12 EXOTIC ORCHIDS, in bloom, distinct. (Amateurs.)
1st, R. B. Dodgson, Esq., Blackburn (T. Osman, Gr.), £20.
2d, Dr. Ainsworth, Higher Broughton, Manchester (E. Mitchell, Gr.), £15.

CLASS 9.—9 FINE-FOLIAGED PLANTS, distinct. (Amateurs.)
1st, R. B. Dodgson, Esq., (T. Osman, Gr.), £12.
2d, Sir Wilfred Lawson (J. Hammond, Brayton, Carlisle, Gr.), £8.
3d, J. F. G. Williams, Esq., (E. Tudgey, Gr.), £7.

CLASS 10.—6 FINE-FOLIAGED PLANTS, distinct. (Amateurs.)
1st, Mr. Edward Pilgrim, £9.
2d, John Forshaw, Esq., Moor Park, Preston, £7

CLASS 11.—6 ERICAS in bloom, distinct. (Amateurs.)
1st, Mr. Edward Pilgrim, £6.
2d, J. F. G. Williams, Esq., (E. Tudgey, Gr.), £4.

CLASS 12.—9 EXOTIC FERNS, distinct. (Amateurs.)
1st, Mrs. Birchall, Ribbleton (W. R. Williams, Gr.), £12.
2d, Mr. David Chapman, £8.

CLASS 13.—6 EXOTIC FERNS, distinct. (Amateurs.)
1st, Mr. E. Pilgrim, £6.
2d, R. B. Dodgson, Esq., (T. Osman, Gr.), £4.
3d, J. F. G. Williams (E. Tudgey, Gr.), £3.

CLASS 14.—6 CROTONS, distinct. (Amateurs.)
1st, Edward Pilgrim, Esq., £6.
2d, Mr. J. Hammond, Gr. to Sir W. Lawson, £4.

CLASS 14 A.—6 NEW and RARE PLANTS. (Amateurs.)
1st, Edward Pilgrim, Esq., £6. | 2d, Mr. J. Hammond, £4.
3d, Hon. A. C. C. Maxwell, £3.

CLASS 15.—12 BRITISH FERNS, distinct. (Amateurs.)
1st, Thomas Bolton, Esq., Fern Cottage, Warton, near Carnforth, £6.
2d, E. J. Lowe, Esq., £4.
3d, R. B. Dodgson, Esq. (T. Osman, Gr.), £3.

CLASS 16.—6 BRITISH FERNS, distinct. (Amateurs.)
1st, Mr. Edward Pilgrim, £3.
2d, Mr. Joseph Stewardson, £2.
3d, Colonel Cross, Red Scar, Preston (R. Gould, Gr.), £1.

CLASS 17.—3 PALMS, distinct. (Amateurs.)
1st, Mr. J. Hammond, £4. | 2d, Mr. Edward Pilgrim, £3.
3d, Miss Fiarington, £2.

CLASS 18.—2 TREE FERNS (not less than 4 feet stems).
1st, Mr. David Chapman, £4.

CLASS 19.—6 SHOW PELARGONIUMS, in bloom, distinct. (Amateurs.)
2d, William Birley, Esq. (J. Newton, Gr.), £3.

CLASS 21.—6 ZONAL PELARGONIUMS, in bloom, distinct. (Amateurs.)
1st, William Birley, Esq., £4. | 2d, J. B. Jones, Esq. £3.
3d, Mr. David Chapman, £2.

CLASS 23.—6 FUCHSIAS, distinct, in bloom. (Amateurs.)
1st, T. Dodd, Esq., Swallow House, Penwortham, £4.

CLASS 24.—6 TUBEROUS BEGONIAS, distinct, in flower. (Amateurs.)
1st, J. B. Jones, Esq., £3.

CLASS 25.—9 GLOXINIAS, in bloom, distinct. (Amateurs.)
1st, Colonel Cross, £3.

CLASS 27.—6 ADIANTUMS, distinct. (Amateurs.)
1st, R. B. Dodgson, Esq. (T. Osman, Gr.), £4.
2d, Mrs. Birchall (W. R. Williams, Gr.), £3.
3d, John Forshaw, Esq., £2.

CLASS 28.—12 SUCCULENTS, distinct. (Amateurs.)
1st, John Atherton, Esq., £3. | 2d, J. B. Jones, Esq., £2.

CLASS 29.—6 CALADIUMS, distinct. (Amateurs.)
1st, Edmund Birley, Esq., £3.

CLASS 30.—6 DRACÆNAS, distinct. (Amateurs.)
1st, Mr. J. Hammond, £3.
2d, R. B. Dodgson Esq. (T. Osman, Gr.), £2.
3d, Joseph Harding, Esq., Moor Park, Preston, £1.

CLASS 33.—24 ROSES, distinct, single blooms. (Amateurs.)
1st, Hon. A. Upton (R. Craig, Gr.), £3.
2d, Mr. Henry Wilson, Brentwood, Cheadle, £2.
3d, Mr. William Warburton, Mytton Hall, Whalley, £1 10s.

CLASS 34.—12 ROSES, distinct, single blooms. (Amateurs.)
1st, John Taylor, Esq., Malpas, Cheshire, £1 10s.
2d, The Right Hon. Lord Winmarleigh, £1.
3d, Mr. Thomas Bolton, 10s.

CLASS 35.—Basket of ROSES, with Rose foliage only. (Amateurs.)
1st, Henry Wilson, Esq., £1 10s.

CLASS 37.—GROUP of 100 MISCELLANEOUS STOVE and GREENHOUSE PLANTS, space not to exceed 250 superficial feet. (Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company, £25
2d, Messrs. F. & A. Dickson & Sons, £20

CLASS 38.—12 NEW and RARE PLANTS, not in commerce. (Nurserymen)
1st, Mr. William Bull, Chelsea, £15
2d, Mr. B. S. Williams, £10

CLASS 39.—12 NEW and RARE PLANTS, sent out in 1876, 1877, and 1878. (Nurserymen.)
1st, Mr. William Bull, £12 | 3d, Messrs. Wm. Rollisson & Sons, Tooting, London, £6
2d, Mr. B. S. Williams, £8

CLASS 40.—COLLECTION of 100 MISCELLANEOUS HARDY PLANTS, in or out of flower, space not to exceed 250 superficial feet. (Nurserymen.)
1st, Messrs. W. Barron & Son, Elvaston Nurseries, Derby, £15
2d, Messrs. F. & A. Dickson & Son, £10
3d, The Preston Nursery and Pleasure Gardens Company, £6

CLASS 41.—12 STOVE and GREENHOUSE PLANTS, in bloom, distinct. (Nurserymen.)
1st, Messrs. E. Cole & Sons, £15
2d, The Preston Nursery and Pleasure Gardens Company, £10

CLASS 42.—12 EXOTIC ORCHIDS. (Nurserymen.)
1st, Mr. B. S. Williams

CLASS 43.—6 EXOTIC ORCHIDS, (Nurserymen.)
1st, Messrs. Wm. Rollisson & Sons

CLASS 44.—9 FOLIAGED PLANTS, distinct. (Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company, £10

CLASS 45.—3 TREE FERNS, distinct, with stems not less than 5 feet high. (Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company, £9

CLASS 46.—6 ERICAS, in bloom, distinct. (Nurserymen.)
2d, Messrs. E. Cole & Sons, £4
3d, The Preston Nursery and Pleasure Gardens Co., £3.

CLASS 47.—12 EXOTIC FERNS, distinct. (Nurserymen.)
1st, Messrs. E. Cole & Sons, £10
2d, The Preston Nursery and Pleasure Gardens Company, £8

CLASS 48.—12 DRACÆNAS, distinct. (Nurserymen.)
1st, Messrs. Wm. Rollisson & Son, £9
2d, Mr. B. S. Williams, £7
3d, The Preston Nursery and Pleasure Gardens Company, £5

CLASS 49.—6 CROTONS, distinct. (Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company, £6
2d, Mr. B. S. Williams, £4 | 3d, Messrs. E. Cole & Sons, £3

CLASS 50.—20 CONIFERS and TAXADS, distinct, the specimens not to exceed 6 feet in height. (Nurserymen.)
1st, Messrs. W. Barron & Son, £15
2d, Messrs. F. & A. Dickson & Sons, £10

CLASS 52.—6 TUBEROUS BEGONIAS, in flower, distinct. (Nurserymen.)
1st, Messrs. John Laing & Co., Stanstead Park, Forest Hill, London, £3.

CLASS 53.—9 SHOW PELARGONIUMS, in flower, distinct. (Nurserymen.)
1st, Mr. C. Rylands, Ormskirk, £6.

CLASS 54.—9 FANCY PELARGONIUMS, in flower, distinct. (Nurserymen.)
1st, Mr. C. Rylands, £6.

CLASS 55.—9 ZONAL PELARGONIUMS, in flower, distinct. (Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company, £6.
2d, Mr. C. Rylands, £4.

CLASS 56.—72 ROSES, distinct, single. (Nurserymen.)
1st, Messrs. Paul & Son, The Old Nurseries, Cheshunt, £8.
2d, Mr. G. Davidson, Whitecross Nurseries, Hereford, £6.

CLASS 57.—48 ROSES, distinct, single flowers. (Nurserymen.)
1st, Mr. George Prince, Oxford, £6.
2d, Mr. Wm. Corp, Oxford, £4.
Messrs. F. & A. Dickson & Sons, £3.

CLASS 58.—24 ROSES, distinct, single flowers. (Nurserymen).
2d, Mr. C. Rylands, £2.

CLASS 59.—A basket of 12 STOVE and GREENHOUSE FLOWERS, distinct. (Nurserymen.)
1st, Messrs. E. Cole & Sons, £3.
2d, Messrs. F. & A. Dickson, £2.
3d, Messrs. Turner Brothers, £1.

CLASS 59A.—MISCELLANEOUS. Any Plants or Flowers not specially mentioned in foregoing Classes. (Nurserymen.)
1st, Messrs. James Dickson & Sons, Chester, £5.
2d, Mr. H. Boller, South Row, Kensal New Town, London, W., £3.

FRUIT.

CLASS 60.—COLLECTION of FRUIT. (Open.)
1st, Mr. William Coleman, Eastnor Castle, (Gr. to Earl Somers), £15
2d, The Right Hon. Lord Bagot (T. Bannerman, Gr.), £10.

CLASS 61.—GRAPES, MADRESFIELD COURT, 3 bunches. (Open.)
1st, Thomas Barnes, Esq., The Quinta, Chirk, £3.
2d, The Right Hon. Lord Bagot, £2.
3d, Mr. John Cowan, Garston, Liverpool, £1.

CLASS 62.—GRAPES, any black kind, excluding Madresfield Court and Black Hamburgh, 3 bunches. (Open.)
1st, Thomas Barnes, Esq. (J. Lowdon, Gr.), £3.
2d, The Right Hon. Lord Bagot, £2.

CLASS 63.—GRAPES, any white kind, excluding Muscat of Alexandria, 3 bunches. (Open.)
1st, The Right Hon. Lord Bagot, £3.
2d, Mr. William Warburton, £2.
3d, The Right Hon. Viscount Boyne (W. Boddey, Gr.), £1.

CLASS 64.—GRAPES, basket, not less than 12 lb. (Open.)
1st, R. Reeves, Esq., Ashton's Green, St. Helens (J. Meredith, Gr.), £3.
2d, James Watts, Esq., Abney Hall, Cheadle (R. Mackellar, Gr.), £2.
3d, Mr. John Cowan, £1.

CLASS 65.—PINE APPLE QUEEN, single fruit. (Open.)
1st, Mrs. Vivian, Swansea (J. Harris, Gr.), £2.
2d, Mr. W. Pratt, Hawkestone Gardens, Salop, £1.

CLASS 67.—STRAWBERRIES, collection of not less than 10 varieties. (Open.)
1st, Mr. W. Pratt, £5.
2d, C. S. A. Thelluson, Esq. (W. Chuck, Gr.) £3.
3d, Mr. William Mansley, £2.

CLASS 68.—STRAWBERRIES, 2 dishes, distinct varieties. (Open.)
1st, Earl Beauchamp, Madresfield Court, (W. Cox, Gr.), £2.
2d, Earl Somers (W. Coleman, Gr.), £1.
3d, Mr. John Taylor, Malpas, Cheshire, 10s.

CLASS 69.—STRAWBERRIES, single dish. (Open.)
1st, Earl Beauchamp (William Cox, Gr.), £1.
2d, Mr. John Woodhouse, Sen., 15s.
3d, C. S. A. Thelluson, Esq. 10s.

CLASS 71.—FIGS, single dish. (Open.)
1st, Earl Somers, £1.
2d, The Right Hon. Earl of Crawford and Balcarres (A. Jamieson, Gr.), 15s.

CLASS 72.—MELON, single fruit. (Open.)
1st, The Hon. A. C. C. Maxwell (J. McIntyre, Gr.), £1.
2d, The Right Hon. Earl of Crawford and Balcarres, 15s.
3d, William Blinkhorn, Esq. (J. Smith, Gr.), 10s.

CLASS 73.—MISCELLANEOUS FRUITS not mentioned in Schedule.
1st, Mr. J. McIndoe, £1.

VEGETABLES.

CLASS 74.—COLLECTION of VEGETABLES, 8 distinct kinds
1st, The Right Hon. Lord Carrington, Wycombe Abbey (G. T. Miles, Gr.), £6.
2d, Mr. Richard Walmsley, £4.
3d, R. B. W. Baker, Esq., £3.

CLASS 75.—PEAS, 3 distinct kinds, ½ peck each.
1st, Sir T. Edwards Moss, Bart. (W. Hinds, Gr.), £3.
2d, Mr. W. R. Winch, £2. | 3d, Mr. William Mansley, £1.

CLASS 76.—POTATOS, 3 distinct kinds, 9 tubers of each.
1st, R. B. W. Baker, Esq., £3. | 3d, Lord Carrington, £1.
2d, Mr. John Taylor, £2.

CLASS 77.—12 ONIONS.
1st, Messrs. E. Smith & Son, £1 10s.
2d, Lord Carrington, £1.
3d, Mr. John Woodhouse, Jun., 10s.

CLASS 78.—12 TOMATOS.
1st, Sir Thomas Edwards Moss, £1 10s.
2d, Lord Carrington, £1.
3d, Earl Beauchamp (W. Cox, Gr.), 10s.

CLASS 79.—CUCUMBERS, 1 brace.
1st, Mr. Edmund Birley, £1. | 3d, Colonel Cross, 10s.
2d, Mr. T. B. Dalby, 15s.

ROYAL HORTICULTURAL SOCIETY.

AWARDS OF THE JUDGES—(*Continued.*)

CLASS 80.—SALADS, 6 varieties, distinct.
1st, Messrs. Edward Smith & Son, £4.
2d, Mr. H. Holder, £3. | 3d, Mr. J. Myerscough, £2.

CLASS 81.—MISCELLANEOUS. Any Vegetables not specially mentioned in foregoing classes.
1st, Earl Beauchamp, £1.
2d, Lord Carrington, 15s. | 3d, Mr. R. B. W. Baker, 10s.

IMPLEMENTS.

CLASS 2.—GARDEN WATERBARROW.
1st, Messrs. William Rollisson and Sons, Silver Medal.

CLASS 10.—Best STAND of HORTICULTURAL APPLIANCES.
1st, Messrs. R. Halliday & Co., Manchester, Silver Medal.

CLASS 11.—Best EXHIBITION of HORTICULTURAL BUILDINGS and STRUCTURES.
1st, Messrs. R. Halliday & Co., Manchester, Gold Medal.

MR. BULL'S CUPS.

CLASS A.—(Private Growers.)
1st, Mr. J. Hammond, Gr. to Sir W. Lawson.
2d, J. F. G. Williams, Esq. (E. Tudgey, Gr.)

CLASS B.—(Nurserymen.)
1st, Mr. B. S. Williams, London.

CLASS C.—(Private Growers.)
2d, Hon. A. C. C. Maxwell.

CLASS D.—(Nurserymen.)
1st, The Preston Nursery and Pleasure Gardens Company.

MESSRS. CARTER'S PRIZES.

CLASS E.—For the best 13 DISHES of VEGETABLES.
1st, Lord Carrington, £10.
2d, Mr. John Richardson, Boston, £7.
3d, Lord Beauchamp (William Cox, Gr.), £4.
4th, Mr. W. Pratt, £2.
5th, Sir Thomas Edwards Moss, £1 10s.
6th, Mr. Henry Marriott, £1.

CLASS F.—For the best 3 DISHES of PEAS, viz., Carter's Little Wonder Pea, Culverwell's Telegraph Pea, Carter's Challenger Pea.
1st, Mr. John Richardson, £5 5s.
2d, Lord Carrington, £4 4s.
3d, Mr. H Marriott, £3 3s.
4th, Mr. Thomas Thompson, £2 2s.
5th, Mr. Richard Thompson, £1 1s.

CLASS G.—For the best FRUIT of CARTER'S KHIVA MELON.
1st, Mr. W. R. Winch, £1 10s. | 3d, Miss Ffarrington, 15s.
2d, Lord Carrington, £1 5s. | 4th, Mr. R. B. W. Baker, 10s. 6d.

CLASS H.—For the best FRUIT of CARTER'S CREAM PINE MELON.
1st, Mr. W. R. Winch, £1 10s. | 2d, Lord Carrington, £1 5s.

MESSRS. SUTTON & SON'S PRIZES.

CLASS I.—For COLLECTION of VEGETABLES, 12 varieties, including Sutton's Duchess of Edinburgh Pea, Giant Emerald Marrow Pea, Canadian Wonder Bean, and Sutton's Broad Windsor Bean.
1st, Lord Beauchamp (Gr., William Cox).
2d, Mr. R. B. W. Baker.

CLASS J.—For COLLECTION of MELONS and CUCUMBERS, three distinct kinds of each.
1st, Lord Beauchamp (Gr., Wm. Cox), Gold Medal and £3 3s.
2d, Miss Ffarington, Silver Medal and £2 2s.
3d, Marquis of Cholmondeley (J. Malcolm, Gr.), Bronze Medal and £1 1s.

MESSRS. VEITCH'S PRIZES.

CLASS K.—For the best COLLECTION of FRUIT, in 10 distinct kinds.
1st, Earl Somers (Gr., W. Coleman), £15.

CLASS M.—For the best three BUNCHES of MUSCAT of ALEXANDRIA GRAPES.
1st, Lord Bagot, £6.
2d, A. Smollett, Esq. (Gr., Mr. McConochie), £4.
3d, B. Shaw, Esq., Cowick Hall (A. Ferguson, Gr.), £2.

CLASS N.—For the best 3 BUNCHES of BLACK HAMBURGH GRAPES.
1st, Earl Somers, £6.
2d, J. F. Norris, Esq. (G. Marsh, Gr.) £4.
3d, R. Frince, Esq. (James Lowdon, Gr.), £2.
Extra, T. Barnes, Esq.

CLASS O.—For the best 4 BUNCHES of GRAPES, distinct kinds, 1 bunch of each.
1st, T. Barnes, Esq., £6. | 2, Lord Bagot, £4.

CLASS P.—For the best 3 PINE-APPLES.
1st, Mr. C. O. Ledward (J. Hepper, gr.), £6.
2d, Mrs. Vivian (James Harris, Gr.), £4.
3d, Mr. John Austen, £2.

CLASS Q.—For the best 6 FRUIT of Peach, one kind.
1st, Earl of Crawford and Balcarres, £3.
2d, Earl Somers (W. Coleman, Gr.), £2.
3d, Mr. W. R. Winch, £1.
Extra, Sir Thomas Edwards-Moss.

CLASS R.—For the best 6 FRUITS of NECTARINES, one kind.
1st, Mr. John Edmonds, £3.
2d, Earl of Crawford and Balcarres, £2.
3d, Lord Bagot, £1.
Extra Prize, J. Austen, Esq.

PRESTON NURSERY AND PLEASURE GARDENS COMPANY'S PRIZES.

CLASS S.—3 STOVE and GREENHOUSE PLANTS, in flower, distinct.
1st, Mr. John Forshaw, £2.
2d, William Birley (Gr., George J. Newton), £1 5s.
3d, Mr. Joseph Harding, 15s.

CLASS T.—3 FINE FOLIAGE PLANTS, distinct. (Ferns excluded.)
1st, Wm. Birley, Esq., £1 10s. | 3d, Mr. Joseph Harding, 10s.
2d, Mr. John Atherton, £1.

CLASS U.—3 EXOTIC FERNS, distinct.
1st, Mr. Wm. Burley, £1 10s. | 3d, Mr. Joseph Harding, 10s.
2d, Mr. John Forshaw, £1

CLASS V.—3 BRITISH FERNS, distinct.
1st, Mrs. Birchall, £1 10s. | 3d, Mr. John Atherton, 10s.
2d, Mr. Thomas Dodd, £1.

CLASS W.—4 DINNER TABLE PLANTS, distinct, in 6-inch (or less) pots.
1st, Mr. Joseph Harding, £1 | 3d, Mrs. Birchall, 7s. 6d.
2d, Col. Cross, 12s. 6d.

CLASS X.—3 COLEUS, distinct.
1st, Mr. William Birley, £1. | 3d. Mrs. Birchall, 7s. 6d.
2d, Mr. J. B. Jones, 12s. 6d.

CLASS Y.—3 ZONAL PALARGONIUMS, in bloom, distinct.
1st, Mr. William Birley, £1. | 2d, Mr. J. B. Jones, 12s. 6d.

CLASS Z.—3 TRICOLOR PELARGONIUMS, distinct.
1st, Col. Cross, 15s. | 2d, Mr. J. B. Jones, 10s.

MISCELLANEOUS EXHIBITS.

T. M. Shuttleworth, Esq., Lindley Gold Medal, for Group of Plants.
Messrs. Veitch & Sons, Lindley Gold Medat, for Group of Plants.
Mr. B. S. Williams, Large Gold Medal, for Group of Plants.
Messrs. W. Rollisson & Sons, Small Gold Medal, for Group of Plants.
Mr. H. Inman, Small Gold Medal, for Rustic Work.
Messrs. Cranston & Co., Hereford, Silver Flora Medal, for Cut Blooms of Roses.
Mr. G. Davison, White Cross Nurseries, Hereford, Silver Banksian Medal, for Cut Blooms of Roses.
Mr. G. Prince, Oxford, Silver Banksian Medal, for Cut Blooms of Roses.
Messrs. Downie & Laird, Edinburgh, Commended, for Cut Blooms of Pansies.
First-class Certificates were awarded to Mr. J. R. Pearson for Hybrid Varieties of Pelargonium echinatum, viz., Ariel, Beauty, Pixie.

THOMAS'S GARDEN REQUISITES.

GREATLY REDUCED PRICES, SEASON 1878.

THOMAS'S NEW POULTRY FENCING.

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Galvanised after manufacture, with double-pronged Iron Standards, painted black, and placed every TWO FEET APART, rendering it the strongest and best Fence in the market. It can be fixed or removed by any labourer without extra cost.



REDUCED PRICES, 1878—*6 feet high* ... 5*s.* 9*d. per yard.* *7 feet high* ... 6*s.* 9*d. per yard.*

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GALVANISED AFTER MADE.



12 inches. 2*s.* 6*d.* | 15 inches. 3*s.* | 18 inches high. 3*s.* 6*d.* per yard.

Improved Continuous Iron Fencing, Cattle Hurdles, Gates, &c.

GARDEN SEATS. No. 366.



With Two Iron Supports, 5 feet long, 24*s.*
With Three Iron Supports, 6 ft. long, 28*s.*; 7 ft., 30*s.*; 8 ft., 32*s.*
These Seats combine elasticity, comfort, strength, and durability, with an elegant appearance, and are easily taken apart when required. The iron supports are painted green, and the wood laths are stained and varnished.
Chairs to match, 7*s.* 6*d.* **Folding Iron Tables**, 10*s.* each.
Orders value £5 carriage free.

IMPROVED LAWN MOWERS.



To cut 6 21*s.*, 8 25*s.*, 10 30*s.*, 12 35*s.*, 14 in. 100*s.* each.

This Woodcut shows the Machine folded up for use as a Roller, &c.

LAWN MOWERS of any Maker supplied.

SUPERIOR MACHINE-MADE GALVANISED WIRE NETTING.—REDUCED PRICES, 1878.

PER LINEAL YARD, 2 FEET WIDE.

Mesh.	Light. s. d.	Medium. s. d.	Strong. s. d.
2 in.	0 2¾	0 3½	0 4¼
1⅝ in.	0 3¼	0 4	0 4¾
1½ in.	0 4	0 4¾	0 6



PER LINEAL YARD, 2 FEET WIDE.

Mesh.	Light. s. d.	Medium. s. d.	Strong. s. d.
1¼ in.	0 6	0 7½	0 10
1 in.	0 7½	0 9	1 0
¾ in.	0 10	1 0	1 3

Usual widths kept in Stock, 12 in., 18 in., 24 in., 30 in., 36 in., and 48 in. 2 in. mesh kept in Stock, 72 in. wide. This will be found very convenient for erecting Poultry Yards.
All widths charged at proportionate prices. Special quotations for large orders.

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(Successors to the late A. Paul & Son, Established 1806,)
ROSE GROWERS,
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Inspection of Stock invited.

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SUTTON'S
CHOICE VEGETABLE SEEDS,
FOR PRESENT SOWING.

CABBAGE.



Sutton's Imperial.
The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use. Heads cone-shaped, very large, firm, and of mild flavour.
1s. per ounce.

	Per oz.—*s. d.*
Enfield Market	0 8
Nonpareil	0 6
Early Dwarf York	0 6
Red Pickling	1 6

ONION.—New Queen.
A valuable, new, and distinct variety, being the earliest of all Onions. Sown in March it comes to maturity in July, or sown in July it is fit for use the following autumn. It is of beautiful mild flavour, and strongly recommended.
Per packet, 1s.

The following varieties, sown in July and August, will come to a very large size during the following Spring and Summer:—

	Per oz.—*s. d.*
NEW GIANT ROCCA (the largest variety)	1 3
LARGE EARLY RED ITALIAN	1 3
LARGE EARLY WHITE ITALIAN	1 3
GIANT LATE RED ITALIAN	1 3
GIANT LATE WHITE ITALIAN	1 3

VEGETABLE SEEDS up to 12 ounces in weight sent by post with a charge of *4d.* for the 12 ounces, or 20s. worth free to any Railway Station in England and Wales.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

£25. PRIZE FOR GARDEN PRODUCE

FREEMAN'S ALL HEART CABBAGE, 1s. per ounce, 10s. per lb. One of the most compact and best selected stocks of Cabbages grown.
FREEMAN'S INCOMPARABLE SPRING CABBAGE, 1s. per ounce, 10s. per lb. A splendid exhibition variety, tender, melting, and delicious flavour.
FREEMAN'S MONSTROUS ITALIAN ONION, 1s. 6d. per ounce, 12s. per lb. The largest and best flavoured Onion in cultivation.
FREEMAN'S GIANT ROCCA ONION, 1s. per ounce, 10s. per lb.

The above Prize will be given in one sum to the Grower of the best Specimens of Garden Produce from Seed supplied by

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PAUL & SON,
THE "OLD" NURSERIES, CHESHUNT, N.,
Beg respectfully to announce as ready for delivery
Their NEW ROSES for 1878.

They have all been carefully tried for some three or more years, and can be confidently recommended. PAUL & SON, looking back, are pleased to find that the Roses distributed by them, such as Duke of Edinburgh, Reynolds Hole, Sultan of Zanzibar, and others, have all proved to be better than ever they could have anticipated.

H.P. JOHN BRIGHT (Paul & Son).—Pure glowing crimson, the brightest of Roses. First Prize National Rose Society, for any New Rose; First-class Certificate Crystal Palace. 10s. 6d. each, extra size 12s. 6d. each.

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The Set for £1 10s.

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Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

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By the hundred or thousand, of the Newest and most Choice Varieties, from 12s. to 30s. per dozen.
Trained specimen plants at 5s. each.

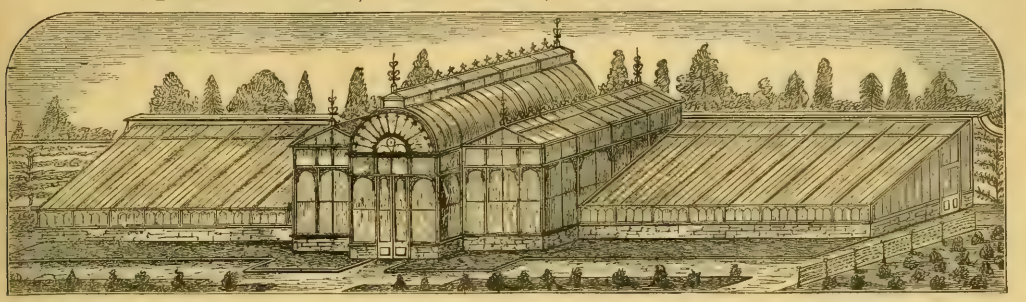
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The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it, but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

Cash prices. Carriage paid to any Station in England.

Price	.. ..	£2	10 0
Ditto, with two tubs	.. ..	3	8 0
Spreader and Valve	.. .. .. extra	0	15 0
Garden Engine and fitting for tub	..	2	7 0
18-Gallon Barrow, with Galvanised Tank		2	2 0
30-Gallon ,, ,,		2	12 0

THE HAMBURGH FIRST PRIZE

LAWN WATERING MACHINE,

WITH POWERFUL GARDEN ENGINE.



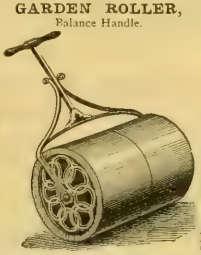
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Complete (36 gallons)	.. .. ..	£6	10 0
If without Pump	.. .. ..	3	10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLLER, Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by 18 in. diam.	.. £1	17	6
20 ,, 20 ,,	.. 2	5	0
22 ,, 22 ,,	.. 2	12	6
24 ,, 24 ,,	.. 3	5	0

DOUBLE-CYLINDER.

18 in. long by 16 in. diam.	.. £	5	0
20 ,, 18 ,,	.. 2	12	6
22 ,, 20 ,,	.. 3	5	0
24 ,, 22 ,,	.. 3	15	0
26 ,, 24 ,,	.. 4	5	0

PORTABLE PUMP.



For Liquid Manure or Water.

With stand .. £2 5 0

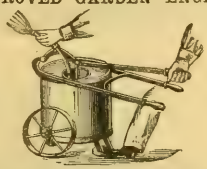
15 feet of India-rubber Suction Pipe, with Clip and Strainer.. 1 10 0

Powerful Garden and Conservatory Engine.

Can be used with a pail or Water-barrow, £2 2s.



IMPROVED GARDEN ENGINE.



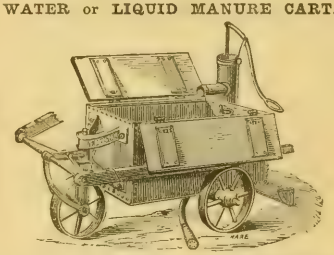
A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices. Carriage paid to any Station in England.

15 gallons, £3 10s. | 20 gallons, £4 | 25 gallons, £4 10s.

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

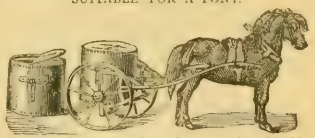
Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	.. .. ..	£10	10 0
,, 200 ,,	.. .. ..	12	10 0
,, 250 ,,	.. .. ..	14	10 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	.. ..	3	15 0
Spreaders	.. .. .. each	0	15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

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To hold 60 gallons with one tank	..	£6	0 0
,, 100 ,,	.. .. ..	8	0 0
Valve and Spreader for ditto	.. ..	1	5 0

Goods amounting to 40s. sent carriage free to any of the principal Railway Stations in England. Cash or reference respectfully requested with transmission of all first orders.



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MANSION HOUSE BUILDINGS,

QUEEN VICTORIA STREET, LONDON, E.C.,

CONSERVATORY AND GREENHOUSE BUILDERS,

AND

HOT-WATER ENGINEERS.

GEO. JACKMAN & SON.

NEW HARDY CLEMATIS.



Awarded First-class Certificates by the Royal Botanic and Royal Horticultural Societies of London and Crystal Palace Company.

Ready for Distribution on the First Week in JUNE, 1878.

C. EDITH JACKMAN.

A charming variety of the patens group, of free growth, and having ternate leaves. The delicately-tinted flowers measure fully 5 inches across, which are white, with a very delicate flush of mauve. The stamens, which are somewhat conspicuous, have white filaments, and dark chocolate-purple anthers, which contrast admirably with the delicate tint of the sepals. Price 7*s.* 6*d.* each.

C. DUKE OF NORFOLK.

A variety of the early Lanuginosa section. The flowers are about 4 inches across, eight-sepaled, forming a close well-set flower of a very deep mauve colour, with a broadish pale bar; the anthers are darker coloured. Price 7*s.* 6*d.* each.

C. PRINCESS OF WALES.

A grand variety of the early Lanuginosa type. The flowers are large, remarkable for the breadth of their sepals, and their rich satiny lustrous colouring; they are fully 7 inches across, flat, very full, eight-sepaled, much overlapped, so that the four inner ones meet at the base. The colour is a deep bluish mauve, with a satiny surface. An exceedingly fine Clematis. Price 7*s.* 6*d.* each.

C. SAMUEL MOULSON.

A handsome variety of the early Lanuginosa group. The flowers are mauve-coloured, with a reddish tint on the bars, the mauve tint being paler next the bars, and the anthers are dark coloured and well contrasting. Price 7*s.* 6*d.* each.

The set of Four Varieties, including Package, for 25*s.*

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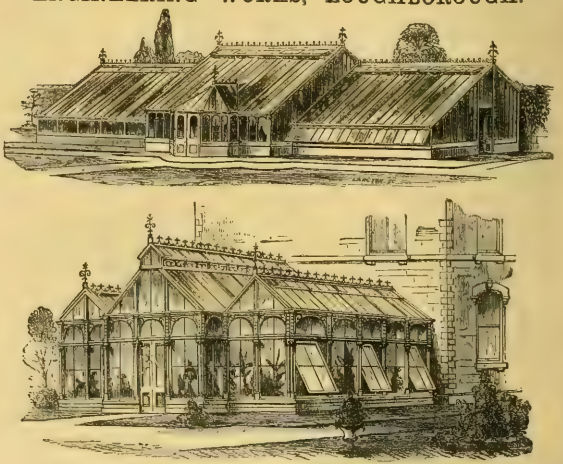
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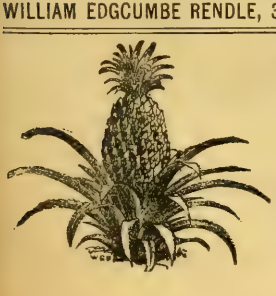
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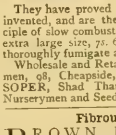
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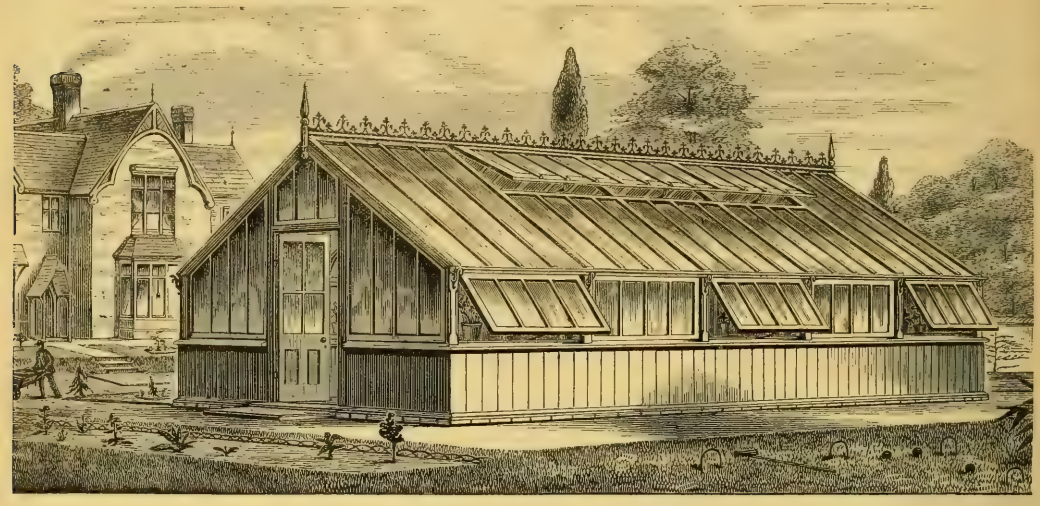
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"FLORVITA" contains all the elements essential to healthy growth combined in a carefully prepared form, rendering them most easy of assimilation, at once imparting fresh life, and supplying rich nourishment for the perfect development of plants, both in their blossom and foliage.

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"The preparation is readily soluble in water, and perfectly free from all disagreeable smell, and it may be regarded as the concentrated essence of the most valuable manures, deprived of all the disagreeable smelling and useless products of partial decomposition which generally accompany ordinary manures.

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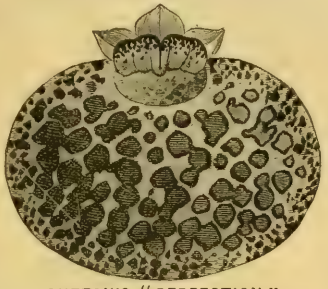
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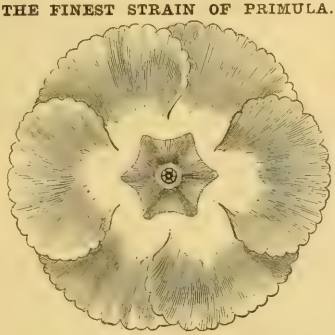


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SATURDAY, JULY 13, 1878.

TEA ROSES.

[*See the Coloured Plate given with this Number.*]

WOULD that Ruskin, whose restoration to health and work has gladdened the heart of every lover of Nature and of Art, could turn, if only for the shortest time, from Turner to Tea Roses. The change might do him good, and might, perchance, do more to popularise Tea Roses than all the coloured plates and illustrative descriptions of the horticultural press for the past fifty years. He who could write a prose poem on a blade of grass, a sprig of moss, a dry lichen, what might he not do and say while enjoying a feast of Tea Roses? What a treat it would be to have Ruskin contrast the fragility of the Rose with the stability of the Lichen. The beauty of Tea Roses could hardly be exhausted by his own exuberant descriptions of tangled masses of autumnal foliage wet with the sweet verdure of a thousand evergreens. "Purple, or crimson, or scarlet" (this colour can only be applied to the Tea Roses of the future, and gold must also be added to the above trio), "like the curtains of God's tabernacle, the rejoicing trees sank into the valley in showers of light, every separate leaf quivering with buoyant and burning life; and as it turned to reflect or to transmit the sunbeam, first a torch and then an emerald."

It seems somewhat singular that such a great art critic as Ruskin should have been impressed more by the colour than by the form of the Rose. In another place he says, "Perhaps few people have ever asked themselves why they admire a Rose so much more than all other flowers. If they consider they will find, first, that red is, in a delicately gradated state, the loveliest of all pure colours; and, secondly, that in the Rose there is no shadow, except what is composed of colour. All its shadows are fuller in colour than its lights, owing to the transparency and reflective power of the leaves."

There may be something in this, but there can hardly be a doubt that the fragrance and associations of the Rose inspire more admiration than its colour, brilliant, rich and lurid as the latter is. The Tea or other Roses trained round or looking in at the window, become identified, rather than merely associated, with other Roses, yet more sweet either inside or out. Lord Beaconsfield showed himself a skilful diplomatist in affairs of the heart where he finishes Lothair's rather curious love-making with the gift of a Rose to Lady Corisande.

Could the secret history of Roses ever be written it would furnish abundant matter for thousands of three-volume romances. Who can estimate how many lives have been moulded into new forms, diverted into fresh channels, by such a lovely Tea Rose as Devoniensis? No doubt such Roses are exquisitely beautiful and sweet in themselves; and we are ready, as they linger in the cold and seem afraid to venture forth into the harshness of our modern summers, to urge them forth in such words as these:—

"Ope, folded Rose;
Longs for thy beauty the expectant air:
Longs every silken breeze that round thee blows;
The watching summer longs to count thee fair:
Ope, folded Rose."

Still each Rose as it opens unfolds a leaf of the book of memory, and suggests its separate series of associations.

"How much of memory dwells amidst thy bloom,
Rose, ever wearing beauty for thy dower!
The bridal day, the festival, the tomb—
Thou hast thy part in each, thou stateliest flower.

"Therefore, with thy breath come floating by
A thousand images of love and grief—
Dreams filled with tokens of mortality,
Deep thoughts of all things beautiful and brief.
Rose! for the bouquet gathered, and the bier;
Rose! coloured now by human hope or pain:
Surely where death is not, nor change, nor fear,
Yet may we meet thee, joy's own flower, again."

Said a little child, as her weak fingers relaxed the firm grip of her Rose at the approach of death, "Will there be Roses in Heaven?" "Assuredly," was the quick answer of her father; and her eyes lighted up with a new lustre as she passed away.

Some of the more potent medicines never find their way into the pharmacopœia: chief among them are Roses. They have a ministry of love and of healing for all. The man of business and of pleasure, the woman of fashion and of suffering—the statesman, the philosopher, the scientist, the business or professional man—the mechanic and the labourer—the duchess at one end of the social scale, the semptress at the other—all are the better and the happier for the Rose. They grow in their gardens or wear them in their dresses or button-holes. Even Hood's "Song of the Shirt" could not have reached to such a bottomless abyss of heart-rending agony had there but been a single Rose in it. And as for the sickness and the low smarting hopeless suffering so often met with in hospitals, infirmaries, and the homes of the very poor—there is no better palliative for it than sweet Tea Roses. Their purity, beauty, and fragrance suggest hope, peace, thoughts of a new and better life—and these are the most potent of all healers in not a few of the worst cases of suffering. If any successful lady cultivator of Tea Roses is in search of even a higher pleasure than that delightful pursuit affords, permit me to point out how such a pleasure may be obtained. Let such hasten into their garden, and cut a few of their finest half-opened Tea Roses, and carry them to the nearest invalid, and mark the result. The dew on the Roses may be indescribably beautiful—a galaxy of pearls on petals of alabaster—yet is the dew that gathers in the eye of the suffering and the sorrowful only restrained by delicacy from gathering into long round tears of gratitude—a still more beautiful sight to see.

Fortunately, too, almost everybody, anybody may grow one or more Tea Roses. Time was, and not so long ago either, when almost every dwelling-house had its monthly, and its Cabbage or Maiden's Blush Rose. All these have in too many cases disappeared to make room for short-lived Hybrid Perpetual or other Roses or plants, few of them indeed possessing the substantial merits of those they displaced; but it is useless as unprofitable to cry over spilt milk. These old favourites are gone past recall in most instances. Fill their vacant or usurped place as far as possible with Tea Roses. They possess most of the merits of the old monthly China Roses, and far exceed them in form, substance, fragrance, colour, and consequently beauty.

Almost as well try to paint the Rose as to describe it. The most attractive beauty is ever shy and retiring. It shuns the painter's studio and the photographer's camera—tries to hide its face with its hands or with its blushes, or run away as soon as one begins to pile up the adjectives. Your artist, however, has been very successful in catching the spirit as it were of our finest form of Tea Roses.

The plate, however, reveals in a striking manner one of the strongest defects of our Tea Roses, the absence of bright and and brilliant colour. Some may contend that the advent of Cheshunt Hybrid and others removes this reproach; but as the name implies, and the character of the flower and habit of the plant still more strikingly demonstrate, this is but a Hybrid Tea, with less than half of Tea blood or character about it, perhaps hardly a quarter. It is almost too early yet to write of the Duchess of Edinburgh, a deep crimson Tea, almost rivalling the famous Duke H.P. in colour. Comtesse Riza du Parc is a beautiful pink or rose coloured Tea, of good quality. The pink Gloire de Dijon has also been much finer than usual this season, and very worthy of the name of the fine orange-coloured Glory, as it is generally called by way of pre-eminence. An older variety was sent, out some years since under the name of David, of a brilliant pink or purple colour. This and the pink Gloire de Dijon (Gloire de Bordeaux) would prove useful for hybridising.

It is impossible to dismiss coloured Tea Roses without a word of praise for Homer, perhaps the most early reared, but also one of the most beautiful of all the Tea Roses when it comes in good form. We know a large plant on a south wall with over 200 blooms on it, almost each perfect. The catalogues describe it as a Rose with salmon centre—richly-mottled pink is far nearer the truth about Homer when in good colour. The bud is also of exquisite form, which is more than can be said of a good many Tea Roses. Take the best of all our white Tea Roses, Niphetos, what a lumpy bud and flower it is compared with Devoniensis or Madame Falcot, models of Tea Roses in bud. By the way, a good July white Tea Rose is still as

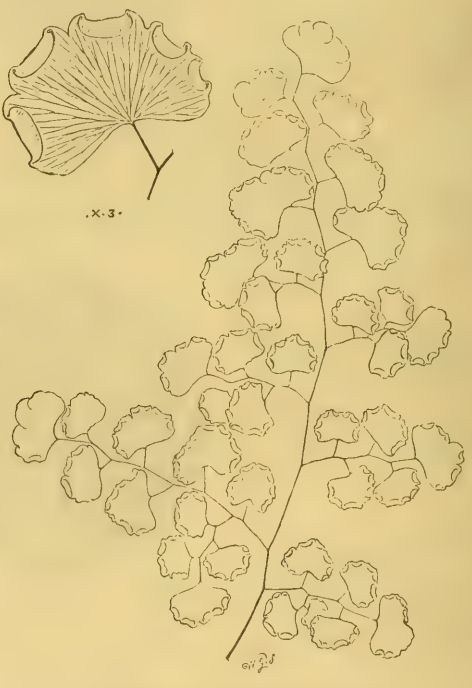


Fig. 4.—Adiantum Williamsii. (see p. 45.)

Aline Sisley, again, introduced a new colour among Teas, covering the range from purple to violet-red. There are many who do not welcome bright colours in this class, hitherto distinguished by its light creamy or golden hues; still it would be a welcome addition to have the same colours in Teas as in other Roses. The Teas also excel in their golden tints. To say nothing of the Maréchal Niel, a golden host in itself—which not a few still rank among Noisette Roses—there is La Boule d'Or, Madame Falcot, Belle Lyonnaise, Perle de Lyon, Safrano, and several others. Can no one work in the golden tints abounding in our Teas and Noisettes into our Hybrid Perpetuals, and give us in exchange a first-class crimson Tea or pure white—let us say Boule de Neige, a brilliant colour? Perhaps it may be said that the advent of Cheshunt Hybrid removes this reproach. As the name, however, implies, and the habit and the style of this plant and flower more strikingly confirm, there at least is but half or a quarter Tea.

much and more wanted as a brilliant crimson, with a bud and flower equal to a half-opened Devoniensis. The whites are all French, dashed with cream, or, worse still, stained with yellow. Of such are such splendid Teas as Souvenir d'Elise, Souvenir de Paul Néron, Marie Van Houtte, Madame Willermoz, Madame Hippolyte Jamin, Madame Bravy, &c. Among rose-coloured or pink Teas perhaps Adam, Rubens, Souvenir d'un Ami, and President are about the best. Those who have room for but two Tea Roses should grow Gloire de Dijon and Devoniensis, if for one only choose the former; the quality is not equal to Devoniensis, but the quantity is surprising. Where room and a suitable position on a wall or chimney can be found for the climbing variety of Devoniensis, that can be substituted, but it is sometimes a shy bloomer. A third Tea many would make first—and it must be first if under glass—is the Maréchal Niel.

One word, in conclusion, in favour of Tea

Roses as window plants. For this purpose they should be grown on their own roots. Eight-inch pots are large enough, and will produce a wondrous succession of Tea Roses with good soil and liberal treatment. As soon as a branch or truss finishes blooming pick off the dead flowers or cut back the shoot; it will soon break again, and begin to flower probably before other later and successional shoots have exhausted themselves.

Tea Roses treated thus pretty well earn for themselves the title of monthly, and are seldom out of flower. The beauty and freshness of their leaves, the rich variety, exquisite form, soft and delicate colours, and unequalled fragrance of the flowers render them universal favourites, while their rather dwarf and bushy habits when grown on their own roots enable them to be grown or flowered in most windows with success and ease. By growing say half-a-dozen of choice Tea Roses in pots the sitting-room window may seldom be without a Rose from April to November. They are also unequalled for bedding-out in groups and for the dotting of walls. One of the finest sights ever seen in England was that of the boundary wall of an Italian flower garden crowded with Tea Roses. They literally rained down beauty and fragrance on the whole garden, and rendered it one of the most beautiful and pleasant ever seen.



Fig. 5.—Dieffenbachia Shuttleworthii, Hort. Bull, shown at Preston. (see p. 56.)

New Garden Plants.

Adiantum Williamsii, *sp. n.* (fig. 4, p. 44).

This handsome Fern has somewhat the aspect of A. chilense, with the form of pinnule of A. Veitchianum. It is, however, quite different from the latter in the form of the sori, which are oblong-reniform and not circular. The straight base and nearly equal-sided pinnæ are peculiar. The growth of the plant is free and vigorous. It has a castaneous stipes 6 or 8 inches long, golden at the base, and a somewhat zigzag rachis of about a foot long. The lower pinnæ measure about 4 inches, and are of an ovate figure, attached by stalks ⅛ inch long, and bipinnate. The pinnules, which are nowhere crowded, are about ¼ inch broad, and attached by pedicels, about ¼ inch long, so that the parts are nowhere crowded; they are membranaceous, of a bright green colour, mostly semicircular, *i.e.*, with a straight base and equally developed on each side of the pedicel, occasionally slightly binate, one or two towards the apex of the fronds and pinnæ subtrapeziform, and the terminal one very slightly tapered at the base, scarcely cuneate; the outer margin is divided about one-fourth the depth into 3—4 rounded lobes, and there are 5—10 sori around the edge, according to the size of the pinnule, each sorus being separated by a notch about as deep as itself, breaking up the edge into crenatures. The sori occupy the whole of the outer semicircular edge, and occupy the crest of the crenature; they are kidney-shaped in outline, and are covered by membranous entire indusia.

There is thus, as already intimated, a close relationship to A. chilense, but the plant seems to differ from that by its larger size and freer growth, by the peculiar form of the pinnules, and by the less curved sori, the ends of which in A. chilense point outwards, like a pair of horns. There is also a peculiar undulation of the surface of the fronds. The caudex is slowly creeping, and makes its way to the sides of the pot in which it is grown.

It is a native of Peru, where it is found on the mountains growing at an elevation of 12,000 feet, whence it has been recently imported by Mr. B. S. Williams, after whom it is named. It was awarded a First-class Certificate at South Kensington on May 2, 1877, and is exhibited among Mr. Williams' plants at Preston. *T. Moore.*

Dendrobium Bensonæ, *Rchb. f.*, xanthinum.

This new variety is the climax of the aurantiacum depicted in our columns, 1874, vol. ii., p. 6. It is beautifully white, and has its lip adorned of a yellow disk. The column bears some green tint. I have to thank Sir Trevor Lawrence for this curious novelty. It is the first totally unspotted variety which came in my reach. *H. G. Rchb. f.*

* *Adiantum Williamsii*, sp. n.—Fronds tripinnate, triangular, membranaceous, bright green, glabrous; pinnæ ovate, distant; pinnules sub-rotund, that is cut straight across the base with the pedicel nearly central, rarely towards the apex, slightly trapeziform, occasionally provided slightly at the angles so that the basal line is concave, the margin entire or very slightly divided into 3—4 lobes, crenately notched between the sori, the sterile portions with an erose diaphanous margin; sori 8—10, elongate reniform or lunate, occupying the whole of the semicircular outer edge; indusium rugose membranous, pale green, entire; stipes castaneous, semiterete, and as well as the slender rachides smooth and glossy; caudex slowly creeping.

BUTTON-HOLE ROSES.

When a gentleman clothed in broadcloth, and especially one in black cloth, is seen with a large Rose inserted in the button-hole of his coat at any time during the Rose season, it may be accepted as an undoubted fact that the wearer is an enthusiastic amateur rosarian.

The trade, or professional cultivator, is a man of cooler blood; Roses to him are of course very lovely and beautiful, but they are none the less articles of trade, things to make money with and to live by. To him Roses are of the "shop, shoppy," and it would be regarded by him as an evidence of growing eccentricity, or something worse, if he were to sport the evidences of his trade in his button-hole. A draper sporting a brilliant wreath of artificial flowers on his breast would be just as incongruous an object.

The amateur rosarian, thanks to the unselfishness of his love for the queen of flowers, has no professional objections to the fullest display of his passion. He delights to display his finest bloom in his coat; he loves to show his superb blossoms to his friends; he finds the most perfect pleasure in conversing of their beauties, and to talk about the Rose is to discourse with all the ardour of first love. To such men, when seen with monster Roses in their coats, the world makes exception. They live in a world of Roses, and can for the time see no other beauties; they are under a spell, but it is one to which all men may well and truly become subject. Let them grow Roses, show Roses, talk of Roses, live amongst Roses—nay, die amongst them, for all their lives must be sweeter and happier and better for the beauteous influences the Rose sheds around.

But the amateur rosarian is not a common being, he is one of a thousand, and whilst the thousand will admire Roses, and some of the thousand will grow them in a fashion, it is but the few that are true worshippers. To the thousand, however, is yet left a taste for the Rose in a crude uninformed way; they know nothing about form and petal, of globular or cupped, of Hybrid Perpetual or Bourbon, of this, that, or the other. The thousand love a Rose button-hole, a pretty neat flower of sweet perfume, and of suitable size, one that shall command at once the admiration of the wearer and of all observers. This passion for button-hole flowers is probably not exclusively a feature of the English people, but it is at least one that flourishes vigorously on British soil, and it is none the less a passion to which our floricultural trade owes much, as the supply of these floral

decorations for the button-holes of the thousand is one that is extensive and profitable. Roses spread the production of their beautiful flowers over such a wide portion of the year that it is not surprising to find them perhaps of all flowers the most commonly worn, whilst there is a national taste for the flower that, apart from its intrinsic merit, renders it peculiarly acceptable to the true born Briton. Whilst eccentricity or uncultivated taste may lead to the button-hole display of Paul Néron, Baronne Prevost, Marie Baumann, or full-blown Maréchal Niel, the more refined fashion in button-hole workers leads to the selection of some pretty half-expanded bud, some medium-sized Tea or Noisette, or some neat little cluster of half-expanded buds, such as need not additional aid to produce that which the professional button-holist would consider a finished breast decoration. But the proudest wearer of the rosy button-hole is that individual who culls from his own small garden, on each summer morning, with his own hands, the flower of his own growing and of his choice. The breakfast has been despatched, the time for departure to the city is close at hand, and but a few moments have been left for the performance of that one special great duty of the early morning, the selection of a flower for the day's button-hole. It may be, that on the previous evening after the early arrival home from the arduous labours of the city office, the evening meal has been partaken of, and with a strong consciousness that the selection of the flower that is to grace the next day's labour must be done if a sleepless night is to be avoided, the suburban resident steps into his garden to perform that labour of love. If there are not one but twenty, alike beautiful and tempting, then does he feel that he could indeed be happy with either "were t'other dear charmers away;" and, perhaps, when the choice is made, uneasy thoughts of better ones thrust themselves upon the mind all through the night, and the morning finds it as undecided as ever. Happier indeed is the man who, having twenty flowers to choose from, finds himself without time to choose either, and has some sweet angelic partner of his home who does it for him, and thus relieves him of a care that might have oppressed his next-door neighbour as with a nightmare. Tea Roses rank above all other kinds as suitable for button-holes, their sweet perfume is one recommendation. Generally they produce flowers of medium size, and some seem specially raised for the production of button-hole and bouquet flowers. Then the stems are less furnished with thorns, and are, as a rule, smaller and more pliable than are the stems of Hybrid Perpetuals; and not least, the hues of colour found amongst Teas render them more acceptable for button-hole purposes. Monsieur Furtado, Marie Van Houtte, Madame Margottin, Safrano, Marie Guillot in early bud, Madame Falcot, Homer, Isabella Sprunt, Catherine Mermet, and Cheshunt Hybrid, are kinds that produce, under average culture, just the flowers to grace the coat-front of a gentleman of taste. Further, it should be added, that no foliage more fittingly sets off a Rose than its own leaves. Fashion has made it a rule to garnish all button-hole flowers with Adiantum fronds, just as all cold meat, from roast beef to a cold piece of bacon, is served up with a garniture of Parsley. Fern fronds have no more relation to a Rose than they have to a Dahlia: the combination is absurd. Tea Roses, especially on their own roots, will naturally flower for a long season, but a few grown in pots in a gentle warmth, introduces the Rose season six weeks earlier, and a few planted on a south wall will keep up a supply nearly until Christmas; indeed in any small garden, with judgment exercised in the selection and planting, button-hole Roses may be had nearly all the year round. *A. D.*

HERBACEOUS PLANTS AT KEW.

Some noble Irises are still in flower, and though we enumerate others we must give special prominence to Xiphion tingitanum, of Baker. It is a splendid plant, much superior to X. tingitanum of the *Botanical Magazine*, since found to be X. filifolium var. latifolium. The flowers are nearly 7 inches across, the "falls," of fine form, are deep purple-blue, and at the broadest part measure 2 inches, having a median line of yellow with the additional beauty of a white feathering; the standards and stigmas are still darker than the falls. X. filifolium var. latifolium has recently flowered, and contrasts greatly in the comparatively dull and less purple colour, and in the narrower segments. X. junceum is a beautiful species, not equalling X. lusitanicum in robust and floriferous habit, but nearly the same in colour; it grows only about half the height. Iris Monnieri is a very effective tall growing self yellow, not surpassed in this section of the genus. I. aurea, of which there is here the true plant, is narrower in all its parts. A fine garden form of I. lævigata from the florist's view must be nearly perfect, the segments are all quite the same—standards like the falls—of good colour, and the entire flower has perfect roundness and evenness of contour. The two other kinds are I. lurida, deep and rich in marking and colour, and I. plicata, with delicate mauve and white. Gladiolus Colvillei alba is now extremely beautiful at the end of this border, and for pot culture it is excellent. Morphixia paniculata is an Irid of much interest; it has a regular perianth, of which the slender tube is 2½ inches long; the limb is 1½ inch over, and the colour of the whole is reddish yellow. Bloomeria aurea is a pretty plant, with umbels of bright yellow flowers. It is known also as Nothoscordum aureum. Scilla Fraseri is little known in cultivation; it has extremely narrow leaves, with long slender scapes bearing a rather small raceme of pale blue flowers. The forms of Alstrœmeria aurantiaca are now very showy, and quite deserve a position in merit beside the Lilies. A. Lightii is elegant, and has pleasing pink flowers. Sisyrinchium striatum is not a little ornamental, its yellow flowers in fascicles appearing in long succession.

Neja falcata year by year finds a decorative position at Kew, and as a graceful half-shrubby Composite it has few rivals. This is on the recently made and capitally executed rough screenwork at the head of the herbaceous ground, where many other plants are flourishing. Linaria alpina is equal in beauty to any other; it grows only a few inches high and while at home almost anywhere it never intrudes on other plants. Lupinus arboreus is highly effective, and admirable for its long blooming season. This form is yellow, but appearing to cross freely it often comes blue. Funkias are pretty well appreciated for the decorative capacity of the foliage, but there are two or three with large finely-formed flowers, of which F. Sieboldiana is now in bloom, the colour being a pale lilac.

The collection of Kniphofia includes several rare kinds—K. caulescens, now pretty well known, is in fine condition: it has a fine crown of foliage, such as not produced on a tall stem, and it has a good spike. Allium Moly is valuable among its congeners for the fine show of yellow flowers it always produces. A. stramineum is noticeable on account of its close head of straw-coloured flowers, very similar in appearance to a Globe Amaranth. A. Macnabianum, from California, takes a place among the choice species; its flowers are nicely formed, not too much exposing the ovary, and of beautiful plum-colour. This genus now presents an important rarity. A. Erdelii was introduced to Kew a short time since, and is now flowering for the first time. It is a native of Syria, and in a wild state is little known. It comes near to A. nigrum, but is conspicuously different in the glaucous leaves and very short scape. The flowers, too, are finer, and the ovary differs in colour, being deep purple. A figure will, we learn, shortly appear in the *Botanical Magazine*. Dianthus Sequieri var. Atkinsoni appears to be a fine perennial; its colour is rich crimson, and though without the fine marking is equal to the varieties of D. chinensis. Linum grandiflorum is a magnificent annual, well known, but always worth recalling to mind.

Geraniums now show a great variety. The most choice are perhaps G. Endresii, which produces with good habit a large number of rosy flowers, and G. subcaulescens, a small growing, neatly tufted species, with pale flowers nearly white. Turning to the Compositæ we are first struck with an annual of beautiful blue colour, Kaulfussia amelloides. Deeper than this we do not remember any blue member of the order, its habit is good, growing to 6 or 8 inches high. Helichrysum orientale makes a pretty border plant, though useful for the purpose to which it is so much applied, for making wreaths in "immortelles." Bahia lanata when kept in good order is useful for its silvery foliage, but now in natural condition is covered with showy orange flowers. Saxifraga autumnalis now makes a good display, there is also a hybrid from it with S. mutata, but like many hybrids—granted there are many exceptions—it is nothing in itself, and quite effete as a representative of either of its parents. It has, however, some interest as a hybrid, and from this point of view is not to be despised. Umbilicus Sempervivum is choice and extremely pretty, it has a rosette of broad leaves very distinct from other species, and panicles of delicate pink flowers. Sedum sempervivoides is a very handsome variety, it has triangular bronzy leaves on a short stem, and bears an inflorescence equal to Rochea. Close by is a good specimen of the rare Sempervivum Reginæ Ameliæ. It cannot possibly be mistaken for another species, and we draw attention to this because in two well-known collections quite an inferior plant has taken its place. It branches but sparingly and throws off no stolons, so that it is only with difficulty can a stock be obtained. Gillenia trifoliata, of graceful habit, with scarlet calyx and white petals, is one of the most select herbaceous plants. Spiræa pubescens, forming a tuft of neat foliage with white flowers, and growing only a few inches high, strikes the attention as suitable for choice rockwork. Scabiosa caucasica is now the finest of all its congeners, with many large blue flower-heads. Few herbaceous plants are more striking than Galax aphylla—the effect of its spikes of white flowers rising above a mass of dark green foliage being unlike anything else. Lindelofia spectabilis is most choice in its order, the Borragineæ, and is valuable for the deep blue of its flowers. Among its relatives Salvia argentea is conspicuous; its large white flowers are set off with a base of broad leaves, which alone are ornamental.

Nymphæa alba var. rosea has quite borne out our prediction that bright weather would improve the colour and enhance the beauty of its flowers.

The rockwork has much attraction in choice species, and some in particular deserve attention. Primula sikkimensis has recently been in unusually fine condition; its flower-heads of extra development have had pedicels nearly 7 inches in length. P. capitata is one of the most select, and its deep purple flowers are finely contrasted with dense white meal. Though quite distinct to the eye in a living state, it comes very near P. denticulata, and, broadly speaking, may be considered as one of its very numerous forms. Delphinium cashmirianum, as one of the newer and choicer species, here finds a place, and from its dwarf habit is suitably situated. Dianthus superbus makes a pretty rock plant—its petals, excessively erect, form, as it were, a mass of beautiful fringe. Spiræa palmata occupies a central position, and nothing at the present time can be more showy. Morina longifolia is highly ornamental in flower and foliage. In bud and when first they open the flowers are white, afterwards changing to deep rose. The leaves are spiny and undulated, reaching a length of 1 foot. Lithospermum orientale is a rare and pretty yellow-flowered species, lasting in bloom for many months. Œnothera eximia, Omphalodes Luciliæ, and Silene Elizabethæ may be mentioned among others also rare and choice, but in less degree.

TREES IN THE CITY OF MANCHESTER.

Two mild winters have come and gone since one of our liberal-minded citizens, with praiseworthy views, planted the graveyard of our cathedral church with trees and shrubs of various kinds. This, to say the least of it, was a bold stroke. Moreover, permission must have been had from the dignitaries before the attempt could have been made. This, no doubt, had been obtained, and the churchyard was duly planted with forest trees and American shrubs, of which I counted only about half-a-dozen of the forest trees alive on June 19, and the Rhododendrons are all dead.

There is a costly kind of education called experience, and it is sagely said that some persons will not learn in any other way: from this experiment may be learnt the important lesson that the harmless art of horticulture is not native, but has to be studied, taught, mastered, and applied, before any good can be got of its treasures. There is such a thing as turning even our failures to account, provided we can trace effects to their causes; and in this example we are fortunate in finding the true cause of the ruin of the plantation, for that is what it has come to after two exceptionally wet seasons. All the principles of horticulture were outraged in the first stage of the work. The evergreen shrubs, Rhododendrons, being planted in coarse gravel it did not require a spirit of prophecy to foretell their future fate; and the forest trees, tall and slender, like

waggon-whip-sticks stuck in between the gravestones or scattered round just inside the fence as if to fatten on the gravel and soot of what had been for ages ancient footpaths. We had the best advice from London and elsewhere, and our local papers teemed with the experiences of amateurs of home growth, but notwithstanding all this array of talent in so good a cause it is rather odd that with so many practical gardeners scattered around us I do not recollect seeing any letter or even a suggestion from any practical gardener on the subject, with the single exception of the writer, who was the first to see the folly of the attempt, or as medical men say "diagnosed" the deadly complaint to which all have succumbed.

The side of the churchyard facing the Exchange is about 120 yards long, and there is a good breadth, and this strip admits of tree planting, as there is room about the gravestones there for some display of trees, or at least of shrubs, to carry green foliage. The best that can be said of that site now is that it bears clean green grass of its own accord without "man's official aid." Now the very plants that could possibly exist in our fine old churchyard are just what our local advisers scorn. Take one example, the Elder. It grows freely from truncheons. It could easily be fitted in between gravestones, as the area of a single brick would be ample space to introduce an Elder bush. In two years I have had it 6 feet high as a hedge from truncheons without either root or branch, and, be it observed, it is one of the greatest practical difficulties in this case to find room to plant anything. The workmen must have had hard times to plant a paved yard with trees, and yet not be allowed to move a stone.

There is a mania for planting trees in towns at this time, and if there be but room and other essentials why should they not succeed? They do well in London; and in some provincial towns choice kinds are planted and thrive luxuriantly, so that our letter writers scorn such plants as the Elder, because, forsooth, the Cockney prefers better things; and we are snubbed for favouring the Elder bush, but it is now in flower, and with its deep dark foliage and clear white flowers borne in abundance on bushes or small trees some 15 or 20 feet high in gentlemen's pleasure-grounds, it is decidedly an ornamental bush, and surely something might be added on the value of its berries, for this bush is the mother of Elderberry wine. I have the plant growing freely at my door, where the Rhododendron dies the second year, and the Rose does not bloom at all, though coddled with kindness, and "catching the river breezes" only a short distance off.

It would take a goodly volume to answer all the letters that have appeared on town trees. The London artizan speaks of his trees in pots—meaning his Pelargoniums; and he does wisely to hold with such town trees. Tree Mignonette is acknowledged in the trade, so are Tree Violets and Tree Roses; but there is no room for trees in towns, and the only kind that would take up little room, the Lombardy Poplar (R. fastigiata), is called un-English and other bad names; still all agree that an equilateral triangle—the sign of the Trinity—is an elegant form, and truly artistic—at least we are told so, and we look in vain for any other tree that would give the finishing-stroke, and add the apex to the triangle, as we see done in the Valley of the Thames in twenty places. But I must conclude, for I only wrote this notice to bear my humble testimony that the first lesson on planting trees in our old churchyard has been read, and I hereby chronicle the date of midsummer, 1878, when that game was played out.

"Her lights are fled,
Her garlands dead,
And all but six departed."

Alex. Forsyth.

BALCONY AND WINDOW GARDENING.

It is a common excuse for bare windows and unsightly forecourts that the atmosphere is too smoky and plants too expensive. Such excuses can scarcely hold good, for there are blossoms, and bright and pretty ones, too, to be seen in some of the dirtiest streets of London, and plants may be seen embellishing the very poorest dwellings.

In country places the growth of plants is spontaneous; the seeds are carried about by the wind or dropped by birds, and undisturbed in their lowly and untrodden beds they germinate, and soon cover the barren earth with beauty. In towns and populous places they require regular attention, but although they require careful tending it is not laborious work, and even where some little self-denial has to be practised the work will very soon become a pleasure. "The labour we delight in physics pain." There is no better illustration of this than in artistic work, in the category of which we may well include gardening. The great art of outdoor window gardening in towns is to choose suitable subjects, and treat them according to their requirements. Where this is considered too troublesome no attempt at gardening should be made—it will only result in disappointment. The present being the height of the flower season, it will be found an excellent plan to take two or three rambles round about London, and learn a few lessons in the beautifying of the outsides of what people are so fond of calling the dingy houses of our smoke-dried metropolis. In the vicinity of towns and the densely-populated streets of London there is the same natural craving for beautiful flowers, but a much greater difficulty in obtaining and keeping them in a flourishing condition; however, at this season, and for many weeks to come, the humblest window of the metropolis may be rendered bright and pretty by snatching a few gems from Flora's ample crown.

With care in supplying water in sufficient quantity and at suitable times window plants may be kept in beauty for weeks to come. If there is any sign of flagging during the day water should be given at once, but it should not be perfectly cold from the tap; that which has stood in the room or the sun for some time is the best; a careful gardener, however, will never find any necessity for watering at mid-day; but during very hot weather, such as we have lately been having, will give sufficient water in the evening when the sun is not on the flowers, for then, added to the moisture for the roots, the plants may receive a copious shower-bath to cleanse them from the soot and dust which accumulate more or less on all foliage in towns. There are many subjects suitable for places "cabined, cribbed, confined," and streets and alleys pent, the following being among those plants I have seen flourishing in situations that would, to the non-observant, seem ill-suited: — Stocks, Geraniums, Balsams, Creeping Jenny, Mesembryanthemums, Lobelia, Mignonette, Virginia Stock, Myosotis palustris, Musk, Ground Ivy, Virginia Creeper, Crocus, Tulip, Sunflower, Indian Corn, Indiarubber, and common Ivy. These alone form a goodly list that would brighten up any place otherwise bare and barren of beauty, and cause it to smile with "verdure clad."

Window-boxes and pots in which plants are grown should be drained with a quantity of broken pot at bottom, so that water may be frequently given without any fear of its stagnating at the roots and so injuring rather than benefiting the plants; this, however, does not apply to the Indiarubber plant, a noble subject for window culture, and Musk, which are rather benefited by standing in water. Plants grown in rooms, however free from injurious exhalations and dust, require as much air as the temperature and other circumstances will allow; even in winter we have many warm sunny days, when the window should be thrown open, and air allowed to circulate among the plants; at all times it should be regularly given. It is too often the case that window plants get air simply by chance, and the consequence is they are sickly and ill-grown, their leaves become an unhealthy yellow, their half-formed flowers fall off, and insects innumerable appear to complete the disaster. Window-plant cultivators should remember that their often delicate charges suffer much when exposed to cold draughts, and it is to prevent this that, when the window is opened, it should be opened wide, not only a few inches, which would cause the very thing to be avoided—a draught. Again, the opportunity of giving air should be as often as possible taken when the wind is blowing from rather than towards the window in which the plants are situated. During very hot sunshine they should be shaded, or the heat will cause drooping of heads, which on no account should happen. Watering is often improperly carried out—an important matter window-plant cultivators will do well to see to; the first principle is never to administer water unless the plant is really in need of it, and this is the case when the ball of soil about the roots is dry, when water should be copiously given, so as to thoroughly saturate every particle of soil, and not in daily dribblets, as is too frequently the case, this doing much more harm than good. Lacking a garden proper, many people are fain to content themselves with window-gardening, and although this cannot be made to rival the extensive brilliant parterre, it may be made a source of great pleasure and of daily-recurring interest, if attended to with judgment and care. *T. S. J.*

NOTES ON FRENCH HORTICULTURE.

And first as to the weather—this was quite as wet, dull, and dirty as our own, up to about the twentieth of June. Any difference there might be was against French weather, for if it rained almost every day, unless when it hailed, it rains much heavier in France than in England, and the hail comes down with greater speed, of larger size, and of course with more force. The very streets in Paris seem to be aware that the deluge is coming, and the mud and the dust; a sound as of distant thunder gives a few minutes' notice, when down comes the rain in torrents, converting the Boulevards, Champs Elysées, and other magnificent streets and avenues into something very like shallow rivers. The large and frequent openings into the huge sewers save the streets from injury, and speedily get rid of the torrents of water that threaten the destruction of the streets. Men are also busy with brooms removing all obstructions and sweeping all refuse into the sewers, so that the streets after the rains are free of mud, and as sweet and clean as a nut—not a very good simile, but a most expressive and truthful phrase. Water and brooms are the two great street cleaners of Paris—no scraping up of mud, and no removal of it in carts. When by any chance mud appears, as will happen at times through copious waterings or heavy showers on dust, circular brooms drawn by horses sweep it all off and dismiss the mud at one side of the broom. This is managed very simply, thus:—The broom, instead of being set at right angles to its work, is set obliquely to the line of the street. The result is that all the mud is left in a line at the lower part of the broom. By repeating this process sufficiently often, the mud is ultimately placed against the side of the street, always paved with stone. It is then swept into the sewer. After a series of thorough washings the sand is cleansed, settled, and finally brought back for further use, while the impurities it contained are removed by the sewers. This system is also in use in many of the best London streets.

The quantity of water used on the streets is enormous. The sides of most of the main thoroughfares seem washed daily. Hydrants or taps are placed at regular or convenient distances, and a set of jointed pipes on wheels is attached to these, and the street, path, trees, or whatever else may need water, soaked, sprinkled, or rinsed clean as required. Thus all the trouble, danger, and heavy labour of carts, horses, &c., for street-watering is avoided, and perhaps no streets are so thoroughly watered and so scrupulously clean as those of Paris. Some may enquire, What has this to do with French horticulture? It may be answered, very much indeed. Show me the streets of any large town, and I will estimate almost without seeing them the state of its horticultural productions. And smoky chimneys are bad enough, but they are credited with a great deal more mischief to horticulture than they deserve. Dirt, dust on roads and streets are more gross and consequently often more fatal to vegetation than either the soot, vapours or gas fumes from our fires. Seeing the scrupulous cleanliness of the streets of Paris one wonders the less at the greenness and robust health of the Ivy screens that cover or conceal so many of the fences and houses that abut on the main thoroughfares. Never have I seen so much, nor on the whole so fine, Irish Ivy as in Paris. The taste for green seems, in fact, so intense that those who do not plant Ivy go to enormous trouble and expense in covering walls of houses, courtyards, &c., with wooden trelliswork in 1½ inch or 2 inch meshes, squares or diamonds, painted of the greenest colour. These are sometimes used for the training of Ivy and other plants, but very often merely as a green dead screen to hide the white glare of stone walls. The same love of green is seen in the use of a green wooden blind for hothouses. They fold up something like a Venetian window blind. The laths are about 1 inch wide, and are so fixed and adjusted with strong cords as to almost meet when laid on the roof of a glass-house. They are a sure antidote to scorching and burning, but the shade is far too dense in dull weather, and in many cases the means of moving them seems slow and inadequate. Indeed, in some of the larger houses

at the Jardin des Plantes and elsewhere, these wooden shades seem to be left permanently over the glass for the summer These blinds most effectually tone down the glare of the glass. What the plants might think of them could they be questioned on the subject is a different matter. Fortunately for horticulture, the plants gave plumpers against these green wooden blinds in their own mute significant way, unless, indeed, they could be rolled up and down as the sun shines or otherwise. It must, however, be admitted that the weather was not favourable for judging of the merits of the blinds, and it is hardly likely a whole nation would adopt those green wooden screens for their glass-houses unless they were found to answer fairly well. One thing is certain, at the time of my visit these screens gave to the interior of the French hothouses, and also to the plants in them, a sombre aspect. Possibly, had one visited these houses in the scorching weather of the last week of June his opinion of those green shades would have been more favourable and widely different.

Turning to other matters, it was certainly a great surprise to find the Parisians busy bedding-out all their public gardens about the middle of June. Perhaps this, after all, was the surest test that the weather was no better nor much different from our own. Their practice was a fortnight or three weeks behind that of the major portion of England, and the weather gave unmistakable proofs that they were not too late. Several battering hailstorms did much injury to the plants at that late period, and riddled and scattered the Roses in all directions. Neither was the fruit in the great markets of Paris much in advance of Covent Garden. Cherries and Strawberries were plentiful in the first three weeks of June, and they were almost equally so in London. Of course there is great diversity of climate in France—the South is a fortnight or three weeks in advance of the North. There, as here, early Peas were plentiful, and early Potatos in the great markets; but they were equally so and fine in Covent Garden. Apricots had made their appearance in Paris, but, as far as I could learn, they were from Africa or Spain—a great many early fruits and vegetables being sent from Algiers or other warm countries to Paris. The Apricots were small, pale, and very deficient in flavour. There were no Peaches from Montreuil nor elsewhere, nor any forced Peaches in the Parisian markets. Almonds, of which the green kinds are popular for dessert, were plentiful. These came from the South of France or of Europe. No ripe Grapes, forced or otherwise, were seen, out-of-door Grapes being no forwarder than in England. Judged by other and yet surer standards, the climate of the North of France seems little, if at all, superior to that of England. The failure of superior fruits — including Pears — this season seems general; Pear trees, in fact, were not only bare of fruit, but looked worse than in England. The "yellows," a sure sign of an ungenial climate, or bad soil, or of both, was universal. A verdant, healthy Pear tree seems a rare sight in the North of France this year.

The condition of tender plants recently planted out affords another sure test of climate. In applying this test sufficient allowance must be made for culture, soil, and the size and health of the plants when put out. The soil is rich and mellow, and the mulching of bedding plants with a dressing of rich compost or manure seems universal. Neither is water nor labour spared. The plants are also put out large, and in good health, so that everything was in favour of the Parisian parks and gardens. And yet with all these advantages it could hardly be said that any of the beds or borders were forwarder or better furnished than those of London at the same date. No doubt the season has been exceptional, but it has been equally so in both countries, proving the virtual identity of the climate, and it must be confessed that neither observation nor experience confirmed previous impressions of the climatal advantages of the "sunny South," in which imagination had set the whole of France.

Were further proofs of the similarity of the climate on both sides of the Channel needed, they would be found in the state of the crops of the two countries. The Clovers and artificial grasses were being cut and made in both. The haymaking of natural grasses was hardly begun in either country. The Wheats from Boulogne to Paris were no forwarder than those from Bury to London. Barleys were later, and no better—Mangels and Sugar-beet hardly so forward in France as in England. Potatos, as a field crop, decidedly later, and with less top in France. Asparagus in the height of the season as a field and garden crop in the middle of June, cutting to cease by the end of the month. Rye, which is more grown, but little, if any, earlier than on warm poor soils in England. In a word, as far as the crops went, one might have fancied oneself still at home, only that the fields were so much smaller, there was less meadow land, and fewer live stock—the crops were more mixed, and the produce was uneven and widely varied.

Neither is the greater dryness of the climate nor the clearer air of France a pure gain to horticulture. It could hardly be insular prejudice that pronounced the French Strawberries less luscious, the French Roses less sweet or of less substance and persistency than English. No, our leaden skies, if any such remain after the melting heat of 90° in the shade, are not all against us horticulturally, as I am thankful that the north and east wind have leagued their forces together and proved successful for a time against the tropical heats that strayed here by mistake and threatened to clear our gardens of all their beauty and plenty with an ugly rush, and to rob us of our characteristically mixed, but on the whole, perhaps, unequalled English summer. *D. T. Fish.* [The climate of Northern and Central France does not vary greatly from our own. South of Lyons the "sunny South" begins, but it is not till the Mediterranean region is reached that a true southern climate is met with. EDS.]

Foreign Correspondence.

BRISBANE, QUEENSLAND: DENDROBIUM SUMNERI AND D. SUPERBIENS.—It gives to those here who are interested in the Australian flora great pleasure to see, from time to time, not only notices but illustrations in your journal of our plants. But when written in the style of that of Professor Reichenbach, of January 12, 1878, introducing his supposed new species of Dendrobium, D. superbiens, we certainly regret that a man of such high standing in the profession should write so contemptuously of a plant of which he had never seen a specimen. Dendrobium Sumneri, F. v. M., I can assure him, is by no means the poor thing he seems to think, but is deserving of all the praise he has justly bestowed on his D. superbiens. And when the learned Professor has the good fortune to see D. Sumneri in flower he will be quite ready to acknowledge that D. superbiens is but a variety of that species—the difference, although enough perhaps to warrant the florist in keeping them apart, yet being quite insufficient to establish a separate species. The following is the principal difference in the flowers when viewed together:—The segments of D. Sumneri are more imbricated giving to the flower a more globular appearance, the spur also is much shorter and white, while that of D. superbiens is of a purplish colour. The middle lobe of the labellum of D. Sumneri is almost truncate-apiculate. At times the pedicel of the lowest flower of the raceme of D. Sumneri is elongated from 2—3 inches in length. With regard to the Professor's remarks on the description he should bear in mind that Baron Mueller described the species from dried and fragmentary specimens, and yet no botanist need mistake the plant from either his or the description in the *Flora*. These descriptions will, doubtless, require alterations as the plants become better known, but too much praise cannot be given to Baron F. von Mueller for the pains so constantly taken by him to diffuse a knowledge of our indigenous plants. *F. M. Bailey, Keeper of Herbarium, Queensland Museum, April 29.*

A PEDESTRIAN TRIP ACROSS SOUTH AFRICA.

HAVING just returned from a collecting trip, which led me through all the South African colonies, where I met with so many enterprising countrymen, cursing the false and alluring reports made public as to the advantages of the country, I am desirous of giving correct idea of our possessions in South Africa.

Of course in these columns I must confine myself as much as possible to what is of horticultural interest; so that these notes will be limited to a few remarks taken from my journal of the overland trip from Delagoa Bay on the east coast of Africa to Cape Town on the south-west coast.

On October 8, 1877, I took a last look at the beautiful and extensive harbour of Lorenco Marquez. This view included the harbour with its Mangrove and Palm-fringed shores, the islands of Inyack, Skeffeen, and Elephant, with the calm and placid bosom of the Indian Ocean stretching far away into the distance. This place and the surrounding country, although so blest with lovely scenes, fertile soils, numerous rivers, abundant agricultural facilities, and commercial products, is far too famed as the death-place of Europeans, arising from a miasmic form of fever, which renders the whole coastland for about eight months out of the twelve uninhabitable to the white man. Various causes have been assigned for this pernicious effect, but according to my observations it undoubtedly arises from the decomposed nature of the soil, which in the coastlands is very low, so that when the rainy season sets in the majority of the country assumes a swampy aspect. These low lacustrine tracts of land are, as a rule, destitute of trees and shrubs, but generally produce an abundance of Arundo donax, which grows to a great height, and is very dense; occasionally clumps of Typha latifolia are met with. The soil in these swamps is of a dark slaty colour, very soapy to the feel, and adhesive after it has been sodden with rain.

Often when crossing these places during the rainy season, and sinking at every step, I have felt a stench arise almost sickening in odour, and greatly resembling sulphuretted hydrogen gas. At sunset a dark blue cloud seems to be resting upon the swamps, and gives the night air a raw, damp, and unwholesome flavour. Without a doubt it is this miasma which produces the fever on being inhaled by Europeans. In proof of this, if the wind at Delagoa be from the south-east, east, or due west, there is very little fear of fever; but if it blows from the north, north-east, or south, during the rainy season, fever is bound to be prevalent. On examining a map of South-East Africa it will be seen that the winds which bring the fever come over immense swampy regions, and the healthy winds from the sea, or the highlands of the interior. Most people suppose this fever is caused by the decomposed and rank vegetation, as in other tropical countries; but here there are no rich, rank primeval forests to produce a stagnant atmosphere; and besides, I have seen the fever raging where there is scarcely a bush—so that it must arise from the peculiar chemical composition of the rocks and soils which constitute these low-lying tracts of land.

We had great difficulty in procuring Kafirs to carry our baggage, &c., into the interior, but after a little bribing we succeeded in supplying all our wants, and started on our inland trip with high spirits, as the rainy season was just commencing, and we expected to see many fine things in bloom now that the long season of drought was over. The country from Lorenco Marquez to the foot of the Lobombo Mountains—a distance of 40 miles — is very flat, with occasional valleys and depressions of a swampy nature. Away from these swamps the soil appears to be extremely fertile, and of a rich brown sandy loam, in most places of a very great depth.

There is little cultivation beyond 20 miles from Delagoa, as the Kafirs, who would be glad to cultivate more, have no means of disposing of their produce, and therefore must be content to grow sufficient for their own wants, which consist of Maize, Sorghum, Pumpkins, Lathyrus amphicarpus, and a species of Phaseolus, the seeds of which are largely used for food amongst the coast Kafirs.

The land between the coast and the Lobombo Mountains is the only part I have seen in Africa which can lay claim to be a "wooded country." The scattered trees give a park-like appearance, and in places favourable to growth form thick belts of jungle by the production of immense climbers, which, with the help of a drawn-up undergrowth, blend the whole into a matted clump of vegetation. In the forest shades I greatly expected to find Orchideous epiphytes in all their glory; but, alas! my continual researches were fruitless. On all sides Ansellia Sandersoni was flourishing and displaying its large panicles of orange and brown-blotched flowers, and now and then I came across pieces of insignificant Angræcums, the best of which were Angræcum caudatum and arenatum. The terrestrial Orchids were in great variety, but none worth the florist's attention except Lissochilus speciosus, Disa polygonoides, and Satyrium carneum. The arborescent growth is almost entirely composed

of Acacias, such as A. giraffæ, A. horrida, A. caffra, Kigelia pinnata, and numerous species of Ficus. The Kigelia, with its Quercus-like habit of growth, good height, umbrageous and green foliage, elongated peduncles, suspended racemes of very large brown purplish flowers, and the remarkably large and Gourd-like fruit hanging from the lengthy peduncles, is very striking, and gives a marked aspect to the districts it grows in. This tree is distributed all over Tropical Africa, and is used for a variety of purposes by the natives. The flowers are exceedingly showy and numerous, the foliage is striking, and, but for its size, would make a good plant for British gardens. Another remarkable tree is a species of Feronia, resembling F. elephantum, which produces an edible fruit of a very agreeable nature, about the size and shape of an ordinary Orange, with a very indurated pericarp, containing a vast number of large seeds imbedded in a brownish pulp, which has the flavour of baked Apples when spiced with Cloves.

On the coast a few Cocoa-nut Palms are occasionally met with, but they are not indigenous, having been introduced by the Portuguese; and the same may be said of Phœnix dactylifera, Tamarindus indica, Punica Granatum, and a few other plants, which are scattered along the coast. Phœnix spinosa is very common near the coast, and I have seen it in a few places further inland; this Palm, according to its position, varies greatly in size and appearance, from a low bush to a height of 30 feet. It is a very useful plant, and supplies the natives with material for making mats, &c. *Chr. Mudd.*

(*To be continued.*)

Garden Operations.

KITCHEN GARDEN.

The termination of a prolonged period of humidity has been suddenly succeeded by one of an opposite extreme, so much so that a rainfall would now be very acceptable in this department, and, until it comes, watering will be an operation that will be imperatively necessary to such crops as Peas, Beans, Celery, &c., and likewise to salading subjects if they are to be had in the highest state of perfection. The experience of the past fortnight's aridity has so manifestly indicated the beneficial effect of mulching the crops which are suitable for it that I am constrained to reiterate my oft-repeated advice in favour of this important operation. If the advantageous conditions which have recently prevailed for exterminating weeds have been taken advantage of for the purpose, tidiness and order in this respect will now exist, and the preparation of ground which has fallen vacant from the removal of early crops of Peas, Cauliflowers, and Potatos, should be proceeded with, in order that the first suitable opportunity may be embraced to plant out the late crops of Broccoli, Brussels Sprouts, Winter Greens, &c. A reservation of this should also be made for a plot of Rosette Colewort, a most useful subject, which will provide an abundance of Cabbage through the winter months. We plant these at a foot apart every way. The sowing of these, which in a former Calendar I advised should be made about the second week in June, will by this time be ready either for transplanting into beds or other permanent places. In the case of this subject I advise the latter course to be adopted before the plants become drawn and weakly. In low and moist places it frequently happens that my early-planted Celery will not keep without decaying. Where such is the case it is advisable to plant out largely at about the present season. Keep the trenches which contain advanced crops of this subject well supplied with water. If some stimulant be added to it occasionally, it will accelerate growth immensely. Take up Shalots as soon as they are ripe, and when they are properly dried let them be stored away. By this time the Tripoli section of Onions which were sown last autumn will also be ripe enough to be removed off the ground entirely. As these will not keep for a long period, it is not advisable to preserve more than is actually required for use during the next month. If not already done, let a good plantation of Parsley be got out at once; sunshine will abound when it prevails. During the winter months this is much required, and it should therefore be planted in sufficient quantity to meet such demands. At about the third week in the current month sow Cabbage seed for the most forward supply for next spring, and Cauliflower likewise; sow also abundantly a good hard variety of Lettuce: none excel the black-seeded Brown Cos. These plants will be fit for planting in the ground when the spring crop of Onions is cleared off, and will be available for lifting for frames, &c., for early winter use. Endive should also be sown in quantity for a corresponding purpose. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

Whether the copious rains and the cool moist atmosphere that prevailed for so long a time during the early part of the season have been the means of satiating blackbirds and thrushes with insect food I know not, but certain it is that they are making a more determined onslaught on fruit now than I ever remember, and so persevering are they in their efforts to get at it that single nets, unless of very fine mesh, are of little avail. From their increased numbers and boldness of attack it would almost appear that they are aware of the Act in force for their preservation, as they put all at defiance, and pay their visits in the most open manner possible, instead of coming in the stealthy way one would suppose their thieving propensities would lead them to do. No one enjoys the sweet melody of these birds during early spring more than I do, but just now in gardens they are an intolerable nuisance, and I heartily wish they would betake themselves to the woods; but as they will not be persuaded to do this, the only course is to render their entry impossible. The only thing I know of that will do this is galvanised wire netting, which in the long run is far cheaper than ordinary fishing-net, such as is generally used for the purpose, as with the greatest care this will only last a few years, whereas the other is good for a lifetime. What we use here is about a yard wide, and this for single ordinary sized Gooseberry or Currant bushes is cut into lengths of 9 feet or so, which we then easily and quickly run round, and secure by means of a few ties where the ends meet. A piece of old net thrown over the tops makes all secure, and the fruit can be kept as long as it will hang on the trees with the most perfect safety. The best way, however, is to grow the late-keeping sorts in a quarter or border by themselves and fence them in with the wire netting, as then a greater number may be protected at less cost, and the netting come in for Strawberry beds or Raspberries first, and is thus made doubly useful. As regards this latter fruit, the double bearing kind should now receive every attention by way of mulching the ground over and giving the plants a good soaking of liquid manure to aid them in swelling their crop, which, with the great scarcity of Apples, will be more than usually valuable. Alpine Strawberries, too, are deserving of all the care that can be bestowed on them, and if kept well-watered now will bear almost continuously till late in the autumn. Treated in the same way, the Vicomtesse Héricart de Thury, that have been forced in pots and planted out in an open sunny position, will yield a second crop, as it is almost a perpetual bearing variety, and one of the most useful and best Strawberries in cultivation. Those who have not this excellent kind would do well to obtain plants of it at once, for if got in in well-prepared beds now they will bear fruit next season. In making fresh plantations to replace any becoming exhausted, one of the most important things is to start with good strong runners from fertile plants, for it often occurs, where large quantities are grown, that many among them are barren, and if stock is obtained from these they, too generally partake of the same character, and prove either abortive or do not fruit in the free manner they ought to do. As the weather is now dry and runners will be a long time rooting if left to themselves, the best way is to layer them in pots, in which, if kept duly watered, they will quickly become established, and may then be transferred to the beds without further check. Any now going out of bearing that are intended to stand another year will be greatly benefited by having the litter, runners, and all superfluous foliage cleared from among them in order to let in plenty of light and air to the crowns, but to denude them of leaves, as is sometimes done, is a barbarous practice, and has such a weakening tendency as to seriously affect the health of the plants. Digging amongst them, too, is likewise most hurtful, destroying as it does the principal feeders that are now actively at work in forming and building up the flowers for next season's crop. Instead, therefore of forking up the ground, a mulching of short manure laid on the surface, and a dose of sewage applied after, will do much to recruit their exhausted energies, which with those in dry shallow soils are now at a low ebb, after having had a heavy crop of fruit to carry. It cannot be too often reiterated or too strongly impressed on young beginners, that the principal part of next season's success depends in a great measure on the amount of assistance afforded now, and this applies not only to growing Strawberries, but to all other cultivated fruits, as what we obtain then has to be stored up in an embryo state before plants are denuded of their foliage and winter sets in. This being the case, such things as pyramidal Pears, Peaches, and other trees having heavy crops to carry, should now have a thorough soaking with liquid manure, which will not only aid very materially in swelling the fruit, but will enable them to form and develope plenty of flower-buds. In all cases, however, where watering is resorted to, a mulching should be given first, as then there is no loss by evaporation, and the roots are kept in a more uniform shape and get the full benefit of the moisture, whereas without it the soil cracks open and lets in large volumes of dry heated air, a thing to be avoided as much as possible. *J. Sheppard, Woolverstone Park.*

FRUIT HOUSES.

Pines.—The necessary provision for restarting the suckers which are to be taken off the plants which formed the early section of summer fruiters should be made at once, and that these may have the advantage of an undiminished force of solar heat and its concomitant influences to develope a growth for as long a period as possible prior to the advent of more unsuitable conditions. As soon, therefore, as the necessary arrangements are made, which should comprise a fermenting bed in a low damp house or pit, and the heat of it is in a settled state of about 95° at 8 inches beneath the surface, the suckers referred to should be taken off the parent plants and be potted at once into clean 5 and 7-inch pots according to the size of the sucker, and be watered over once in order to settle the soil firmly about the collar of the plants. For potting use good fibrous loam alone, and firmly imbed it in the pot, as by these means root-action will proceed more speedily than otherwise, and the ultimate progress in the plant will be much more satisfactory. The condition in the house for the first week should be rather close and moist, therefore shade effectually and give but little air, and lightly dew the plants overhead with a fine syringe once or twice every day according to circumstances. As soon as growth is indicated this state must be by degrees relaxed, and more sunshine and air admitted until such time as growth is well established, when ordinary treatment should be resumed. The growth in those plants should be accelerated as far as practicable, and therefore no delay in the next shift of these should ensue, but immediately the roots have firmly taken hold of the soil and before they become very much permeated together at the side of the pot, they should be put into the fruiting-pots, and the needful preparations be made accordingly. For Queens and Black Jamaicas 11 and 12-inch pots are best, and from 12 to 14-inch ones for other sorts; loam of the same kind as recommended above, only let it be in a more lumpy condition. A few half-inch bones may be added; to check the inroads of worms into the pots, a handful of soot or wood ashes dusted amongst the drainage will be effectual. The attention required in this department is now reduced to the minimum, and if the watering at the roots of these plants be judiciously done a satisfactory condition of all the plants will most certainly be assured. As the houses in this department become vacant a thorough cleansing of them should be effected. *G. T. Miles, Wycombe Abbey.*

Melons planted out some time ago will now be the better for having some soil added to the hillocks, which, while being done, should be trodden firmly. Regulate the plants, stop, &c.; watch diligently for woodlice, which are very destructive and troublesome pests, and if not well looked after would, in a very short time, overrun a large house, pit, or frame. The best and quickest way to destroy them is to pour boiling water along the ends and sides of the frames inside, the soil having been previously well trodden down. Slugs, too, are very troublesome at times not only in the Melon but in the Cucumber house as well, and to which the woodlice act as pioneers. These may be easily caught by looking into the structure in which the Melons are growing just before dark, when most probably they will be found either on the plants, or adhering to the woodwork in readiness to pounce upon their prey, and from which position they should be removed and, needless to say, destroyed. Lettuce and Cabbage leaves make very good baits for slugs, they serve a double capacity in the form of bait and food, inasmuch as most of the leaves may be seen in the morning regularly skeletonised, and under those not so eaten may be found the depredators, thereby through a little timely forethought saving from disfiguration perhaps some of our best and finest shaped fruits. Guard against red-spider and mildew. *H. W. Ward.*

Cucumbers.—Attend regularly to the stopping, thinning, &c. Beds showing signs of exhaustion should now be well top-dressed with an admixture of decomposed short dung and loam, and the whole well watered; after which keep the house, pit, or frame at a nice growing heat. Syringe the plants well, according to the state of the weather, twice a day. Frames from which Melons have been cut can now, if so required, be planted with Cucumbers, which will make a good succession to those now in full bearing. From frames of this description recently planted with Cucumbers we shall, when we commence some weeks hence, keep cutting Cucumbers till Christmas by attending well to the linings and external protection from inclement weather. Should woodlice be troublesome, which is very likely, pour boiling water over their haunts, which will speedily reduce their numbers, and as, to use a homely phrase, "prevention is better than cure," repeat the dose a few times a week. If mildew or red-spider should put in an appearance apply the usual remedies. *H. W. Ward, Longford Castle.*

THE
Gardeners' Chronicle.

SATURDAY, JULY 13, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY, July 14 — Baden Horticultural Society's Show
MONDAY, July 15 — Wolverhampton Horticultural Society's Show (two days).
WEDNESDAY, July 17 — Tonbridge Horticultural Society's Show. Oundle Horticultural Exhibition. Newport Horticultural Society's Summer Show. Tibshelf Floral and Horticultural Society's Show. Woodford Horticultural Society's Show. Brigg Flower Show. Spalding Horticultural Exhibition (two days). Blackpool Floral and Horticultural Society's Show (three days).
THURSDAY, July 18 — Luton Horticultural Exhibition. Uppingham Rose Show. Nottingham Floral and Horticultural Society's Show (three days)
FRIDAY, July 19 — Lea Bridge Horticultural Society's Show (two days). Royal Horticultural Society of Perthshire's Show. West of Scotland Rosarian Society's Show. Newcastle-upon-Tyne Horticultural Society's Great Summer Exhibition (two days).
SATURDAY, July 20 — Bromley Common Horticultural Society's Show. Beckenham and Alexandra Horticultural Society's Show Cleckheaton and District Horticultural Society's Show

THE report on the progress and condition of THE ROYAL GARDENS AT KEW, during the year 1877,* a copy of which has just reached us, is a remarkable document, and one we are glad to call attention to. We have not the former reports at hand to refer to, but our impression of the present one is that it is fuller in detail than its predecessors, and gives a better idea of the magnitude and variety of the work done at Kew. We greatly regret that it is not in our power, in the present crowded state of our columns, to do more than call attention to it, but probably we may make a few extracts from it at a future time.

Sir JOSEPH HOOKER'S report begins by an enumeration of the numbers of visitors during the year, and by the expression of his apprehensions for the safety of some of the stove plants which require heat, and moisture, and freedom from draughts—conditions difficult of fulfilment when such numbers pass through the houses. Reference is then made to the works necessitated in the Palm-house, Aroid-house, and Herbarium by the inundations of the winter and spring. Allusion is made to the wall along the Richmond road, and to the agitation for opening the gardens to the general public at an earlier hour than at present—an agitation mainly promoted by the local residents. Sir JOSEPH'S opinion, to which the highest regard should be paid, is that the earlier opening would be detrimental to the proper maintenance of the grounds and houses, and injurious to the main object for which Kew was established.

The principal results of Sir JOSEPH'S visit to America are hinted at, and the progress of science in that country noted in terms more favourable to the Americans than to ourselves. The Americans generally, it appears, know more about the progress of such establishments as South Kensington, Kew, the British Museum, than our own people as a rule do.

Some interesting statistics are given, from which it appears that the walks in Kew Gardens, which have to be kept in order, have a total length of about 15 miles. The number of visitors for the year was 687,972, 58,000 having visited the gardens on a Bank Holiday—August 6—while in two days, in January and February, the number sank to 24. The number of plants received from various persons was 9859, the packets of seeds 2135. On the other hand, the number of plants distributed amounted to 11,361, and the number of packets of seeds to 1941.

The principal operations in the several houses and outdoor departments of the garden and in arboretum and pleasure ground, during the year are alluded to, including a description of the new heating apparatus in the Palm-stove already noticed by us (p. 624, viii., n.s.), and then follows a most interesting and detailed report on the useful plants introduced to or sent out from Kew for growth on a large scale in the colonies, such as Chocolate, Cinchona, Indiarubber, Ipecacuanha, Liberian Coffee, Mesquit Beans, Tussock-grass, and a variety of other plants. Extracts from official correspondence relating to these and other plants are given, and they are interesting not only in themselves but as giving an idea of the magnitude of the interests with which Kew has to deal.

The physiological laboratory is well nigh complete, and has already been put to good use by Dr. BURDON SANDERSON, Mr. CHURCH, and others. The new herbarium and library, the largest and best ordered of their kind in the world, have been completed, and the transfer of the collections made without closing the buildings for a single day. When one thinks of the days and weeks which are supposed to be requisite merely for cleaning at the British Museum, the National Gallery, and some other institutions, and the limited time and opportunities afforded to students at those institutions, admiration for the administrative ability manifested at Kew is amply justified.

Lessons are given to those young gardeners who like to avail themselves of the privilege in physics, chemistry, structural, systematic, geographical and economic botany, and the result, we are glad to learn, is very satisfactory.

Lastly, we have, as an appendix, a carefully compiled list, by Mr. N. E. BROWN, of the Aroideæ cultivated in the Royal Gardens, Kew. This is a valuable list, so far as it goes, but it is limited to names and a few synonyms. It may be taken, we hope, as an indication that a complete *Hortus Kewensis* will hereafter be undertaken. To say the least, such a work would benefit a larger number of persons than a small colonial Flora. The completion of the *Genera Plantarum*, which may be looked for at no very distant period, affords a basis whereon to construct such a work as we now advocate—a work which would be of incalculable value to scientific horticulturists of all countries. The list of Aroids, though very extensive, does not include several species of recent introduction to the nurseries, but which have not yet found their way to Kew. In such a catalogue as we are alluding to such deficiencies should be supplied. This matter, however, is but a side issue, our present object is to call attention to the report, and to express our opinion that it amply justifies the pride which Englishmen feel in the premier botanic garden of the world and its dependencies.

* Clowes & Son, Charing Cross.

—— THE PROVINCIAL SHOW OF THE ROYAL HORTICULTURAL SOCIETY. — Some courage was demanded on the part of the Society to go on with its Preston Show. The strike, the commercial depression, the illness of the Local Secretary, the comparative want of interest felt in the matter, must have all operated prejudicially; and, indeed have produced a show not quite up to the average of former times. But, considering all the circumstances, it ranks much higher, and the old Society is to be congratulated on the good work it has achieved in thus reviving its Provincial Show. Mr. SHUTTLEWORTH'S illness is matter for great sympathy, for he has worked hard; and but for him we suspect there would have been no show. His fine collection of plants, however, bears testimony to his zeal and disinterestedness. Mr. COWELL, the local Assistant Secretary, has done his best to supply the absence of his chief, and has been ably backed by Mr. S. JENNINGS. Mr. JOHNSTON'S arrangements in the tents, though they do not look well on a small scale on paper, give great satisfaction on the ground; and Mr. BARRON, whose services were called in at the last moment, has maintained his well-merited popularity; while all thanks are due to Mr. TROUGHTON, of the Preston Nursery Company, for his valuable services. The weather, up to the time of writing, has not been too propitious; but we trust the endeavours made to progress in the right direction will meet with the success they deserve.

—— PARENTAGE IN HYBRIDS.—In the June number of the *Florist* a plate is given of the wonderful Pelargonium named after Dr. DENNY. The first flower of this variety—not matched since—caused us great astonishment at its deep purple colour dashed with orange-scarlet like a Masdevallia. Our statements were received with polite but scarcely concealed incredulity, and certainly no second flower, as far as we have seen, has reproduced the colouring of that particular pip; and again, the plate referred to, though a fair representation of the average flower, by no means recals that one memorable flower. We revert to the plant more particularly to cite the interesting history given of it in the *Florist* by M. SISLEY. "Its origin is rather strange," he writes. "It is a seedling from a double-flowered zonal, the flowers of which are dark red, fecundated with the pollen of P. peltatum lilacinum. Although fecundated by pollen of P. peltatum it has no signs of it except the colour. But I have had many instances of the same. Having fecundated many peltatums by zonals they always resemble the mother, and generally also the zonals fecundated by peltatum. Nevertheless, I have two hybrids partaking of both." This hardly coincides with Dr. DENNY'S views on the subject, but it is another justification of the view taken by ourselves, that at present the evidence as to the greater influence of one or other parent over the seedling is too conflicting for any general rule to be laid down concerning it.

—— TREE PLANTING IN LONDON.—The *Sanitary Record* announces that a gentleman interested in the subject of tree-planting is willing at once to give, through Mr. PETER HINCKS BIRD, of Norfolk Square, W., £1000 to ten parishes, in sums of £100 each, towards planting Plane trees in various parts of the metropolis where the need of such shade is greatest. This amount is offered simply to induce the parish authorities to interest themselves in this important matter. The option of refusal will be given to the neighbouring parishes of Paddington and Marylebone, and then those that first apply will be first on the list, subject to the approval of the donor.

—— TROPÆOLUM POLYPHYLLUM.—Some plants of this yellow-flowering species are now very attractive in Mr. PARKER'S nursery at Tooting, on spots where it is planted out permanently. It is a very showy plant, producing strong prostrate stems, several feet in length, with glaucous leaves, and numbers of large yellow flowers. At Tooting it is allowed to trail on the ground, and appears to enjoy an immediate contact with the cool, moist soil. It would make a useful plant to cover rockeries, rockwork, &c., if kept moist and cool.

—— HABLITZIA TAMNOIDES.—PAXTON doubts whether this plant is still in the country, and it is assuredly scarce in cultivation. Its merits as a hardy climbing perennial, however, should secure it a place in every garden whose proprietor loves plants. We saw it lately at Mr. WILSON'S, at Weybridge, where its profuse foamy masses of greenish flowers, like those of the Black Bryony (Tamus), could not fail to attract attention. The leaves, too, are peculiar in their very long taper points and crimped edges. The individual flowers are small but inconspicuous, but *en masse* they are very elegant, while even the single blooms seen under a magnifying glass afford a pleasant surprise, for if the ripening fruit be touched with the point of a needle or the point of a knife, off comes the top like an extinguisher, and reveals one relatively large glossy black seed—just like a ripe Plum in a dish. The plant has, we believe, tuberous roots, and as it is a native of the Caucasus it should be quite hardy.

—— THE SELECTION OF DESIGNS FOR BOWLING PARK, BRADFORD.—At a recent meeting of the Bradford Town Council, the Council proceeded to confirm a resolution of the General Purposes Committee, selecting, as the best competitive designs for the laying-out of Bowling Park, one marked with the letter B, which was given the first place (prize being 100 guineas), and another marked with the letter L, which was ranked second (prize 50 guineas) in order of merit. After doing so, the envelopes which had accompanied the two designs were opened, when it

was found that the authors of the B design were Mr. Lister Kershaw, landscape gardener, and Mr. George Hepworth, architect and surveyor, Brighouse; and that the authors of the L design were Messrs. Brockbank, Wilson & Molyneux, Manchester.

—— Fungus Spawn.—The attention of cultivators cannot be called too often to the danger of supplying mould to trees in orchard-houses or hothouses. The white mycelium, which in such cases are found between the wood and bark, belongs to one of the higher fungi, and not to those parasites which affect leaves. Still it is quite true that these are often propagated by means of the soil, and or this reason it is recommended to gather and burn

—— A Bombardment with Roses.—A correspondent of the *Daily News* relates a pretty incident of the reception given to the new Imperial Russian Commissioner at Philippopolis on June 8. Philippopolis is near to Kesanlik, the centre of the Bulgarian valley of Roses from whence comes the world-famous "attar," the most concentrated perfumed essence of the queen of flowers. What, then, more fitting than that the inhabitants should, in the exuberance of their joy, be desirous of giving to their new temporary governor a "rosy" reception. In our more robust clime public men, be they ever so popular, seldom receive a warmer greeting than can be given by the throats of thousands of sturdy Britons; but then what a heart-stirring greeting that is! Unpopular people, or those who may for the time welcomes, but surely none sweeter or in better keeping than that which thus greeted Prince Dondaucoff Korsacoff at the hands of the little girls of Philippopolis.

—— Cymbidium Parishii.—It may interest our readers to know that this new and beautiful Cymbidium is now flowering for the first time in Europe at Mr. Williams' Nursery, Holloway.

—— Populus angulata.—A Poplar that is not so well known as it deserves to be is Populus angulata, a North American species. When young it is sometimes injured by frost in this country, as it grows very rapidly and makes very thick succulent shoots. It is remarkable for the size of its leaves, which on



Fig. 6.—Platycerium Hillii, shown at Preston by Messrs. Veitch.

the leaves. This is notoriously true in the case of several of the fungi which attack cereals, and Léveillé has shown that it is equally true of some of the yellow parasites; and so it is very probably true of the parasite affecting Peach leaves, which is Lecythea pruni, Lév., a species which is noticed in *Gardeners' Chronicle*, 1864, under the name of Uredo Castagnei, M., but which does not seem to have been inserted in any list of British species. It is probably of exotic origin, for we have specimens from Port Louis, gathered by the late Mr. Ayres, and from Italy by Passerini, under the name of Uromyces prunorum, Fuckel. It was also sent from Valparaiso by Bridges, and Mr. Salway gathered it in Madeira. As regards the supposed fungus on Pear leaves, sent us by Mr. Sheppard, it is not a fungus but the work of a minute acarus, allied to that which is so destructive to Black Currants. *M. J. B.*

have refused to trim their sails to the popular breeze, sometimes get a reception composed of rotten eggs and brickbats. This is, however, but the occasional effervescent humour of the British mob. To *prima donnas* only do we offer an oblation of choice bouquets, but the sacrifice is offered up only after the offering has done its customary duty, so that the idea is robbed of much of its romance. The prettiest floral offering we make is, when lines of neatly-clad school-children cast flowers in the path of some favoured newly-wedded pair; but in Bulgaria they welcome Imperial Commissioners with positive volleys of Roses. Hundreds of pretty school-girls drawn up in lines on either side of the street in Philippopolis, each one having a perfect magazine of these floral missives, threw them with all their childish strength at the great official, singing sweetly songs in harmonious cadence. There may have been grander

young vigorous trees are often upwards of 1 foot long including the petiole. The general outline of the leaf is nearly triangular, especially on adult trees. On young trees they are more heart-shaped, with rather a deep sinus. We have measured leaves with a blade between 9 and 10 inches long and borne on a petiole nearly 5 inches long. There are some fine examples of this tree at the foot of the South Downs on the north side. In North America it attains a large size in the low-lying grounds from Pennsylvania and Wisconsin southwards. In the botanic gardens of the Real Casa at Caserta there is a tree upwards of 130 feet high, with a trunk between 3 and 4 feet in diameter. It is stated that the branches are very brittle, and therefore the tree should not be planted in exposed situations. The timber is quite useless, but, as Loudon observes, as an ornamental tree it forms a very stately object.

—— Cyprus.—The land of Venus must needs have flowers, and we do not suppose those flowers are all known in English gardens. There may be a chance now of getting new Crocuses and other nice things. Meanwhile, we hope shortly to publish some notes on the vegetation of the island.

—— Horticultural Society of the Rhine.—At the exhibition inaugurated by the federated horticultural societies of the Rhine at Darmstadt, on the 24th ult., the grand prize of honour given by his Royal Highness the Grand Duke of Hesse was awarded to M. Jean Verschaffelt, who was also so successful in various other competitions that the Grand Duke conferred on M. Verschaffelt the Cross of Chevalier of the Order of Philip the Magnanimous! Here we have to be content with bronze medals from the Societies, and the State ignores us!

—— The Colorado Beetle.—Where is the dreaded stranger?—is he coming?—are questions which may well be asked when we remember the scare of last year. So far we have not heard of him, but we must keep our eyes open nevertheless. Meanwhile it is comforting to know that our possible foe has his crosses too. A kind of mite (Uropoda americana) attacks the beetle in numbers and puts an end to its existence. A figure of the creature is given in the July number of the *American Agriculturist*.

—— Primula japonica.—Among the new plants that are introduced and distributed yearly there are more good ones either destroyed or neglected in cultivation than retained. Primula japonica, sent out a few years since, and distributed largely, was by some grown fairly but condemned by most, from the fact that only a few took the trouble to find out its proper position. The plant evidently requires a moist, partially shaded position. In the remarkable gardens of Mrs. Warner, of Hoddesdon, there has been one of the finest beds of this plant that can possibly be conceived. The flower-spikes are about 2½ feet long, with from five to six whorls on a spike, and Mr. Williams, the head gardener, the father of Mr. B. S. Williams, states that it had been the most gorgeous bed he had ever seen.

—— Diseased Potatos.—We regret to learn that many of the Potatos lately received from Cherbourg, Jersey, and Guernsey are in many instances so much diseased as to be totally unsaleable.

—— We are happy to notice the increase of institutions for the improvement of young gardeners in their profession, and in the absence of any proper school of horticulture doubt not that they will do much good service. One means by which good might be done is by setting suitable questions to be answered, and the replies examined by some competent person. To show how this might be done, we cite some questions put at a recent examination of the Michigan State Agricultural College, though some of the questions, we must admit, are vague enough:—

Landscape Gardening.

1. Name three trees peculiarly adapted for ornamental screens.
2. Give the preliminary considerations in the choice of a place as to soil, shape of lot, climate and site.
3. How will you make a good walk after it is laid out?
4. Name ten first-rate evergreens for our climate.
5. What are picturesque objects, and where are they appropriate on a place?
6. How can you show originality without avoiding good taste?
7. Where are suitable places on a lawn for single trees or for groups?
8. How can you increase the apparent extent of a place? How best to manage the foreground of a water view?
9. Define richness and polish.
10. What is gradation? appropriation?

—— Flower Show Fixtures.—The annual exhibition of the National Carnation and Picotee Society will be held on Saturday, Monday, and Tuesday, August 3, 5, and 6, in conjunction with the great Cottagers' Flower Show of the Manchester Botanical Council, in the Botanical Gardens, Manchester.

—— Gardening Changes.—We are informed that Mr. George Merritt, late foreman at Wrotham Park, Barnet, has been appointed gardener to Lord Dacre, Kimpton Hoo, Welwyn.

Home Correspondence.

Injurious Insects.—The present season appears favourable to snails and slugs, but as far as my own observations go, equally so to many of our common insect foes. The American blight, which had been well extirpated in my own garden, reappeared early in the season on almost every Apple tree, and in one or two of the more neglected orchards near hung down in large flocky masses. The Carrot maggot—"rust" as it is called—is unusually fine and powerful in its workings where noticeable; Onion-fly has appeared, and the Celery-leaf miner I notice as particularly strong on a patch of plants about 15 feet long by 3 feet broad, exposed to afternoon sun, and clear overhead; whilst two patches near, shaded by overhanging trees, and on soil freshly turned up from some depth, and freshly manured, are comparatively free. I also have noticed the larvæ of Psylliodes chrysocephalus (a small dark greenish beetle, much resembling the Turnip-flea beetle, to which it is nearly allied) burrowing in considerable numbers in the stems of last year's Turnips left to run up to seed. As far as I see, it chiefly affects the stem and the petioles of the leaves, but in some cases it had channeled galleries both in the outer coats and in the centre of the root, and in this position is capable of doing a good deal of mischief; the channelings merely in the centre of the stem, and the occasional ones in the petioles, did not appear to cause much injury. The larva is of some interest for microscopic examination, from the great power of its strongly-toothed jaws, and also its powers of vitality—a specimen which had been decapitated so that the cut dried before the contents could escape living two hours and seventeen minutes after the operation, with sufficient muscular power to raise either extremity in the air (on disturbance from a slight prick), remaining for the first fifty-five minutes. As far as I see at present, the mixture sold as Little's Chemical Fluid—which, judging by its scent, is some form of carbolic acid—often answers well as an insect deterrent, used either excessively weak for syringing, or more strongly for watering. Turnips which have been treated with it are growing remarkably well, and when used undiluted with a brush or burr to form a circle round a plant in a rockery attacked by slugs I find it a perfect preservative. *O.*

Among the Strawberries.—Your correspondent "J. J. B." appears in no hurry to give the Vicomtesse Héricart de Thury Strawberry a trial; I would strongly advise him to be up and doing and not to lose a day in obtaining the true variety. I have grown most of the new sorts late years both for forcing and outdoor purposes, and I have certainly arrived at the conclusion that the above variety has outrivalled all other sorts which I have grown, both as regards quantity, quality and colour. When visiting a friend last March (a large grower of Strawberries) I was informed by him that the night previous, having a large dessert to supply, he sent three dishes of Strawberries, namely, President, Sir C. Napier, and the Vicomtesse Héricart de Thury; the following morning one of the guests asked him the name of that delicious Strawberry of which he had partaken the night before. The gardener not knowing which of three it was, invited the gentleman to taste the several kinds; was quite satisfied that the Vicomtesse was the one, and pronounced it the best flavoured Strawberry he had ever eaten, as a forced fruit. If your correspondent will try and get some good plants well established early, he will with ordinary care have good ripe Strawberries to gather by the New Year. I have always found that the Vicomtesse under the same treatment as Keens' Seedling, President, &c., is the first to be gathered from. Another advantage which is gained in growing the Vicomtesse is that if the plants which were forced are planted outdoors about March or April a fair crop of fruit may be had after the general crops are finished, at least such has been the case with me. The Vicomtesse is extensively grown in this locality, and I have never heard of any one having cause of regret in growing this variety. *Thomas Carlton, Devon House, Epsom.*

Seedling Haworthias.—Reading Mr. Brown's notes on the variableness of seedling Haworthias in the *Gardeners' Chronicle* of June 29 brought to my recollection that about forty years ago the foreman then in charge of the succulent collections at Kew called my attention to a number of seedling Haworthias and Gasterias he had raised. Many of them varied from the parent and from one another, and it became evident to me that if they were preserved their intermediate forms would do much to lessen the value of the original typical species described by Haworth and others, the greater number of which were founded on plants imported direct from their native country. As no note of the parentages of these seedlings was preserved, and on considering that in time their history would be lost, and that some writer would be describing them as normal species, I therefore deemed it best not to retain them; one, however, escaped, and at the time of my resignation in 1864 was a conspicuous plant in the collection, but unnamed. In 1869 it was figured and described in the *Botanical Magazine*, t. 5812, as a species, by Sir Joseph Hooker, under the name of Aloe (Gasteria) Croucheri, so named in compliment to the then foreman of the succulent collection (not the raiser thirty years prior), and Sir Joseph says that its origin is unknown. This leads us to consider as to whether the originally imported plants of Gasteria and Haworthia which have been described as species are really normally distinct in Nature, or whether they are merely different forms brought about by lapse of time and climatal influences of localities. On this point I remember as long ago as 1824 or 1825 expressing my doubts to Mr. James Bowie (who had then recently returned from the Cape of Good Hope), as to the specific value of many of the forms he had discovered and introduced, and which were then being named and described by Mr. Haworth. On this he contended that as he never found different forms growing contiguous to one another, but always separate and in localities often far apart, he therefore considered them as distinct. Be that as it may, we have practical evidence that when brought contiguous to one another and cultivated in gardens, their progeny assume forms in many instances different from their parentage, thus rendering their original specific characters almost nugatory, and of which there are examples of similar variations in the species of many other genera when brought together under cultivation. *J. Smith.*

The Crops and the Weather in Stirlingshire.—We do not remember so favourable a season in all respects in Scotland as this is proving to be. We have had plenty of rain, and yet not too much; we have had plenty of dry weather and sun, and not too much, and in consequence the crops are moving along rapidly. The crop of hay is almost unprecedentedly heavy and of fine quality, and in the earlier districts is in ricks, and in a few days more will be harvested, except in the case of those laggards who do not deserve a crop. Potatos planted in the fields in drills 2½ feet apart are touching each other, and promise to be an abundant crop. Those in the garden are in plenty, and in good condition. Farmers are busy thinning their Turnips, and are quite at their wits' end to keep abreast of the work. Weeds are growing rapidly, but with a tropical sun and a free use of the hoe are easily subdued. Apples and Pears are very poor; small fruits ditto, with the exception of Raspberries, Strawberries, and Black Currants. The heat is greater than it has been for years. To-day the thermometer indicated 83° in the shade. *A. H.*

Berberis Darwinii.—I am glad to see attention drawn to Berberis Darwinii as a hedge plant, for unquestionably it is one of the most ornamental and useful that can be had for the purpose, where a fence of only moderate size is required. Although I have no experience of it as a barrier to cattle, I have not the least doubt but it would answer well mixed with the common Whitethorn, as it would interlace itself among the branches and form a perfect thicket, which would be impenetrable to anything larger than a rabbit if kept clipped and well looked after. Such a hedge would have the double merit of being exceedingly ornamental and serviceable, and as the plant is of an evergreen nature it would greatly assist in breaking the cold cutting winds of winter, and afford shelter to any stock in fields around which it may be planted. The intense bitter of its bark renders it disagreeable to cattle, so that it may be looked on as safe from their ravages, and as it may easily be raised from seed there is no difficulty in getting any quantity that may be required. This, like most of the Berberises, however, transplants badly, unless caught just at the right time, which is in spring immediately after the drying winds of March are over, and before the buds burst, when they will be found to succeed as well as most evergreens. When grown to form hedgerows in gardens as boundary fences or divisional lines, Berberis Darwinii should be clipped hard in directly it has done flowering, as then it makes just young growth enough to feather out and furnish a blaze of bloom the following spring. So managed they are quite a sight every year, and have a good effect as a background to herbaceous or other borders, where they rob the soil less than any other shrub with which I am acquainted. We have them here in these and similar positions growing as bushes, and being pruned-in annually they are nice and compact and show off very advantageously associated with Rhododendrons and plants of that class that flower about the same time. Besides being valuable for the above-named purposes, Berberis Darwinii does admirably trained on trellises or nailed to walls, where it may be made to cover a large space in a short time if the ground is well broken up previous to planting. × Berberis stenophylla, a more recent introduction, is likewise a very beautiful plant when in bloom, but is altogether of a different habit, being more procumbent and spreading,

and therefore specially adapted for planting on banks or other raised positions down which it can trail or drop over. On a rockery or any place of that kind it is just at home, and forms a very handsome object when in flower or fruit. *J. S.*

The Rainfall at Kylemore Castle, County Galway.—I send you the register of the rainfall here for June. It cannot fail to interest you, as being unprecedented even in this wet locality, and is perhaps the heaviest on record:—June, 1878: —1st, —; 2d, —; 3d, .66; 4th, .23; 5th, .46; 6th, 1.94; 7th, .66; 8th, .01; 9th, .35; 10th, .22; 11th, .65; 12th, —; 13th, —; 14th, .03; 15th, .33; 16th, —; 17th, .33; 18th, .19; 19th, .63; 20th, .64; 21st, .08; 22d, .40; 23d, .43; 24th, 1.07; 25th, .42; 26th, .43; 27th, .77; 28th, .04; 29th, —; 30th, .35: total, 11.32 inches. In the whole of the month there were just six fair days, just with a dull leaden sky and cold north winds. *Jas. Garnier.*

A Double Stock.—I have hitherto believed that the well-known Stock Mauve Beauty, which invariably gives 75 per cent. of double flowers, was the most double kind that I knew of. I have however now in bloom a pyramidal white kind, obtained originally as a white intermediate, of which 125 plants now in full bloom as put out from the seed-pan from seed saved here last summer and sown in November, give twelve singles only, which is at the rate of a trifle over 90 per cent. of doubles. I got last year but a couple of singles from a few plants, and the present lot in bloom is the produce of the entire stock of seed saved. Calculating that ten single-flowered plants will produce half an ounce of seed, it would require that 3200 plants should be raised and planted out to give one pound of seed. *Alex. Dean.*

Some Remarks upon the Horse Chestnut.—The article written by Mrs. H. E. Watney, and published in the *Gardeners' Chronicle* of June 29, p. 828, upon the uses of the fruit of the above-named tree, is both interesting and well worthy of being more generally known. Loudon in his *Hortus Britannicus* gives the date 1629 as the time of its introduction into Britain, and that its specific name Æsculus is meant to denote food, which is no doubt derived from the large nuts being used as food for animals. The generic name Hippocastanum is not, however, so clear. It is supposed to have been derived from its possessing the properties of curing horses and other animals of cough. It has another feature equally suggestive of the name, which I believe is not commonly known. It is the perfect resemblance of a horse's foot, showing the hoof and nails of the shoe both over and under. This simple matter is easily displayed by cutting a lateral branch of last year's growth, slantingly at its base, and paring it down until it shows the shape of the hoof with its nails. The enclosed example will show it more perfectly than my explanation. *J. Webster.*

—— Unlike your correspondent, H. E. Watney (see p. 828), I have found cows eat Horse Chestnuts with great avidity without any preparation whatever. I well remember when a boy at home my favourite amusement when the nuts were ripe was to collect what had fallen in the garden and give them to eat, which they eagerly did; one in particular (an Alderney) was quite ravenous for them, and would come a considerable distance when called after them. I have always, however, been told that they have a bad effect on the milk, and have noticed a bitter taste in it sometimes after they had had an extra quantity. *W. H. Divers, Bandridge Court, Godstone, Surrey.*

Carpet-Bedding in the Neighbourhood of Romsey.—To those interested in carpet-bedding, and who may on "business or pleasure bent," be passing through Romsey or its vicinity, I would say pay a visit to Lockerby Hall Gardens (Mr. J. Budd, gr.); Norman Court, a place for which Nature, as well as Mr. Swansbury's artistic gardening, has done much; Broadlands, the beautiful residence of the Hon. W. Cowper-Temple (Mr. Thirlby, gr.); Mottisfont Abbey, nestling in the midst of hill and dale, wood and water, the quaint residence of Lady Barker Mill (Mr. Jones, gr.). Carpet bedding is carried on more extensively at Lockerby than at any of the places above-mentioned, and the designs and arrangements of colours have been very cleverly and neatly executed by Mr. J. Budd, and upon whom the well-kept gardens in general reflect great credit. The other places are also well kept, particularly Mottisfont Abbey Gardens, ably superintended by Mr. George Jones. *H. W. Ward.*

A Heavy and Fine Crop of Peaches.—In looking through the extensive range of houses at Norman Court a few days ago I saw in one house, about 23 feet long and 9 feet wide, one of the finest samples of Peach growing, without exception, it has ever been my good fortune to see. There are two trees growing in the house—fine established trees of Barrington and Grosse Mignonne Peaches; the former ripened a crop of 11 dozen to perfection, one fruit turning the scales at 12½ oz., and several other individual fruits weighing 10 oz., and the latter ripened the splendid crop—fine in size and finish—of flavour I am not in a position to speak—of 20 dozen fruit. *H. W. W.*

Apiary.

THE cold and wet weather of May and June sadly damped the hopes of many bee-keepers for an abundant harvest of honey in the present year. Up to June 20 the bees hardly gathered enough to keep themselves, so that when the hot weather arrived their energies were directed to fill up the vacant combs in the hive at a time usually devoted to filling supers. At this present date (July 8) the Lime trees are affording abundance of honey, with which the hives are being rapidly filled, and where these trees abound supers may yet be furnished. In addition to the Limes few honey-yielding flowers now remain except white Clover, and it is not every locality where this is in abundance; altogether, I fear the honey season of 1878 may be pronounced a failure, so much so that a bee and honey show announced to take place at Ealing on the 10th instant had to be abandoned, as not a single entry for competition was made. When bee-keepers find the yield of honey has ceased—which generally occurs before the end of July—all supers, filled or unfilled, should be at once removed; the delay of a few days only will often be fatal to the profit, for combs, being full of brood, much honey is necessarily consumed for nursery purposes, and the vacant cells in the main hive will surely be quickly filled by the only store at the bees' command—that in the super—until in a very little time nothing but empty combs will be left. Those who keep their bees on the old system of entirely breaking up those stocks it is wished to rob of their honey will likewise gain nothing by delay. It is a common practice to leave this work until after harvest, but except in localities where Heather abounds much more honey would be obtained early in August. I need hardly say the bees should on no account be destroyed. This practice is inhuman, wasteful, and unnecessary. Where frame hives are used it is a simple operation to shake or brush off the bees, and take away the honey-combs. Straw skeps can also be easily deprived of their bees by driving. The *modus operandi* of this has been so well and often demonstrated at many bee shows that how to do it is now pretty generally known; after once seeing it done it is found to be so easy that every bee-keeper vows to adopt the plan in his own bee garden in future. For the benefit of those who are yet ignorant of the operation I will as briefly as possible explain it. Provide an empty skep, a pail, two sticks about 15 inches long and 1 inch thick, 3 or 4 yards of stout string, and a long strip of calico or round-towel. Having selected the stock to be driven, blow into the entrance two or three strong puffs of smoke from tobacco, brown paper, or rags—either will do, giving the hive a smart tap or two on each side either with the open hand or the sticks, and then leave it for two minutes; the smoke and the jar from the blows will so alarm the bees that all make a rush at the honey-cells and fill their honey-bags, in which state they are harmless and all their pugnacity departed. Now boldly, without flinching, wrench the hive from its footboard and invert it (mouth upwards) in the pail; few bees will fly and fewer still be inclined to sting. Place on it the empty skep, mouth to mouth, and round the junction wind the round-towel, securing it there by a few turns of the string; now, with the two sticks, keep up a smart drumming on the sides of the full hive, and very soon the bees will run like a flock of frightened sheep from their full hive into the empty one. As soon as ever they begin to run the top hive may be freed, tilted up, and the whole passage of the bees watched, until only a few stragglers remain in the hive, lately so full of busy life. Adepts at this work will dispense with smoke, towel, and string, and commence the driving with tilted hive, so that the whole exodus may be seen from beginning to end. It may very naturally be asked, What is the use of the houseless bees now we have them? The answer is, Strengthen your other colonies with them, or, putting several populations together, feed them with sugar-syrup, and they will build a new set of combs, and form a valuable stock for next season. In breaking up the old combs, probably, a good deal of brood will be found. Those who possess a frame-hive may utilise this by fitting the various pieces into frames, and giving them to the bees to hatch out. In ordinary cottage bee-keeping the brood is sacrificed; in fact, often contaminating the honey by being bruised and strained with it. Whenever two or more lots of bees are united, all should be well drenched with syrup scented with a little peppermint; after this preparation fighting will seldom occur. The queens may be left to settle their own affairs themselves; or, rather, the workers will do so for them. One queen will be certainly left, although what guides the bees in their selection of the favoured one I know not. Those who would see the operation of driving performed, and the whole management of frame-hives by experienced hands, will do well to visit the exhibition of the British Bee-keepers' Association at the Royal Horticultural Society's Gardens, South Kensington, on August 6, 7, and 8 next. *John Hunter, Eaton Rise, Ealing.*

Notices of Books.

—— THE CHEMICAL CONSTITUTION OF PLANTS.—There really seems no limit to the energy and activity of Baron Von Mueller. Almost every mail brings us some evidence of his zeal and talent. This time we have to mention a work which will be most serviceable to chemists and vegetable physiologists, and which will we hope be placed in the hands of a London publisher as well as in those of Messrs. McCarron, Bird & Co., of Melbourne. The title of the work we now refer to is *The Organic Constituents of Plants and Vegetable Substances, and their Chemical Analysis*, by Dr. G. C. Wittstein, translated from the German original and enlarged and annotated by Baron F. Von Mueller. The plan of the work is alphabetical, each substance, such as absinthin, acetic acid, &c., being briefly described, its mode of formation and composition being also given. The formulæ are given according to both old and new systems. In the second part the plants yielding the substances before-mentioned are arranged alphabetically and according to their natural orders. Lastly, detailed explanations of the mode of analysing plants are given, together with sundry useful tables; the whole forming a valuable treatise.

—— Under the title *Flowers* the Rev. G. Henslow has published (Stanford) a small pamphlet containing an elementary description of some dozen or more common wild plants. It appears to us about the simplest and easiest introduction to the study of flowers that we have met with, and as its cost is only a few pence we hope its merits will be appreciated. It forms one of the series entitled *Simple Lessons for Home Use.*

—— Mr. Ellacombe's charming papers in the *Garden* have been republished under the title, *Plant Lore and Garden-Craft of Shakspeare.* In this work every passage is quoted in which Shakespeare names any tree, plant, flower, or vegetable production. A short account of each is given, identifying Shakespeare's plants with their modern representatives, with illustrations from contemporary writers, and with notices of any points of literary, botanical, and historical interest connected with the plants named. Those desirous of possessing the work should apply to the author at Bitton Vicarage, Bristol.

—— An excellent little volume devoted to *Flowers, their Origin, &c.*, by Mr. J. E. Taylor, has recently been published by Hardwicke & Bogue. It should be read by all those who care to know more about flowers than a mere superficial glance will tell them, and who do not care to worry themselves with the tiresome details of systematic classification. The work contains a popular digest of what is known concerning the formation and life of flowers, and their relationship to insects, &c. We shall probably allude at greater length to the volume on another occasion, but before the summer season is over feel bound to call attention to it.

—— Among the books on our table awaiting notice we may mention an interesting *Memoir of the Late Alfred Smee*, who to his many claims on our grateful recollection added those of an enthusiastic gar-

dener. The work is compiled by his daughter, and is published by Messrs. Bell & Sons. We shall revert to this volume on another occasion.

PUBLICATIONS RECEIVED.—Le Moniteur Horticole Belge.—Revue Horticole. Illustration Horticole. — Gartenflora. — Der Garten-freund. — Der Deutscher Garten.—Journal de la Société Centrale d'Horticulture. — Proceedings of the Aberdeenshire Agricultural Association. — Separatabzug aus den Sitzungberichten des Botanischen Vereins der Provinz Brandenburg (several numbers). — Gardeners' Monthly.—American Agriculturist.—Revue de l'Horticulture Belge.—Villa Gardener.—The Gardener.—Botanische Zeitung. — Report of the Professor of Botany and Horticulture, State Agricultural College, Michigan.

Reports of Societies.

The Provincial Show of the Royal Horticultural Society.

SPECIAL TELEGRAPHIC REPORT. *Preston, July* 11.

This has been a complete success so far as the exhibition is concerned, held a few years since at Belfast were very highly spoken of. The irregular banks provided for the display of the plants consist of gentle slopes instead of steps, which is a manifest advantage in the setting of the plants, since in most cases it gives them the desired inclination, while the use of ugly supporting blocks and other unsightly contrivances is done away with or reduced to a minimum. A considerable surface of water and a waterfall are introduced, and more or less utilised in setting out the plants for effect, a series of small green banks occupying the bays formed in the margin of the water, and a dozen Tree Ferns being tastefully distributed over the surface of the lake itself, being set just above the water-level. The effect from the elevated points marked 1, 2, 3, on the plan was very good, and was exceedingly creditable to the taste of the designer. A mass of rockwork on the bed marked 2 projected over the walk, and terminating in a waterfall dripping into the lake, was rather crude in design and tame in execution, but we learned it was the best that could be done in the time with the materials at hand. In any case the effect of this principal tent was very good, though the setting was here and there a little thin—a result contributed to by the absence of the Shuttleworth noble collection of plants in the competition, and their consequent exhibition in one corner groups of Crotons, and *y y* some groups of stove and greenhouse plants. At one end of the bed *z*, near to Mr. Williams' plants, were Palms margined with Pelargoniums, and at the opposite end another portion of the plants shown for Mr. Bull's Cups. In the centre was the rockwork overhanging the pathway, and the waterfall already alluded to.

At the end of this floral pavilion was a large circular tent devoted chiefly to hardy Ferns, and used also as a band stand. Beyond this there stretched out three long narrow tents, appropriated respectively to fruits, table plants, and cut flowers. A considerable space outside was occupied by implements, garden erections, and other garden requisites, of which there was a very fair display, while an ample area was reserved for promenading.

The whole of the arrangements were planned, and in great measure carried out, by the energetic local secretary, T. M. Shuttleworth, Esq., with the help of a most assiduous local committee, and Mr. Troughton, the manager of the Preston Nursery Company's grounds. Mr. Barron and his staff also rendered most important aid in carrying out the details of the several departments, and in bringing the exhibition to a successful issue.

The show as a whole may be regarded as a fairly good one, and would doubtless have been better had

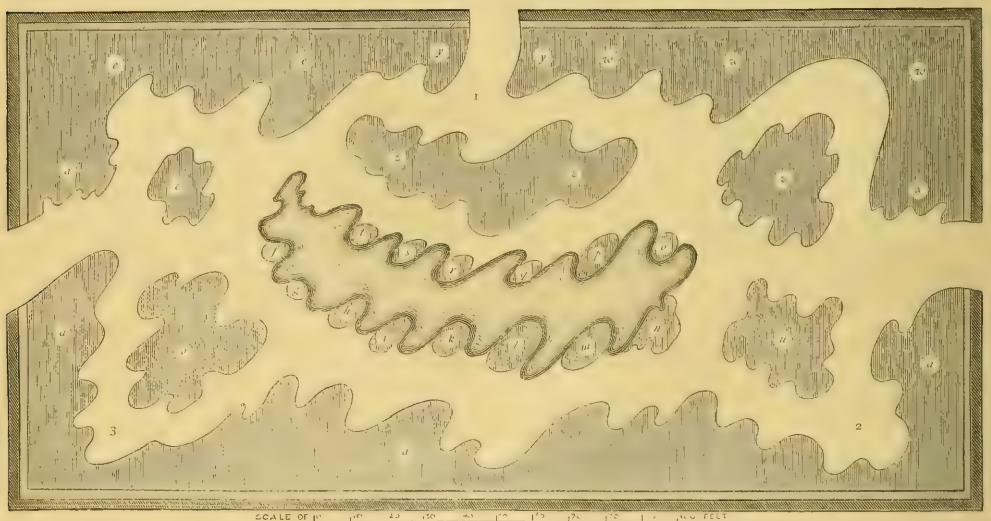


FIG. 7.—PRESTON SHOW: PLAN OF ARRANGEMENT IN THE MAIN TENT.

About 1 o'clock the Mayor and Corporation met Lord Aberdare, the President of the Royal Horticultural Society, and made an official tour and inspection of the various tents. Two o'clock was the time appointed for the judges' luncheon, to which a large number of the public were admitted, and this necessary part of the programme was commenced with fair punctuality, and engaged the attention of a select company for a couple of hours, during which the various loyal and usual horticultural toasts were duly given and warmly received, the President paying a well-deserved compliment to Mr. T. M. Shuttleworth—whose absence, from indisposition, was universally regretted—for the energy and ability with which he had carried out all the earlier stages of the arrangements. Mr. Veitch responded for the exhibitors, the Rev. C. P. Peach for the judges, and Mr. Moore for the Press.

The show took place in the grounds of the Preston Pleasure and Nursery Gardens Co., a pleasant spot about 2 miles out of Preston, in a field of some 30 or more acres, adjoining the nursery grounds. Not far from the entrance is a piece of ornamental water, over which Mr. Inman, of Manchester, has thrown a picturesque rustic bridge, which forms a pleasing object as seen in passing to the large plant tent, a parallelogram in three circles, the plan of which is given in fig. 7. The enclosed area and the surrounding ground has been designed and laid out by Mr. J. F. Johnson, landscape gardener, of Belfast, whose arrangements for the great show of the show. It is a pity that the rules of arrangement were so strictly adhered to in this case. The vistas and varying effects from different points of view were all well brought out, and we heard many compliments passed upon Mr. Johnson's felicitous arrangement, which though showing rather hard on paper and unattractive in the plan was really effective as worked out on the ground.

The distribution of objects in this principal tent will be understood by a reference to the plan. The exterior bank *a, a, a,* was filled with miscellaneous stove and greenhouse plants, with groups of Pelargoniums on many of the projecting points; *b* included the principal competing groups of new plants, with some Tree Ferns and Pelargoniums; *c* was filled with more new plants and succulents; *d* represented some miscellaneous plants, followed by stove and greenhouse Ferns at *e, e*; *f* and *g* were filled by groups of Dracænas; *h* by Adiantums; *i* by Orchids; *k* by Begonias; *l* by Dracænas and Orchids; *m* by Dracænas; *n* by Orchids; *o* by Dracænas; *p* by Orchids; *q* by Caladiums; *r* by Adiantums; *s* by Dracænas; *t* by Adiantums. The irregular bed at *u*, just opposite the entrance, was filled by a splendid group shown by Messrs. Veitch & Sons, and some of the groups shown in competition for Mr. Bull's Cups; *v* was occupied by similar groups from Mr. B. S. Williams, and Messrs. Rollisson & Sons. Nearly the whole of the bank marked *w* was occupied by a grand collection, already alluded to, from the gardens of T. M. Shuttleworth, Esq.; while *x* represented some not the health of the indefatigable honorary secretary broken down. Many remarkably fine plants were shown in the competing classes, especially by Mr. Tudgey, Messrs. Cole & Sons, Mr. Pilgrim, of Cheltenham, and Mr. Hammond, gr. to Sir W. Lawson; and the display of fruit and vegetables, though not better than we have seen in previous shows, was really of a very meritorious character. We only trust the weather may prove favourable, and that a financial success will be realised, which will place the continuance of these provincial shows—the best work the Royal Horticultural Society is doing—beyond a doubt.

STOVE AND GREENHOUSE PLANTS.

The principal class was one for sixteen, eight in bloom and eight with fine foliage, and three collections were staged—a very fine lot of plants. The 1st prize was won by J. F. G. Williams, Esq., Henwick Grange, Worcester (Mr. Tudgey, gr.), who had for fine-foliaged subjects large and good specimens of Stevensonia grandifolia, Cycas revoluta, Croton angustifolius, C. pictus, Dicksonia antarctica, Cycas circinalis, Pritchardia pacifica, and Gleichenia becistophylla, the latter a grand bush about 6 feet through and in admirable condition. The flowering plants were the strongest feature of the group, and included an immense bush of Erica Parmentierii rosea, about 5 feet through and well flowered; a fine plant of Ixora Dixiana, about 4 feet through; Allamanda grandiflora, from 3 to 4 feet through, and well bloomed;

Erica tricolor impressa, a very large bush, scarcely full out; Dipladenia amabilis, large and well bloomed, the flowers being exceptionally good; Clerodendron Balfourianum, also very fine; Ixora coccinea superba, &c. The 2d prize went to Messrs. E. Cole & Sons, Withington, near Manchester, who had the finest fine-foliaged plants of the two, but was not so strong in flowering subjects. The specimen foliaged plants were exceptionally bright and effective, consisting of a magnificent example of Cycas revoluta, large specimens, fresh and clean, of Latania borbonica, Dicksonia antarctica, Cycas Normanbyana, Pritchardia pacifica, and Crotons Weismanni, angustifolius, and Johannis, all well-developed plants, and grandly coloured. Of flowering subjects the exhibition had the fine white Ixora Colei, about 4 feet high and 3 feet through—thoroughly well bloomed; a nice fresh and well-flowered Dipladenia amabilis, Erica ampullacea Bainesii, E. venosa, a fine plant; Azalea Brilliant, A. President, and Bougainvillea glabra. The 3d prize was taken by the Preston Nursery and Pleasure Gardens Company (Mr. Troughton, manager), with a nice lot of fine-foliaged plants, the flowering subjects being weak. Mr. Tudgey was the only exhibitor in the amateurs' class for a dozen plants in bloom, and took the 1st prize with a capital lot, including a large and thoroughly well-bloomed Allamanda Hendersoni, a finely-flowered Dipladenia amabilis, the blossoms of which were exceedingly rich in colour, a large and well-flowered specimen of Ixora amboynensis, a very good Allamanda nobilis, and Clerodendron Balfourianum, good Ericas Paxtoni, and tricolor impressa. The highest award in the amateurs' class for six went to Edward Pilgrim, Esq., Fern Lawn, Cheltenham, who showed amongst others a large Erica Thompsoni, well-flowered and large examples of Bourgainvillea glabra, Clerodendron Balfourianum, and Anthurium Scherzerianum, &c. Mr. Pilgrim also took the lead in the competition with twelve stove and greenhouse plants, six to be in bloom, with a capital group, including amongst others a tall and noble specimen of Pritchardia pacifica, a remarkably fine Cycas circinalis, a large and well-furnished Latania borbonica, a fine Phormium tenax variegatum, and Croton longiflorus, well furnished and admirably coloured; a very nicely flowered Dipladenia Brearleyana, a fine plant of a good broad-spathed form of Anthurium Scherzerianum, Stephanotis floribunda, &c. The 2d prize was taken by Miss Ffarrington, Worden Hall, Preston (Mr. Hutchinson, gr.) who had a tall and handsome specimen of the variegated Pine-apple as her chief specimen. With six Heaths Mr. Pilgrim again came to the front with a neat lot of medium-sized plants, including as varieties E. ampullacea, E. Aitoniana Turnbullii, E. Massoni major, &c. Mr. Tudgey was a good 2d in the same class with similar-sized plants of E. Cavendishiana, E. Paxtoni, and E. ferruginea, &c. In the nurserymen's class for a group of 100 miscellaneous plants the 1st prize went to the Preston Nursery Company, and the 2d to Messrs. F. & A. Dickson & Sons, of Chester, both showing nice collections of medium-sized fine-foliaged plants, the former of which were of the best quality in point of cultivation. Messrs. E. Cole & Sons came in 1st in the nurserymen's class for twelve stove and greenhouse plants, and the Preston Nursery Company were again placed 2d. The Withington collection consisted of medium-sized plants, in excellent condition and well-flowered, of Darwinia tulipifera, Allamanda cathartica, Statice profusa, Erica retorta major, E. Shannoni, E. venosa, and E. tricolor Wilsoni superba. In the 2d prize group the best examples were of Statice profusa and Tremandra verticillata.

Fine-Foliaged Plants.

Next to the classes previously mentioned those for fine-foliaged plants, including Palms, Dracænas, Crotons, &c., were the most liberally responded to, and were employed with fine effect in the large tent. For six distinct Mr. Pilgrim was placed 1st, with a capital lot, including a handsome example of Thrinax elegans, a tall and fine Encephalartos villosus, Latania rubra, Croton pictus, &c. The 2d prize in this class was well won by J. Forshaw, Esq., Fulwood, Preston (Mr. James Rigg, gr.), who staged a particularly well grown lot of plants, consisting of Davallia Mooreana, about 5 feet over, Crotons pictus, Weisemnanni, and majesticus, bushy plants, about 3 feet high, and remarkably well coloured; a good unnamed seedling Lomaria, and a large pan of Dioncea muscipula. The amateurs' class for nine was an exceedingly good one, and here R. B. Dodgson, Esq., Blackburn (Mr. T. Osman, gr.) came in 1st, with a very striking group, the central object in which was a magnificent example of Cycas revoluta, with a spread of branches about 8 feet over. The other specimens included a large and showy specimen of the very distinct Anthurium crystallinum; finely grown and coloured specimens of Croton pictus and C. Disraeli; a large and handsome Livistonia altissima, and a capital Alocasia metallica, about 4 feet over, and well furnished. The next award of the judges went to Sir Wilfred Lawson, Bart., M.P., Braywick, near Carlisle (Mr. Hammond, gr.), who had a particularly good lot of tall, fresh, and finely developed specimens of Dasylirion glaucum, Dracæna indivisa, very fine; Dracæna Youngii, well coloured; Cocos Weddelliana, Phormium tenax variegatum, a capital Cycas revoluta, &c. Mr. Tudgey came in 3d with a fine lot, including a noble-looking plant of Encephalartos Vroomi, a Latania borbonica of noble proportions, and capital specimens of Geonoma gracilis, Pandanus Veitchii, Sarracenia purpurea, and Pritchardia pacifica, &c. In a collection from Mrs. Birchall, Ribbleton Hall, Preston (Mr. Williams, gr.), we noted a beautifully grown plant of Lomatia salicifolia, a tall and well-furnished Yucca aloifolia variegata, a very nice Dracæna Draco, and a good example of the deep green-leaved Croton Hookeri, &c. The amateurs' class for six Crotons brought out two very good groups from Sir Wilfrid Lawson's gardener and Mr. Pilgrim, the last-named securing the chief prize. The plants were from 3 to 4 feet through, well furnished with ample foliage, and nicely coloured; and the sorts shown C. Weismanni, undulatus, Johannis, Rex, Disraeli, and picturatus. The Braywick plants were also an admirably grown lot, and, thanks to the excellence of the Braywick water, capitally coloured: his C. Johannis was especially effective in this respect. The last-named exhibitor was also 1st for three distinct Palms, with nice young specimens of Acanthorhiza Warscewiczii, Areca Verschaffeltii, and Chamærops humilis tomentosa. Caladiums were rather scarce in the class for six, and of no particular merit, but the two classes for Dracænas brought a capital lot of plants. The best amongst amateurs came from R. B. Dodgson, Esq. (Mr. T. Osman, gr.), medium-sized, but neatly grown and very fresh specimens of D. Casanovæ, Baptisei, Berkeleyi, Mooreana, Nitzschnerii, &c. Mr. Hammond was a very good 2d, with taller plants than his more successful rival, but not quite so fresh looking. The next lot were by no means so good. The nurserymen's class was for twelve, and here Messrs. William Rollisson & Sons came in 1st with a very fine group of plants, well grown, well coloured, and very fresh, the sorts represented being Goldieana, Regina, Salmoni, amabilis, Youngii, Gladstonei, Nitzschnerii, Guilfoylei, &c.; Mr. B. S. Williams was 2d with a very good lot also, including most of the new ones sent out by him this season; the Preston Nursery Company was 3d.

Orchids.

Of these there were not many, but the plants staged were of excellent quality for the month of July. The amateurs' class for twelve brought out an admirable group from R. B. Dodgson, Esq., Blackburn (Mr. T. Osman, gr.) and which easily secured the highest award. The plants were in a nice fresh condition, and included Aerides odoratum majus, with nine spikes, Vanda suavis, with seven spikes, a very healthy plant; Dendrobium densiflorum, nine spikes; Cattleya Mendelii, with eleven grand blooms; Cypripedium Veitchii, with five flowers; C. villosum, very good; Dendrobium nobile, about 2 feet through and full of flowers; Cattleya Warneri, with thirteen beautifully coloured blooms; and Dendrobium Schrœderi with fourteen spikes. The 2d prize went to Dr. Ainsworth, Higher Broughton, Manchester (Mr. E. Mitchell, gr.), who had a fairly good group, including Lycaste Skinneri pallida, Phalænopsis grandiflora, Aerides Veitchii, A. Dayanum, with eight spikes, A. Lobbii Ainsworthianum, with very fine branched spikes. In the nurserymen's class for twelve Mr. B. S. Williams took the 1st prize with a very nice group, including a very good Cypripedium niveum, Dendrobium Bensonæ, Cattleya Mendelii, with sixteen good flowers; C. Leopoldi, with three good blooms; Cypripedium barbatum superbum, Epidendrum vitellinum majus, Dendrobium formosum giganteum, D. densiflorum, Lælia purpurata, five fine spikes; Aerides odorata majus, very good. For six Messrs. William Rollisson & Son came in 1st with Oncidium macranthum, with eight flowers; a very nice Dendrobium glumaceum, a good pan of Cypripedium niveum, the new Dendrobium suavissimum, and Cypripedium Parishii with eight good spikes.

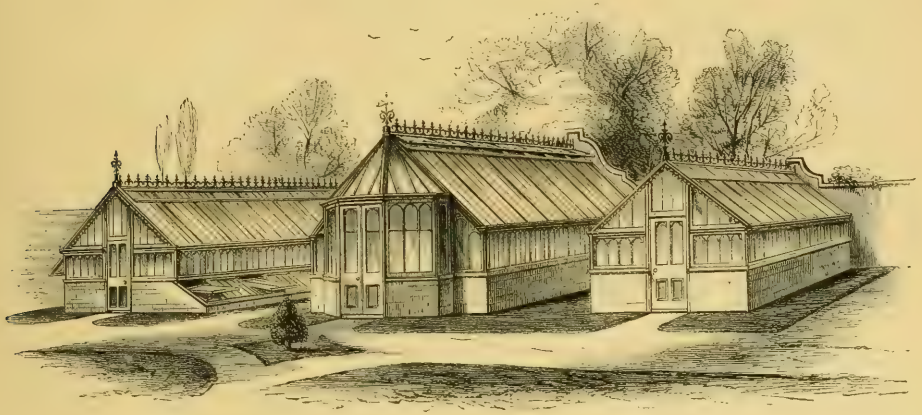


Fig. 8.—Preston Show: Messrs. Messengers' Houses. (see p. 58.)

Ferns.

Some good exotic Ferns were shown in the several classes. In that for six plants Mr. Pilgrim was 1st, his collection containing a fine Davallia Mooreana (pallida), Sadleria cyatheoides, three good Gleichenias, and the rarely seen Aglaomorpha Meyeriana, with its remarkably handsome broad sterile and contracted fertile fronds. Mr. Osman, gr. to R. B. Dodgson, Esq., was 2d, and showed a fine Cyathea Burkei, with a 3-feet stem and fine spreading head; Cyathea dealbata, Dicksonia antarctica, Gleichenia rupestris, a fine plant, 5 feet through; G. Speluncæ and G. rupestris glauca—all well grown and well furnished. In one of the collections of nine plants was a nice specimen of the neat-growing Adiantum Hendersoni, a plant rarely seen at exhibitions.

The class for two Tree Ferns brought only one exhibitor, Mr. D. Chapman, of Manchester, who showed fair specimens. Three Tree Ferns were better shown by the Preston Nursery and Pleasure Gardens Co., who had a very good plant of the elegant slender-stemmed Alsophila Leichardtiana, the others being Dicksonia squarrosa and D. antarctica.

The nurserymen's class for twelve exotic Ferns brought into the field Messrs. E. Cole & Sons and the Preston Co. The former had the best lot, which contained nice medium-sized fresh-looking plants of Gleichenia Mendelii, G. rupestris, G. Speluncæ, and G. flabellata, a vigorous young Cibotium princeps, a fine mass of Pteris scaberula, Davallia polyantha, and Thamnopteris australasica. The Preston Co. had a large and stately Cibotium regale, C. Schiedei, a healthy young Brainea insignis, and a very fine plant of Adiantum cardiochlæna, one of the handsomest of Maidenhairs.

The groups of six Adiantums are always interesting, and brought a good competition. The 1st prize went to Mr. Osman, gr. to R. B. Dodgson, Esq., who showed A. formosum, cultratum, cuneatum, tenerum, Farleyense, and gracillimum, all well-grown plants, of tolerably good size. Mr. Williams, gr. to Mrs. Birchall, was 2d, with good plants of A. gracillimum, concinnum, concinnum latum, Ghiesbreghtii, and formosum, and a less perfect A. Sanctæ Catharinæ.

British Ferns were well shown, and rather numerously. The 1st prize for twelve plants was awarded to Mr. T. Bolton, Fern Cottage, Warton, for a remarkably finely-grown lot, consisting of Athyrium F.-f. plumosum Stansfieldii, and A. F.-f. plumosum Barnesii, Osmunda regalis cristata, Lastrea F.-mas ramoso-cristata, and L.F.-mas grandiceps, Scolopendrium vulgare crispum, Athyrium F.-f. Victoriæ, Polystichum aculeatum gracile cristatum, Trichomanes radicans delicatum, Polystichum angulare ramosum, and Polypodium vulgare cornubiense. For six British Ferns Mr. Pilgrim was 1st with Lastrea Filix-mas cristata angulata, Polystichum angulare proliferum, Athyrium Filix-fœmina plumosum, Lastrea F.-mas grandidens, Osmunda regalis cristata, and a Scolopendrum, which appeared to be rather digitatum than ramosum, which name it bore. In a collection from the gardens of Levens Hall was a very curious variety of Bracken, named Pteris aquilina crispa Craigii. Some very interesting varieties of British Ferns were also included in the collection staged by E. J. Lowe, Esq., of Nottingham.

New Plants.

The competing exhibitors in the nurserymen's classes for new plants were Mr. W. Bull and Mr. B. S. Williams. Mr. Bull took the 1st prize with a very fine group in the class for twelve new and rare plants, not in commerce, consisting of Philodendron Carderi, a species with dark green leaves, shaded with bright green, and having a rich velvety lustre; Aralia concinna, in the way of spectabilis; Dieffenbachia regina, with broad pale yellow-green leaves, having few scattered spots, and narrow edge of dark green; Lastrea aristata variegata, now developing into a beautiful variegated Fern; Anthurium insigne, figured by as under the provisional name of Philodendron Holtonianum; Croton formosus, with stiff sword-shaped leaves, having yellow ribs changing to red; Dracæna Bijou, a very dwarf and compact variety, with numerous small bronzy leaves, having a broad edging of red; Davallia fijiensis, with its finely-cut fronds, and Dieffenbachia Leopoldi, with its contrast of rich bright green and ivory, both previously figured by us; Dipteris Horsfieldii, not looking too prosperous; Zamia princeps, with beautiful pale green pinnate fronds, having narrow tapered pinnæ; and Artocarpus exsculptus, a green pinnatifid-leaved plant, with hairy crenated lobate segments. Mr. Williams, who showed in the same class, and was placed 2d, had the handsome Alsophila Macleayi, Aralia nobilis, with broad oblong wavy leaves; Kentia neogranatensis, with having broad pinnate segments; Adiantum Williamsii, fig, 4, p. 44. Croton Williamsii, with broad obovate-oblong acuminate leaves, with yellow ribs, veins, and flush and changing to a crimson red; Aralia spectabilis, pinnate leaves, with ovate-oblong pinnatifid segments; Grammatophyllum Nortoni, with red stems; Pandanus inermis, Dracæna superba, with erect narrow red-edged bronze leaves; Caladium hybridum, and Croton albicans, with large oblong leaves, with creamy white rib and veins.

In the next class, for twelve new plants sent out in 1876-8, Mr. Bull was 1st with Alocasia Johnstoni, Doodia aspera multifida, Adiantum princeps, Cibotium Menziesii, Dracæna Goldieanaa, Anthurium Veitchii, Bowenia spectabilis serrulata, Lomaria discolor bipinnatifida, Dieffenbachia Shuttleworthii, with a silvery-feathered midrib, see fig. 5, p. 45; Croton roseo-pictus, with fine broad obovate-oblong leaves, having well-defined yellow ribs and veins changing to red; Catakidozamia Hopei, a bold pinnate Cycad, with pinnæ 6 to 8 inches long; Cyphokentia macrocarpa, a noble-looking Palm, with pinnate leaves, the pinnæ broad and bronzy-red when young; and Croton Mortii, with broad obovate leaves marked with clear yellow ribs and veins.

In the amateurs' class for six new and rare plants Mr. E. Pilgrim, Cheltenham, was 1st. He showed a nicely bloomed plant of Rhododendron Duchess of Edinburgh, and the bright carmine Erica opulata, with Fourcroya Lindeni, and Crotons Queen Victoria, Prince of Wales, and regina. Mr. Hammond, gr. to Sir W. Lawson, Carlisle, also showed in this class, his plants being Phyllotænium Lindeni, Croton nobilis, Kentia Belmontiana, Lomaria discolor bipinnatifida, Rhaphia humilis, and Dracæna Robinsoni. A new Croton, named Hendersoni (the second of that name), with red petioles, and particularly bright yellow variegation, from Mr. D. Thomson of Drumlanrig, received a First-class Certificate; another with trilobate leaves, splashed all over, Aucuba-fashion, with yellow, was passed for the present. Mr. Pearson, of Chilwell, also received certificates for three seedlings of Pelargonium echinatum, bright-looking spotted flowers, with rosy-tinted ground colours, named respectively Beauty, Ariel, and Pixie.

Mr. Bull's Cups for new plants did not bring a very full competition. The 1st prize for private growers was taken by Mr. Hammond, gr. to Sir W. Lawson, who showed Macrozamia Mackenzii, Dracæna Goldiana, Artocarpus Cannoni, Brahea filamentosa, Aralia elegantissima, Croton Rex, Lomaria Dalgairnsiæ, Croton Disraeli, Gymnogramma Martensii doboydensis, Dracæna amboinensis, Aralia filicifolia, and Maranta inscripta. In the 2d lot, shown by Mr. Tudgey, gr. to J. F. G. Williams, Esq., Henwick Grange, was a good Brahea filamentosa, Ixora regina, nicely bloomed; the curious interrupted Croton torquatus, and Croton Mortii, a bold-leaved variety with well-marked variegation. The prize in the nurserymen's class was taken by Mr. Williams, who had large specimens of Cibotium pruinatum, and of Sadleria cyatheoides, Croton Challenger, Panax laciniatus, Dracæna Goldieana, Artocarpus Cannoni, Croton splendidus, Dracæna Robinsoni, Brahea filamentosa, Anemidictyon Phyllitidis var. tessellata, Croton princeps, and Aralia filicifolia. In the private growers' maiden class the 1st prize was withheld, and the 2d awarded to Mr. McIntyre, gr. to the Hon. A. C. C. Maxwell, Dumfries. In the nurserymen's maiden class the 1st prize was taken by the Preston Nursery and Pleasure Garden Company, who showed Hibiscus Colleri, Panax laciniatus in flower, Croton splendidus, Adiantum tetraphyllum gracile, Croton Hendersoni, a fine bold-leaved sort; Lomaria Dalgairnsiæ, Aralia elegans, Ixora regina, Croton Rex, Croton picturatus, Artocarpus Cannoni, and Acalypha marginata.

Florist's Flowers.

These call for very little comment at our hands, so poorly were they represented. Zonal and Show Pelargoniums were the best represented of all, and these only by second-rate examples, and very few of them. In the class for six show varieties the 2d prize only was awarded, and that went to W. Birley, Esq. In the corresponding class for fancy varieties there were no entries at all. The class for nine brought a nice collection from Mr. C. Rylance of Ormskirk, consisting of fairly well-flowered plants of Mrs. Bradshaw, Queen Bess, Digby Grand, Claribel, Prince of Wales, &c., and to them the 1st prize was awarded. A similar number of fancy varieties also gained a first prize for the same exhibition. For six Zonal Pelargoniums, W. Birley, Esq. (gr., Mr. G. Newton), was 1st, with large, fairly well-flowered, but rather rough specimens of Madame Vaucher, Le Grand, Mrs. W. Paul, William Underwood, and Miss Skipworth. J. B. Jones, Esq., came in 2d. The best nine, a neat and well-grown lot of plants, were contributed by the Preston Nursery Company, and Mr. C. Rylance took the next award. Fuchsias were very poorly represented, only one or two collections being staged. The 1st prize for six went to T. Dodd, Esq., Swallow House, Penwortham (Mr. Hutchinson, gr.). Tuberous-rooted Begonias were also in poor form, except half-a-dozen sent by Messrs. John Laing & Co., of Forest Hill, which consisted of nicely bloomed plants of Lælia, John Laing, Gloire de Nancy, Baronne Hruby, and F. M. dos Santos Viana, and which took the 1st prize in their class. Of Gloxinias there was also only one group, a well grown and a well flowered lot of plants, which, however, had suffered somewhat in travelling.

Cut Flowers.

This department was somewhat less extensive than usual. The Roses were by far the best feature, being of exceptionally fine quality, though limited in numbers. Messrs. Cranston & Co., Hereford, were well 1st with seventy-two distinct varieties, having a remarkably fine lot, including especially fine blooms of Princess Beatrice, Camille Bernardin, Annie Wood, Marie Baumann, Paul Néron, Antoine Ducher, Le Havre, Mons. Etienne Levet, Duke of Wellington, Marquise de Mortemart, Madame Lacharme, Dupuy Jamain, &c. The 2d prize collection, also a very good one, came from Mr. G. Davidson, of Hereford, and in this collection also were singularly good examples of Dupuy Jamin, Mons. Etienne Levet, Marie Baumann, Alfred Colomb, Madame C. Crapelet, Xavier Olibo, Auguste Rigotard, and Madame C. Wood, &c. If Hereford cleared the board in the last class Oxford did the same for the next one, which was for forty-eight varieties, with which Mr. Prince was 1st and Mr. Corp 2d, the 3d prize going to Messrs. F. & A. Dickson & Sons. Mr. Prince's collection was a superb one, every bloom being of fine size and marvellously fresh. The finest blooms of all were of Alfred Colomb, Richard Wallace, Madame la Baronne de Rothschild, Dupuy Jamain, Claude Levet, Le Rhone, Beauty of Waltham, Reynolds Hole, Marie Baumann, Horace Vernet, François Louvat, Marie Rady, Mons. Boncenne, and Mon. E. Y. Teas; La Duchesse de Morny, Marguerite Brassac, Star of Waltham, Madame C. Wood, Marie Rady, Marie Cointet, Ed. Morren, and Mons. E. Y. Teas were also in grand condition in Mr. Corp's boxes. The prizes in the amateurs' class for twenty-four went in the order named to General the Hon. A. Upton, Levens Hall, Milnthorpe (Mr. R. Craig, gr.), H. Wilson, Esq., Brentwood, Cheadle (Mr. F. Thompson, gr.), and W. Warburton, Esq., Mytton Hall, Whalley, all of whom showed very well, but not in the style of the nurserymen. For twelve J. Taylor, Esq., Malpas, Cheshire, was 1st, the Right Hon. Lord Winmarleigh 2d, and J. Bolton, Esq., 3d; while the 1st prize for a basket of Roses went to H. Wilson, Esq. Messrs. Cranston & Co. contributed four boxes of cut blooms in the miscellaneous class, one of these containing the finest dozen blooms of the dark-coloured Marie Van Houtte, which the judges Highly Commended; and a Silver Flora Medal was awarded by the Society. Mr. Prince and Mr. Davidson also contributed—the former four, the latter two, boxes of splendid blooms, and were each awarded Silver Medals. Cut flowers of stove and greenhouse plants, in collections of twelve bunches, were well shown by Messrs. Cole & Sons, Messrs. F. & A. Dickson & Sons, and Messrs. Turner Brothers, of St. John's Market, Liverpool, and the awards of the judges, went in the order named. Of bridal and ball-room bouquets there were some fifteen put up for the judges' inspection, and the prizes for the former went to Messrs. Turner Brothers, R. Horsfall, Esq., Grassendale Priory, Liverpool (Mr. C. Coldbrook, gr.), and Messrs. William Heath & Son, the College Nursery, Cheltenham; and for the latter to Mr. John Moseley, Crosse Bank, Halliwell, Bolton; Messrs. Turner Brothers, and Messrs. Pope & Smith, Astley Bridge, Bolton. Some of them were very good indeed, and none absolutely bad. Messrs. Downie & Laird, of Edinburgh, showed two fine boxes of cut blossoms of Pansies, mostly seedlings, of very high quality, which were Commended by the judges.

Hardy Plants.

These consisted for the most part of Coniferous subjects, contributed by Messrs. Barron & Sons, of Elvaston, and Messrs. F. & A. Dickson & Sons, of Chester. The best group of all was one of twenty Conifers and Taxads, which took the 1st prize for Messrs. Barron & Sons, and which consisted of large and well-developed specimens of Picea bifida tardiva, Taxus Dovastoni variegata, a fine golden form; Pinus Jeffreyi, Taxus baccata aurea, a beautiful pyramid of gold; Taxus adpressa, a very fine pyramid; Retinospora plumosa aurea, Tsuga Pattoniana, Retinospora plumosa argentea, R. filifera, Arthrotaxus selaginoides, Dacrydium Franklinii, Picea magnifica, Abies polita, Cupressus Lawsoniana lutea, a very striking golden variegated form; Abies Alcocquiana, Thujopsis dolabrata variegata, Sciadopytis verticillata, Abies Parryana (Engelmanni), Abies Tsuga nana, and Podocarpus alpina—an exceptionally fine lot. Messrs. F. & A. Dickson & Sons were 2d. A larger class, and a very good one also, was that for 100 miscellaneous hardy plants, in or out of flower, and here again Messrs. Barron & Son came out of the competition 1st, with a well-grown lot of choice Conifers, Hollies, Acers, Privets, Yuccas, Ivies, Kalmias, and similar subjects. Messrs. F. & A. Dickson & Sons were a very good 2d, showing a very good assortment of small Conifers and evergreen shrubs, very neatly set up. The Preston Nursery Company, who took the 3d award, showed a mixed lot of shrubs and flowering herbaceous plants. The whole of these were shown outside in the grounds. In the large marquee Messrs.

Little & Ballantyne, of Carlisle, showed small specimens of their new pendulous variety of Wellingtonia gigantea, which attracted so much notice at Carlisle last autumn.

FRUIT.

Of the display in this department we can only say that it is fairly good and of average quality, but not very keen. There are only two collections competing for the Society's prizes, and these come from Earl Somers, Eastnor Castle, Ledbury (Mr. Coleman, gr.), and Lord Bagot (Mr. Bannerman, gr.), and the prizes go in the order named. Mr. Coleman has a splendid lot, consisting of a very fine sample of Black Hamburgh Grapes, and the same of Muscat of Alexandria, fine in bunch and berry, but not quite ripe; very good Queen, Eastnor Castle, and Cox's Golden Gem Melons, finely coloured Bellegarde and Royal George Peaches, Elruge and Stanwick Elruge Nectarines, black and white Cherries, Brown Turkey Figs, very good and capital samples of Oxonian and Frogmore Late Pine Strawberries. Lord Bagot's gardener has better ripened Muscats, good Black Hamburgh and Black Prince Grapes, and well-coloured Peaches and Nectarines, &c. For a dish of black Grapes, any kind, Thos. Barnes, Esq., The Quinta, Chirk, is 1st, with good examples of Barchardt's Seedling, Black Prince; and Lord Bagot a good 2d with Alicante. The best samples of Madresfield Court come from J. B. Barnes, Esq., Mr. J. Cowan, of Garston, and Lord Bagot. In the any white Grape class Lord Bagot is 1st with a beautiful dish of Foster's Seedling, not large, but well finished: th e 2d prize is won by J. Hick, Esq., M.P. (Mr. Warburton, gr.), with Buckland Sweetwater; and the 3d by Viscount Boyne, Burwarton, Salop (Mr. Boddey, gr.), with Foster's seedling. The best of three Queen Pines come from Mrs. Vivian of Singleton, near Swansea, (Mr. Harris, gr.). In the class for a basket of Grapes the 1st prize is taken by R. Reeves, Esq., Ashton's Green, near St. Helen's (Mr. J. Meredith, gr.), with a good lot of Black Hamburghs; Mr. Mackellar, gr., Abney Hall, Cheadle, comes in 2d with Muscat Alexandria, of good quality, and a nice lot of Madresfield Court, shown by Mr. Cowan, is 3d.

Of all the fruits named in the schedule Strawberries are far the best represented. The 1st prize for ten dishes is taken by Viscount Hill, Hawkstone (Mr. Pratt, gr.); and President, Sir Harry, Oscar, Cockscomb, Dr. Hogg, Marguérite, Sir C. Napier, and Eleanor, are well represented in his collection. C. S. A. Thellusson, Esq., Brodsworth Hall, Doncaster (Mr. Chuck, gr.), is a very good 2d, and Mr. Womansley 3d. The competition in the class for two dishes is very strong: Earl Beauchamp, Madresfield Court (Mr. Cox, gr.), is 1st with remarkably fine samples of Oxonian and British Queen; Earl Somers a very good 2d, with the last-named variety and Frogmore Llate Pine. President and Lucas, fine dishes of both, are the winning varieties which take 3d prize for J. Taylor, Esq., Malpas, Cheshire. In the single dish British Queen is shown in fine style; Earl Beauchamp, is 1st; a large dish of Barnes' Prolific, shown by J. Woodhouse, Esq., is 2d; and British Queen, by C. S. A. Thellusson, Esq., 3d.

The Melon class is a very good one, a great number being staged. The Hon. A. C. C. Maxwell (Mr. McIntyre, gr.); takes the 1st prize with a very good Golden Queen; the Earl of Crawford the 2d, with Conqueror of Europe; and W. Blinkhorn, Esq., St. Helens (Mr. Smith, gr.) the 3d, with Eastnor Castle, green-flesh. In the miscellaneous class Mr. McIndoe, gr. to J. W. Pease, Esq., M.P., takes the highest award with a very fine dish of Jefferson Plums.

For Messrs. Sutton & Sons' special prizes for three distinct varieties of Melons and Cucumbers Earl Beauchamp is 1st, with Golden Queen, Sutton's Horticultural Prize, and Hero of Bath Melons, and Telegraph, Duke of Connaught, and Tender and True Cucumbers. Miss Ffarington (Mr. Hutchinson, gr.) is 2d, and the Marquis of Cholmondely (Mr. Malcolm, gr.) 3d. The classes for Carter's Cream Pine and Khiva Melons brought out a very mixed lot, and in the latter class especially there were no two alike.

VEITCH PRIZES.

For Messrs. James Veitch & Sons' liberal prizes there is a good competition in all but the first class, and a capital lot of fruit is staged. In the class for a collection of ten dishes, Mr. Coleman, gr. to Earl Somers, Eastnor Castle, Ledbury, is the only exhibitor, but he takes the 1st prize, with very fine samples of Black Hamburgh, Muscat of Alexandria Grapes, a handsome Queen Pine, good Eastnor Castle Melon, finely coloured Royal George Peaches, and Lord Napier Nectarines; a grand dish of Brown Turkey Figs, Bigarreau Napoleon and Black Circassian Cherries, and a very fine sample of the Oxonian Strawberry. There are four competitors with six dishes each, and the 1st prize goes to Lord Bagot, Blithefield, Rugeley (Mr. Bannerman, gr.), who shows very good dishes of Muscat of Alexandria and Black Hamburgh Grapes, the berries of the latter being especially fine; a fair Queen, Read's Melon, Royal George Peaches, and Elruge Nectarines, the latter a very beautiful sample. The 2d prize goes to the Duke of St. Albans, Bestwood, near Nottingham (Mr. Edmonds, gr.), who also has good Grapes, very fine Elruge Nectarines and Chancellor Peaches, &c. Viscount Hill, Hawkstone (Mr. W. Pratt, gr.), is 3d. The best three bunches of Muscat of Alexandria Grapes in a fairly good class come from Lord Bagot, the bunches being of good size, the berries fine, and the colour good for the season. A very nice clean dish, shown by A. Smollett, Esq. (Mr. J. McConnochie, gr.), is 2d, and another nice sample, shown by B. Shaw, Esq., Selby (Mr. Ferguson, gr.) is 3d. There are fourteen competitors in the corresponding class fr blacok Grapes, and Earl Somers takes the 1st prize easily with three very compact bunches of Black Hamburgh, with berries of large size and well coloured. A very good sample is shown by J. F. Morris, Esq. (Mr. Marsh, gr.), who is 2d, and R. Prince, Esq., Burton-on-Trent, 3d. Amongst a dozen admirable dishes of Peaches, a very fine one of Bellegarde, shown by the Earl of Crawford and Balcarres, Haigh Hall, Wigan (Mr. Jamieson, gr.) takes the 1st prize; Earl Somers the 2d, with a beautifully coloured sample of the same variety; and W. R. Winch, Esq., comes in 3d, Bellegarde being also the variety shown. Other varieties well represented are Téton de Venus, Walburton Admirable, Noblesse, and Gallande. Of Nectarines there are eleven dishes, and the best of all is a remarkably fine sample of Elruge, shown by the Duke of St. Albans; an excellent dish of the Pine-apple Nectarine, from the Earl of Crawford, comes in 2d; and a pretty dish of Elruge from Lord Bagot is 3d. There are only two competitors with four bunches of Grapes, distinct kinds, and of these the best comes from Thomas Barnes, Esq., The Quinta, Chirk, (Mr. Louder, gr.), Lord Bagot being 2d. Madresfield Court and Gros Colman are well shown by Mr. Barnes. In the class for three Pines there are five competitors, and the highest award is taken by C. O. Ledward, Esq., The Elms, Acton (Mr. Hepper, gr.). With a very fine trio of Queens, Mr. Vivian (Mr. Harris, gr.) is 2d, and Mr. Austen, gr., Ashton Court, Bristol, 3d, with capital examples of the same variety.

VEGETABLES.

The vegetables are a remarkably good lot, and very plentiful. Lord Carrington (Mr. Miles, gr.), takes the highest award for eight distinct kinds, with a very fine collection, consisting of Green Globe Artichokes, Nantes Horn Carrots, Bailey's Selected Cauliflowers, Early White Naples Onions, very fine Stamfordham Tomatos, Canadian Wonder Beans, Culverwell's Telegraph Peas, and Porter's Excelsior Potatos. Richard Walmsley, Esq., comes in 2d with a capital lot of Peas, Potatos, Tomatos, Beans, Turnips, &c.; R. B. W. Baker, Esq. (Mr. Iggulden, gr.), is a very good 3d. Eight collections are staged. For Peas there are a dozen competitors, with three dishes of Peas each, and all are of fine quality. Sir. T. Edwards Moss, Bart., Otterspool (Mr. Hinds, gr.), takes the 1st prize with grand samples of Ne Plus Ultra, Culverwell's Telegraph, and Challenger; W. R. Winch, Esq. (Mr. Seymour, gr.), is a good 2d; and W. Mansley, Esq., 3d. For three dishes of Potatos R. B. W. Baker, Esq., is 1st, with particularly fine examples of Snowflake, Porter's Excelsior, and Waterloo Kidney. The 2d goes to J. Taylor, Esq., Malpas; and the third to Lord Carrington, both of whom showed well. An exceedingly fine dish of Onions won the 1st prize in their class for Messrs. E. Smith & Sons, and Lord Carrington was a good 2d. The finest dish of Tomatos staged was a grand one of Trophy, from Sir T. Edwards Moss, and Lord Carrington came in 2d again, the Earl Beauchamp being 3d. Messrs. E. Smith & Sons showed the best six dishes of salad plants, and Edmund Birley, Esq., took the 1st prize for Cucumbers.

MESSRS. CARTER'S AND MESSRS. SUTTON'S PRIZES.

Messrs. Jas. Carter & Co. are favoured with an excellent competition for their special prizes, the most important of which are offered for the best collection of thirteen dishes. There were eight competitors, and Lord Carrington (Mr. Miles, gr.) again came in 1st with a grand lot. Most of the sorts mentioned in his other collection are shown here again, with the addition of Sutton's Early Snowball Turnips, Seville Longpod Beans, James' Prolific and Supplanter Pea, &c. Jno. Richardson, Esq., Boston, takes the 2d prize, Earl Beauchamp the 3d, Viscount Hill the 4th, Sir T. Edwards Moss the 5th, and H. Marriott, Esq., the 6th. Prizes for three dishes of Peas prizes are awarded in the order named—to J. Richardson, Esq., Lord Carrington, H. Marriott, Esq., T. Thompson, Esq., and R. Thomson, Esq. The samples shown were very fine, and especially the 1st prize lot, which included Challenger, Little Wonder, and Culverwell's Telegraph.

Messrs. Sutton & Sons had two competitors in their class for a collection of twelve dishes, and the 1st prize was taken by Earl Beauchamp (Mr. Cox, gr.), the 2d going to R. Baker, Esq. (Mr. Iggulden, gr.) Mr. Cox putting up very fine dishes of Porter's Excelsior Potatos, Duchess of Edinburgh, and Giant Emerald Marrow Peas, Canadian Wonder Beans, Haywood's White Queen Celery, Broad Beans, Artichokes, Turnips, Onions, &c.

MISCELLANEOUS PLANTS. (A LINDLEY MEDAL AWARDED.)

The miscellaneous class—for plants not entered for any of the competitions—is one of the best that we remember, a circumstance mainly due to the fact of Mr. T. M. Shuttleworth contributing one of the most extensive groups of specimen stove and greenhouse plants ever staged by one grower, and which the Council honoured with the award of a large Lindley Medal. The flowering specimens were large, well-furnished, and admirably bloomed examples of Plumbago capensis, a fine old plant, apparently well done in this neighbourhood, Allamanda nobilis, well done, Vriesia reticulata, Statice profusa, a very large specimen; a well bloomed Ixora coccinea, Cattleya Leopoldi, Darwinia tulipifera, Lapageria alba, a very fine specimen, grandly bloomed; several good Heaths; Dipladenia Brearleyana, not large, but with very richly coloured flowers, Allamanda Hendersoni, very large and finely done, and Ixora Colei, a large specimen, full of fine white flowers. Ferns formed a principal portion of the fine-foliaged subjects, and many of the specimens were superb. Of Gleichenia dichotoma there were plants about 5 feet through, G. Mendelii measuring 4 feet, Davallia elegans, in a pan, over 5 feet across; D. Tyermanni about 4 feet over, Gleichenia microphylla quite 5 feet through—a noble plant; Nephrolepis Davallioides, from 6 to 7 feet across, and in magnificent condition, Davallia Mooreana almost as large; a finely variegated specimen of Yucca filamentosa, finely developed examples of Croton Weismanni and others; the handsome Pritchardia pacifica and Cordyline indivisa, a large and beautiful specimen of Paulinia thalictroides, and a remarkably handsome Aralia elgantissima.

Messrs. James Veitch & Sons were awarded a Gold Medal for one of their largest and most interesting collections of small specimens of new and rare plants, which included flowering examples of such Orchids as Cypripedium Veitchii, Odontoglossum Alexandræ, Cattleya gigas, Masdevallia Harryana, with over three dozen flowers, and a very good Sobralia macrantha, various fine Pitcher-plants, and a fine stand of insectivorous plants, including several fine Sarracenias, a capital example of the flesh-tinted Crinum Makoyanum, several flowering specimens of Lilium Krameri, and striking plants of Anthurium Brownii and A. Veitchii. Mr. B. S. Williams also showed a very fine group of choice plants, and was awarded a Gold Medal. Some of the newer Dracænas and Crotons figure conspicuously with Pitcher-plants, such Orchids as Odontoglossum vexillarium and O. Alexandræ, Dendrobium Devonianum, and the singular Nanodes Medusæ, with six flowers, and amongst these flowering plants a very good Dipladenia amabilis, and a new Lobelia of this season's introduction, named Lilac Queen, a close-growing and free-flowering variety of a pale lilac colour. To Messrs. Rollisson & Sons, of Tooting, another Gold Medal was awarded for a fine group of plants, mainly consisting of flowering Heaths and Orchids, but including Dracænas, Crotons, &c., as fine-foliaged subjects.

Amongst Heaths the most noticeable was a basket of small plants of Erica Denisoniana, a large white-flowered and gumless variety, which must make a very good exhibition subject; E. tricolor profusa, the long white-tubed E. Aitoniana Turnbulli, and E. Massoni major. Amongst other subjects of interest the most noteworthy are Alsophila Imrayana, Dracæna Goldieana, a good example of Oncidium sessile, Cattleya Leopoldi, and Aeides odoratum, &c.

IMPLEMENTS.

The implement department is one of the best features of the show, being both extensive and of great interest to practical horticulturists. The medals offered in a series of classes for such useful garden requisites as wheelbarrows and waterbarrows, garden engines and syringes, spades, forks, and hoes, &c., brought out very little competition, but the class for the best exhibition of horticultural buildings and structures was one of the best we should think that has ever been got together at any time. The Gold Medal offered for this competition was awarded to Messrs. R. Halliday & Co., of Manchester, who show a completely constructed span-roofed stove, which is at work, lightly made of wood, strengthened with iron, and elegant in design; a span-roofed greenhouse, a lean-to vinery, a rather steep span-roofed Strawberry or Auricula house, a half-span-roofed forcing-house, and Melon frames, &c. Mr. F. J. Perry, of Banbury, shows a large and ornamentally designed conservatory, a large curvilinear-roofed plant-house, and a vinery or Peach-house, constructed on the same principle. Messrs. W. Richardson & Co., of Darlington, exhibit somewhat extensively, showing amongst other structures a patent wall cover, a very substantial affair; a span-roofed greenhouse that may also be used

as a vinery, and models of various vineries, greenhouses, &c. The same firm also show their patent model tubular boiler. Messrs. Messenger & Co., of Loughborough, have five span-roofed houses, strong and well-built structures, and one of them, a Cucumber or Melon and propagating house combined, appeared to us a well-designed structure for the object in view (see fig. 8). A light and roomy span-roofed house, an amateur's greenhouse, and some frames are shown by Mr. Jno. Webster, of Liverpool. Messrs. Cranston & Luck, of Birmingham, have a lean-to house and a span-roofed structure with frames at the sides, illustrating their patent system of ventilating and glazing without putty; and the Messrs. Horley, of Toddington, Beds, have their patent Paragon greenhouse, and other structures, glazed on the system of fixing the glass without putty. Messrs. R. Halliday & Co., also take a Gold Medal for the exhibition of boilers and valves, shown in the class for general horticultural implements and appliances, the valves included a throttle made on a new plan, and a new screwed-down slide-valve that the judges thought very highly of. In this class Mr. Seward, of Lancaster, shows a tubular saddle boiler; Mr. Wagstaff of Dunkinfield, near Manchester, his patent hot-water boilers; Mr. Metcalf, of Preston, a boiler and hot-water apparatus; Messrs. John Weeks & Co., of Chelsea, models and drawings of a variety of horticultural structures; Mr. B. Harlow, of Macclesfield, a four-flued saddle boiler with upright tubular boiler; and Mr. J. H. Critchley, of Cheltenham, specimens of the patent hot-water regulators, the principle of which consists in bringing all the valves to one centre. A great variety of other subjects are shown in this class, besides those connected with heating; and amongst them may be noted a fine display of garden pottery from Mr. Matthews, of Weston-super-Mare; a good assortment of waterproof labels, paper flowerpots, seed packets, and Henderson's seed-packet filler, shown by Messrs. Blake & Mackenzie of Liverpool. Various garden appliances connected with the distribution of water, and including water engines and hose reels, from James Quin & Co. A brass model of the large boilers in the Palm-stove at Kew, shown by Messrs. Simpson & Co. of London; Kushpeat's summer-houses and bridges, from Mr. Inman of Manchester, and who gains a Small Gold Medal for a rustic bridge thrown across a pond. Samples of Peat are shown by Mr. R. Epps, of Vauxhall; peat, sand, &c., from Messrs. James Fraser & Co., of Leighton Buzzard. William Rollisson & Sons show a new water-barrow and plant-truck combined, which took the Silver Medal in its class. In construction it is very simple but strong, and is so arranged that when not required for watering the tube can be lifted off, and a flat tray put on for carrying plants, &c. The Preston Nursery Company shows a wheelbarrow and sets of spades and forks, but they call for no special comment.

The National Rose Society—Manchester.—The grand National Rose Society's show at the Royal Botanical Gardens, Old Trafford, on Saturday, was, as predicted, one of the most successful ever held. It included collections from the grounds of the most noted Rose growers in the country, and the loveliness of some of the exhibits would have been scarcely possible to surpass. Financially, too, the result must have exceeded anticipations, the admissions, including season ticket-holders, numbering over 10,000. Messrs. Cranston & Co., of Hereford, carried off the premier prize for seventy-two single trusses (distinct). Next to them came the collections of Mr. B. R. Cant, of Colchester; and Messrs. Paul & Son, Cheshunt. In the class for forty-eight distinct Roses, three trusses of each, Messrs. Cranston were again successful; Messrs. Paul & Son and Mr. Cant being bracketed for the next honours. For twenty-four distinct flowers, of three trusses each, Messrs. Cranston & Son stood 1st, Mr. Cant 2d, and Mr. G. Davison, of Hereford, 3d. For twenty-four, distinct, single trusses, the prizes were awarded—1st to Messrs. Paul & Son, 2d to Mr. Cant, and 3d to Mr. Davison. Messrs. Paul & Son took the 1st prize for twelve Teas or Noisettes, distinct; Mr. B. R. Cant 2d, and Mr. G. Davison 3d. The prizes in the amateur classes were as follow:—

Forty-eight, distinct, single trusses.—1st, Rev. Canon Hole, Newark; 2d, Mr. T. Jowitt, Hereford; 3d, Mr. D. L. Coddington, Drogheda. Thirty-six, distinct, single trusses: 1st, Rev. E. N. Pochin, Leicester; 2d, Rev. Canon Hole. Twenty-four, distinct, single trusses: 1st, Mr. T. Jowitt; 2d, Rev. E. N. Pochin; 3d, Rev. Canon Hole; 4th, Mr. J. Mayor, Oxford. Twelve distinct, single trusses: 1st, Mr. A. J. Soames, Bourne; 2d, Mr. J. Lakin, Chipping Norton; 3d, Mr. J. Davenport, Altrincham; 4th, Mr. W. Hand, Newcastle-under-Lyme. Six distinct, single trusses: 1st, Mr. A. J. Soames; 2d, Mr. J. Lakin; 3d, Mr. J. Brown, Heaton Mersey. Six, distinct, single trusses, of distinct-grown Roses: 1st, Mr. J. Brown; 2d, Mr. W. L. Palfrey, Altrincham; 3d, Mr. J. Davenport. Twelve Teas or Noisettes, distinct, single trusses: 1st, Rev. Canon Hole; 2d, Mr. T. Jowitt, Hereford; 3d, Rev. E. N. Pochin.

Open Classes.—Twelve new Roses, distinct, single trusses, must not have been in commerce previous to 1875:—1st, Messrs. Paul & Son; 2d, Mr. G. Davison; 3d, Mr. H. Frettingham. Twelve distinct trusses of Marie Baumann: 1st, Messrs. Cranston & Co.; 2d, Messrs. Paul & Son; 3d, Mr. B. R. Cant. Twelve distinct trusses of Charles Lefebvre: 1st, Messrs. Paul & Son; 2d, Messrs. Cranston & Co. Twelve single trusses of La France: 1st, Messrs. Paul & Son; 2d, Mr. G. Davison; 3d, Mr. H. Frettingham, Nottingham.

First-class Certificates were awarded to Messrs. W. Paul & Son, Waltham Cross, for Rose Countess of Roseberry; to Messrs. Paul & Son, Cheshunt, for a Rose, Mrs. Laxton. Messrs. W. Paul & Son were also Highly Commended for a collection of ten boxes of Roses.

The judges in the amateur classes were Messrs. Cranston, G. Paul, G. Prince, and H. Appleby; and in the nurserymen's class, Rev. Canon Hole, Rev. E. N. Pochin, Mr. T. J. Jowitt, Mr. J. Lakin, Mr. A. J. Soames, and Rev. H. H. D'Ombrain. (*From a Correspondent.*)

Royal Botanic: *July* 10.—The Roses were arranged on tables covered with green baize in front of the banks usually devoted to the collections of flowering and foliage plants. The banks where Roses were not placed in front of them were furnished with collections from nurserymen. The banks had a bare appearance, as the grass is dead and trampled; a row or two of foliage plants behind the Rose-boxes would have been a great improvement. In the class for seventy-two varieties, distinct, single trusses, there were five entries. Messrs. Paul & Son, Cheshunt, were well 1st with a grand collection; every one of the seventy-two were perfect. It is not desirable to give the names of the whole collection, but we cannot omit to mention La Duchesse de Morny, of great depth of petal, superb; Mrs. George Paul, a finely cupped crimson Rose; Niphetos, the best white Tea; Sénateur Vaisse, Maurice Bernardin, Marie Rady, grand; Reynolds Hole, as shown here the best dark Rose; Horace Vernet, fine and distinct; Madame Vidot, in good form, as also was Mrs. Laxton; Alfred Colomb was grand. Others worthy of honourable mention were Marquis of Salisbury, Monsieur E. Y. Teas, Sultan of Zanzibar, Prince Teck, Duchesse de Vallombrosa, Madame Lacharme, and Nardy Frères, distinct from any other Rose in colour. Messrs. Cranston & Mayos, King's Acre, Hereford, were 2d, also with a grand collection, the blooms of large size, but a few of them were slightly damaged, which told against them in a close contest. Mr. John Keynes, of Salisbury, was 3d, with nice fresh blooms, but rather small. An extra prize was awarded to Mr. Geo. Cooling, of Bath. Forty-eight varieties, three trusses of each: The contest was again between Messrs. Cranston and Messrs. Paul, but the large size and superior quality of the first-named firm carried them well to the front. Reynolds Hole was very fine; Charles Lefebvre, grand; Marquise de Mortemart, most lovely; Lord Macaulay, very fine for that sort; Captain Christy, very fine; Madame Lacharme, very pure; La Duchesse de Morny—we have never seen this variety finer than in this stand; and that of Messrs. Paul, Marie Baumann and Alfred Colomb, was perfection. Messrs. Paul & Son, of Cheshunt, were a good 2d, Mr. John Keynes 3d, and an extra prize was awarded to Messrs. Mitchell, of Piltdown, Uckfield. Twenty-four varieties, three trusses of each, was devoted to amateurs. The 1st prize in this class went to Mr. J. Davis, The Square, Wilton, Wilts. He exhibited a nice clean lot, and gained the 1st prize. There was no other competitor. Twenty-four varieties, three trusses open: Messrs. Paul & Son had the 1st place, Messrs. Cranston 2d, and Mr. C. Turner, Slough, 3d: extra prizes being awarded to Mr. J. Keynes, Messrs. J. Mitchel & Sons, and to Mr. W. Rumsey. Mr. C. Turner, of Slough, gained the 1st prize for the twenty-four single blooms and very fine they were. Messrs. Paul had a 1st prize for twelve white Roses—they were very good Madame Lacharme, Messrs. Cranston being placed 1st for twelve red with Marie Baumann. Messrs. Paul & Son had the best basket of Roses, and the same firm had also a collection of climbing Roses: it made a very interesting exhibition, and well deserved the 1st prize. Climbing Mdlle. E. Verdier is a fine Rose. Messrs. Paul & Son gained the 1st prize for new Roses, Mr. C. Turner 2d, and Messrs. Cranston 3d. Messrs. Carter, of Holborn won a Silver Medal for foliage plants.

After the Roses came the Carnations and Picotees. Mr. C. Turner was 1st in both classes, and Mr. Douglas 2d, Mr. Hooper, of Bath, being 3d. Mr. Douglas had the best cut stove and greenhouse plants; they comprised Orchids, Heaths, Ixoras, &c. Mr. E. Morse, of Epsom, had the best cut herbaceous plants—a very nice stand. Mr. W. Hills had a 1st prize for a very fine collection of native wild flowers, comprising a hundred species correctly named. The 2d prize went to Mr. T. Tyler, Welford Park, Newbury; and the 3d to Mr. J. A. Bethell, Slangham, Sussex, all exhibiting fine wild Orchids and other rare plants.

Mr. B. S. Williams, of Holloway, won a Large Silver Medal for a collection of plants, the same award being made to Messrs. Henderson, of the Pine-apple Nursery; a Silver Medal to Messrs. Laing, of Forest Hill; and one of the same class to Messrs. Ivery, of Dorking, for Hardy Ferns; Messrs. Cutbush, of Highgate, having a Small Silver given to them also, for a collection of stove and greenhouse plants.

Fruit.—The show of fruit was very extensive, as is usual at the Botanic Garden in July. There were five exhibitors in the class for six distinct varieties of fruit. Mr. C. Ross, gr. to C. Eyre, Esq., Walford Park, Newberry, had excellent Black Hamburgh and Buckland Sweetwater Grapes, the berries very large; a handsome Queen Pine-apple, and Duke of Edinburgh, very fine Violette Hâtive Peaches, and a dish of Pitmaston Orange Nectarines; 2d, Mr. T. Comber, gr. to J. A. Rolls, Esq., The Hendu, Monmouth; 3d, Mr. G. Cornhill, gr. to J. S. Virtue, Esq., Oatlands Park. For nine dishes Mr. G. T. Miles was the only exhibitor, and gained the 1st prize, which was well deserved, as his Foster's White Seedling and Black Hamburgh Grapes, Excelsior Melon, Figs, and Cherries were very fine. For two Pine-apples (Queens), Mr. J. Hepper, gr. to C. C. Ledward, Esq., The Elms, Acton, was 1st, with large handsome fruit; 2d, Mr. J. Dinsmore, gr. to T. F. Blackwell, Esq., Harrow Weald; 3d, Mr. G. Ward, gr. to T. N. Miller, Esq., Bishops Stortford. All the fruit was very fine. The 1st prize for one Queen Pine was given to a large finely ripened fruit from Mr. J. Dinsmore; Mr. W. Tolley, gr. to H. Rogers, Esq., Oatlands Park, Weybridge, was 2d; Mr. T. Bailey, gr., Shardeloes, was 3d. Mr. W. Davis, gr. to T. W. Booker, Esq., Velindra Gardens, Cardiff, had a 1st prize for a very large Providence Pine-apple; Mr. G. T. Miles, with an Enville, 2d; Mr. J. Hepper was 3d, with a Prickly Cayenne. Two Melons, green and scarlet-fleshed: The 1st prize was given to Mr. H. Harvey, Wooley Park, Wantage, Berks; and the 2d to Mr. G. Murrel, gr. to A. R. Allerton, Esq., Prittlewell. Loxford Hall Seedling was very fine, the fruit large and well-ripened; Frogmore Late Pine was small. Mr. T. Jones, Elvetham Park, Winchfield, had a 1st prize for excellent Figs; 3d, Mr. J. Bolton, gr. to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks. Mr. T. Bailey had the largest Melon, Mr. W. Robbins the 2d, and Mr. H. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, 3d.

The baskets and dishes of Black Grapes were the largest in quantity and finest in quality that have been shown here for many years. There were twelve baskets of Black Hamburghs: the 1st prize was awarded to Mr. P. Edwards, gr. to Mrs. Tristram, Liphook, Hants—the berries were smaller than some of the others, but well finished and quite black; 2d, Mr. Feist, gr. to R. J. Ashton, Esq., Bishopsgate House, Staines; Mr. G. Osborn, of Kay's Nursery, Finchley, was 3d. The 1st prize for a basket of white Grapes was awarded to Mr. J. Douglas, gr. to F. Whitbourne, Esq., Loxford Hall, Ilford, for well ripened Muscat of Alexandria; Mr. P. Feist, was 2d with the same variety; 3d, Mr. W. Mowbray, gr. to the Earl of Leven, Fulmar, with excellent Buckland Sweetwater. Eleven dishes of Black Hamburgh were exhibited: Mr. P. Edwards was 1st with three splendid bunches, even in size, and the berries black as Sloes; 2d, Mr. R. Prince, gr. to F. Gretton, Esq., Bladon House, Burton-on-Trent, also with splendid berries, but the bunches not so large; 3d, Mr. P. Feist. For any other kind of Black Grape, the 1st prize went to Mr. W. Hills, gr. to Mrs. J. S. Wells, Frittleworth, with the best-coloured Muscat Hamburgh, we have yet seen; 2d, to Mr. W. Mowbray; 3d, to Mr. O. Bolton, with Black Prince. Mr. Douglas had the best dish of Muscats, and very finely ripened they were—the berries quite golden; Mr. J. Fry, gr. to L. J. Baker, Esq., Haydon Hall, Eastcote, had the 2d best, the bunches large and handsome; the 3d was awarded to Mr. G. Cornhill. For any other white Grape, Mr. W. Mowbray had splendid Buckland Sweetwater, and gained the highest award, the 2d going to Mr. P. E. Kay, Long Lane, Finchley, for Duke of Buccleuch with very large berries; Mr. G. Masters was placed 3d with Buckland Sweetwater. Mr. G. Cornhill, gr. to J. S. Virtue, Esq., Oatlands Park, had the two best dishes of Peaches—Royal George and Early Grosse Mignonne: they were fine and well-ripened; 2d, Mr. C. Ross; 3d, Mr. J. Burnett, gr., The Deepdene. Nectarines were very fine: Mr. J. Bashford, gr. to H. Brenchley, Esq., was 1st with Stanwick Elruge and Rivers' Orange; 2d, Mr. W. Robbins, gr. to E. D. Lee, Esq., Hartwell House, Aylesbury; 3d, Mr. G. Halliday, gr. to J. Morris, Esq., Bletchingly. Cherries were very fine. The best black Cherries—two dishes—were sent from Mr. Bailey; they were both Black Circassian; Mr. Douglas had the best white or red Bigarreau Napoleon; Mr. Douglas also had the best Strawberries.

Floricultural Certificates of Merit were awarded to Mr. C. Turner, of Slough, for yellow ground Picotee Ne Plus Ultra, clear yellow edged and slightly barred with reddish scarlet; to Sultana, a large full flower, reddish buff, slightly flaked scarlet; and to Lady Roseberry, a clear primrose self. The same exhibitor

also sent Princess Marguerite, pale yellow edged with scarlet, the edge breaks into the body colour in places; Dove, an immense flower, with broad serrated petals, yellow streaked with scarlet; and Lightning, a very showy yellow ground and a useful decorative sort. All these fine flowers have been raised from Prince of Orange (Perkins): they are a great advance in this section, as the plants are of very free growth; they were all exhibited as plants with a dozen flowers on some of them. Rosa Bonheur, a different type, was exhibited as a cut flower. It is the best of the flesh-coloured selfs, and also received the highest award for a new flower. Mr. Turner also gained a Floral Certificate for Rose Harrison Weir, deep rose, large and full, the outer petals reflexed like those of Marquise de Castellane. Messrs. W. Paul & Sons, Waltham Cross, exhibited a fine collection of Roses, not for competition; amongst them a new H.P. Rose, Countess of Roseberry; the flowers are very perfect in shape, the petals beautifully cupped, as shown; the colour is that of Etienne Levet, but it is a better shaped flower. Messrs. Paul gained an extra prize for their collection, and a Floral Certificate of the highest class for the new Rose. Mr. Cannell, of Swanley, Kent, also sent fine collections of cut blooms of Zonal Pelargoniums, Verbenas, &c.: an extra prize was awarded to them.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, July 10, 1878

Month and Day	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Mean of 18 Years	Temperature of the Air: Highest.	Temperature of the Air: Lowest	Temperature of the Air: Range	Temperature of the Air: Mean for the Day	Temperature of the Air: Departure of Mean from Average of 18 Years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity Sat. = 100	Wind: Average Direction	Rainfall
July	In.	In.	°	°	°	°	°	°			In.
4	29.90	+0.15	73.7	44.3	29.4	57.8	−3.5	47.7	68	W, NW	0.00
5	29.92	+0.11	71.9	53.1	18.8	61.1	−0.4	54.1	79	WSW	0.00
6	29.82	+0.02	77.0	56.3	20.7	64.8	+3.2	56.1	73	SW, W	0.00
7	29.81	0.00	76.0	56.8	19.2	63.6	+1.8	55.1	75	WSW, W	0.00
8	29.94	+0.13	73.2	56.1	17.1	62.5	+0.5	54.0	71	W, NW	0.00
9	29.84	−0.02	71.0	51.6	22.4	61.4	−0.7	53.2	75	NW	0.03
10	29.75	−0.07	69.1	54.5	14.6	60.3	−1.9	50.1	69	W, WNW, WSW	0.00
Mean	29.86	+0.05	73.6	53.2	20.4	61.6	−0.1	52.0	73	W, NW	sum 0.03

July 4.—A fine day, partially cloudy. Breeze. Cool.
— 5.—A fine day. Very cloudy at times. Warmer.
— 6.—A fine day, warm and cloudy. Dull at times.
— 7.—A dull day, very cloudy. Sunshine at intervals.
— 8.—A fine warm day. Partially cloudy.
— 9.—Fine, bright, partially cloudy. Rain fell between 7 and 9 P.M. Overcast at night.
— 10.—Fine, but very cloudy and dull. Cool. Overcast at night.

LONDON: *Barometer.*—During the week ending Saturday, July 6, in the vicinity of London the reading of the barometer at the level of the sea increased from 29.80 inches at the beginning of the week to 29.94 inches by the morning of July 1, decreased to 29.87 inches by the afternoon of the 2d, increased to 30.16 inches by noon on the 4th, decreased to 30 inches by the afternoon of the 6th, and was 30.01 inches at the end of the week. The mean reading for the week at sea level was 29.98 inches, being 0.08 inch below that of the preceding week, and 0.01 inch below the average.

Temperature.—The highest temperature of the air observed by day varied from 77° on the 6th to 63° on July 3; the mean value for the week was 69¾°. The lowest temperatures of the air observed by night varied from 44¼° on July 4 to 56½° on June 30; the mean value for the week was 52°. The mean daily range of temperature in the week was 17¾°, the greatest range in the day being 29½°, on July 4, and the least, 12¼°, on the 3d. The mean daily temperatures of the air, and the departures from their respective averages were as follows:—June 30, 59°.7, — 1°.5; July 1, 58°.4, — 2°.8; 2d, 54°, — 7°.1; 3d, 54°.7, — 6°.5; 4th, 57°.8, — 3°.5; 5th, 61°.1, — 0°.4; 6th, 64.8, + 3°.2. The mean temperature of the air for the week was 58°.6, being 2°.7 below the average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 136¼° on July 4, 125¾° on the 6th, and 119° on the 3d; on June 30 the reading did not rise above 85°. The lowest readings of a thermometer on grass with its bulb exposed to the sky were 39° on July 4, and 46¼° on the 1st; the mean of the seven low readings was 43°.

Wind.—The direction of the wind was N.E. and W.S.W., and its strength gentle. The weather during the week was generally dull, cool, and the sky very cloudy.

Frequent *thunder* was heard on June 30.

Rain fell on three days during the week; the amount measured was 0.96 inch, 0.87 inch of which fell on June 30.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 79¾° at Cambridge, 79° at Sunderland, 77½° at Bristol, and 77° at Blackheath; at Bradford and Liverpool 71° was the highest temperature, and at Brighton and Truro 72° was the highest; the mean value from all stations was 74¼°. The lowest temperatures of the air observed by night were 40° at Nottingham, 40¾° at Cambridge, and 43° at both Sheffield and Hull; the lowest temperature at Portsmouth was 51½°, and at Liverpool was 51°; the mean value from all stations was 45½°. The range of temperature in the week was the greatest at Cambridge, 39°, and the least at Liverpool, 20°; the mean range from all stations was 29½°.

The mean of the seven high day temperatures was the highest at Cambridge, 72¾°, Bristol 71½°, and Blackheath and Nottingham both 69¾; and the lowest at Bradford, 65¼°, and Portsmouth and Liverpool both 66½°; the general mean from all stations was 68¾°. The mean of the seven low night temperatures was the lowest at Cambridge, 50°, and Nottingham and Eccles 50½°; and the highest at Liverpool 55°, and Plymouth 54¼°; the mean value from all stations was 52¾°. The mean daily range of temperature in the week was the least at Liverpool, 11½°, and the greatest at Cambridge, 22½°; the mean daily range from all stations was 16°.

The mean temperature of the air for the week from all stations was 58¾°, being 2½° higher than the value for the corresponding week in 1877. The highest were 60¾° at Bristol, 60° at Plymouth, and 59½° at Blackheath, Brighton, Truro, Cambridge, and Norwich; and the lowest were 57° at Bradford and 57½° at Wolverhampton.

Rain.—The amount of rain measured at Bristol was 2.34 inches, at Portsmouth was 1.41 inch, and at Brighton was 1.13 inch, whilst at Leeds only 0.02 inch fell; at Norwich, Liverpool, and Hull no rain was measured; the average fall over the country was 0.38 inch.

The weather during the week was fine, though cool, and the sky cloudy.

Thunderstorms occurred at places on June 30.

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 73¾° at Greenock to 68¼° at Aberdeen; the mean value from all stations was 71°. The lowest temperatures of the air varied from 43° at Dundee to 53¼° at Glasgow; the mean value from all stations was 47½°. The mean range of temperature in the week from all stations was 23¾°.

The mean temperature of the air for the week from all stations was 58½°, being 3½° higher than the value for the corresponding week in 1877. The highest was 60¾° at Glasgow, and the lowest 55° at Aberdeen.

Rain.—The falls of rain varied from 1.11 inch at Greenock to 0.10 inch at Dundee; at Paisley no rain fell; the average fall over the country was 0.33 inch.

DUBLIN.—The highest temperature of the air was 73½°, the lowest 47¾°, the range 25¾°, the mean 61¾°, and the fall of rain 0.05 inch.

JAMES GLAISHER.

Obituary.

WE regret to have to announce the death of Mr. THOMAS REED, of Flaxley, near Newton-on-Severn, on the 27th ult. He was a man of great intelligence and taste, combined with a deep love of Nature and veneration for its Author, whose hand he saw in all that is beautiful and useful. He had a good knowledge of gardening and of the requirements of plants, so that his garden was generally admired.

Enquiries.

He that questioneth much shall learn much.—BACON.

POTATOS.—I should be glad to learn through your columns where I can procure Potatos which should be planted about this time, to produce tubers that look and eat like early Potatos in the winter, by covering the ground with half-decayed leaves, in which they are allowed to remain to keep off frost. *N. J.*

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c. are unavoidably postponed.*

AGAVE GLAMINIFLORA, SYN. BUONAPARTEA JUNCEA: *G. R., South Wales.* When this plant has flowered it should be kept moderately dry, and well exposed to light for a time. Many make the mistake of keeping this plant in a stove, but it grows much better in a well-lighted greenhouse, producing its filaments more freely, which is its greatest ornament. I have seen plants that have flowered put in the open and do well; but when they have flowered they should have the young ones separated from the old base when they are strong, or they will set off to flower again before they are of any size. When taken off, the young ones should be put in sand on a shelf for a time until they are rooted. *J. Croucher.*

BLIGHT ON PRIVET: *A. H. H.* If you mean greenfly—yes. We do not remember to have seen mildew on it.

CUT BLOOMS: *X. X. X.* The specimens sent were not better than many others already in cultivation. The Sweet Pea is a stranger to us, but we are not particularly desirous of making its fuller acquaintance.

DISEASED POTATO LEAVES: *J. O. H.* As far as can be made out from leaves so dreadfully crushed, the affection is what is so common in American varieties of Potato, which appears to be constitutional. There is no trace of fungi. *M. J. B.*

MILTON FORCING: *F. C.* See our weekly "Garden Operations."

NAMES OF GRASSES: 1, Festuca ovina, var.; 2, F. elatior; 3, Carex paniculata; 4 and 5, Molinia cœrulea; 6, Agrostis canina; 7, Avena pratensis; 8, Aira flexuosa; 9, A. cæspitosa; 10, Agrostis canina; 11, Poa pratensis var. subcœrulea; 12, P. trivialis; 13, Carex canescens; 14, Scirpus cæspitosus; 15, Digraphis arundinacea; 16, Agrostis alba. In future please only send six specimens at one time.

NAMES OF PLANTS: *See and Say Nothing.* Sedum spurium, and Orchid next week. *J. E., Luton.* 1, Malva moschata; 2, Ægopodium podagraria; 3, Heracleum Sphondylium; 4, Epipactis purpurata; 5, Potentilla Tomentilla; 6, Lapsana communis; 7, Daucus carote.—*W. H. S.* 1, Veronica; we do not recognise the species alba (?); 2, Veronica spicata; 3, Nepita Mussini; 4, Sedum spurium, var. album; 5, Sedum album; 6, Sedum hispanicum; 7, Gypsophilla paniculata.—*E. G. H.* 1, Spiræa cantoniensis; 2, Hypericum orientale; 3, Œnothera pumila; 4, no specimen; 5, Campanula carpathica.—*J. W. F.* 1, Glyceria aquatica; 2, Sclerochloa maritima; 3, S. distans.—*J. J.* Glaum maritima; we were not aware of the properties you mention.

PEA: *J. McR.* We can see no difference between the specimen sent and the old purple-podded variety.

POTATOS DISEASED: *J. E.* We could not find the insects you allude to. The Potatos are badly attacked with the Potato fungus, Peronospora infestans.

SEAKALE: *A Reader.* The best way to propagate the sport is by division of the roots; but we doubt if it is worth saving at all, and certainly not for subtropical gardening.

CATALOGUES RECEIVED:—Messrs. J. Carter & Co. (High Holborn, London, W.C.), Catalogue of Annuals, &c., Shown at the Royal Botanic Society's Gardens.—Messrs. Osborn & Sons (The Fulham Nurseries, London, S.W.), General Catalogue of Stove and Greenhouse Plants, including Novelties.—Jules de Cock (Faubourg St. Liévin, Ghent), Trade Catalogue of Agaves, Azaleas, Dielytra, Rhododendrons, Palms, &c.

COMMUNICATIONS RECEIVED.—J. G. B.—W. B.—M. D. (many thanks).—H. E.—J. P.—W. E.—G. S.—D. D.—C. B. S.—J. G. B.—T. W.—W. P.—G. M.—B. C.—A. G. Du H. —G. Mawm.—E. C.—The Lawson Seed Company.—G. M'L.—T. M.—J. S. R.—M. W.—F. C.—S. A. S. N.

Markets.

COVENT GARDEN, July 11.

The market has been pretty brisk during the past week, prices ruling much the same. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per dozen	1 6	3 0	Melons, each	3 0	8 0
Cherries, per lb.	0 6	1 6	Oranges, per 100	6 0	12 0
Figs, per dozen	4 0	10 0	Peaches, per dozen	4 0	18 0
Grapes, per lb.	2 0	8 0	Pine-apples, per lb.	2 0	8 0
Lemons, per 100	4 0	12 0	Strawberries, per lb.	0 6	3 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Endive, Batav. dozen	1 6	..
Asparagus, Sprue, per bundle	1 6	..	Garlic, per lb.	0 6	..
— Eng., per 100	8 0	..	Herbs, per bunch	0 2	0 4
Aubergines, p. doz.	3 0	..	Horse Radish, p. bun.	4 0	..
Beans, French, per lb.	0 9	..	Lettuces, Cos, Eng., per score	1 6	2 6
— broad, per bush.	3 0	..	Mint, green bunch	0 4	0 6
Beet, per doz.	1 0	2 0	Onions, young, bun.	0 4	0 6
Cabbages, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Carrots, per bunch	0 4	0 6	Peas, green, per qr.	1 6	2 0
Cauliflowers, per doz.	4 0	6 0	Radishes, per bunch	0 1	0 3
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Chilis, per 100	5 0	..	— New Jersey, doz.	2 0	..
Cucumbers, each	0 4	1 6	Shallots, per lb.	0 6	..
Endive, per doz.	1 0	2 0	Spinach, per bushel	2 0	3 0
			Tomatos, per dozen	2 6	3 0
			Turnips, new, p. bun.	0 6	..

Potatos:—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

PLANTS IN POTS.

	s. d. s. d.
Begonias, per doz. ..	6 0 12 0
Bouvardias, do ..	12 0–24 0
Calceolarias, p. doz. .	6 0–18 0
Campanula, per doz.	6 0 12 0
Coleus, per dozen ..	4 0– 9 0
Crassula, per dozen	12 0–36 0
Cyperus, do.. ..	6 0 12 0
Dracæna terminalis	30 0–60 0
— viridis, per doz.	18 0–24 0
Erica, in var., doz. ..	12 0–36 0
Euonymus, var., doz.	6 0–24 0
Ferns, in var., doz.	4 0–18 0
Ficus elastica, each	2 6 15 0
Foliage Plants, various, each	2 0–10 6
Fuchsias, per dozen .	4 0–18 0
Hydrangea, per doz	12 0–24 0
Lilium eximium, doz.	18 0–36 0
Mignonette, per doz.	4 0– 9 0
Musk, per dozen ..	3 0– 9 0
Myrtles, per doz. ..	6 0–12 0
Palms in variety, each	2 6–21 0
Pelargoniums, per dozen	6 0–24 0
— scarlets, zonal, per dozen	4 0– 9 0
Petunias, per dozen	4 0–12 0
Rhodanthes p. doz.	6 0–12 0
Roses, per dozen ..	18 0–60 0
— Fairy, per doz.	9 0–12 0

CUT FLOWERS.

	s. d. s. d.
Abutilon, 12 blooms	0 6– 1 0
Arum Lily, per doz.	3 0–12 0
Bouvardias, per bun.	1 0– 4 0
Calceolaria, 12 bun..	9 0–18 0
Campanula, 12 bun.	6 0– 9 0
Carnations, 12 bunch.	4 0–12 0
Cornflower, 12 bun..	3 0– 6 0
Eschscholtzia, 12 bun	2 0– 6 0
Eucharis, per doz. ..	6 0–12 0
Gardenias, 12 blms.	3 0– 9 0
Gladiolus, 12 spikes	1 0– 3 0
Heliotropes, 12 sp. ..	0 6– 1 0
Mignonette, 12 bun.	3 0– 6 0
Myosotis, 12 bun. ..	3 0– 6 0
Pelargoniums, 12 spr.	0 9– 2 0
— zonal, 12 sprays	0 4– 1 0
Phlox, 12 bunches ..	6 0–12 0
Pinks, var., 12 bun.	4 0– 9 0
Primula, double, per bunch	1 0– 2 0
Roses (indoor), doz.	1 6–12 0
— (outdoor), 12 bun.	4 0–12 0
— Moss), 12 bunch.	6 0–18 0
Stephanotis, 12 sp...	3 0– 9 0
Sweet Peas, 12 bun.	4 0– 9 0
Tropæolum, 12 bun.	1 0– 4 0

SEEDS.

LONDON: *July* 10.—As usual at this time of the year the seed market is now thinly attended, and the actual business doing is in the narrowest compass. Attention is at present directed towards the new crops, specimens of which have begun to arrive at Mark Lane. Of Trifolium incarnatum, samples of new of both French and English growth are to hand, but values have not yet fixed themselves. Growers of course do not know at first what to ask and so, to make themselves safe, they quote prices quite prohibitory. It is thought that the home demand for Trifolium will not this season be large. Trefoil promises to be abundant, good, and cheap. Several samples of new foreign have already been shown at Mark Lane. Of new white Clover seed, one or two specimens have arrived from Silesia. The breadth this year of new Turnip seed is very large, and the yield good, consequently prices will be moderate. In sowing Mustard and Rape seed there is no change. Hemp and Canary seed meet a steady demand at unaltered currencies. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday, contrary to the state of the provincial markets, and to what might have been anticipated from the weather, was firmer. Wheat, the English supply of which was small, may be quoted steady at the prices of Monday week. Barley was very dull, and inclined downwards. Malt remained quiet on former terms. Oats were in better demand, as also was Maize, and in the value for both an advance of 6*d.* per quarter was established. Beans, Peas, and flour were held for previous rates, the inquiry remaining poor.—On Wednesday there was a steady market for cereal produce, but business was quiet, and prices showed no material change from Monday. The advance quoted in Oats and Maize on Monday was well supported, and the tendency as regards Wheat was upwards. Barley remained very dull. Beans, Peas, and flour were unaltered.——Average prices of corn for the week ending July 6:—Wheat, 46*s.*; Barley, 37*s.* 2*d.*; oats, 27*s.* 11*d.* For the corresponding period last year:—Wheat, 61*s.* 5*d.*; Barley, 35*s.* 6*d.*; oats, 27*s.* 10*d.*

HAY.

Tuesday's Whitechapel report states that, with a small supply, trade was steady, and prices well supported. Straw, at 42*s.* to 55*s.* was rather dearer. Prime Clover, 100*s.* to 140*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 102*s.* 6*d.*; inferior, 70*s.* to 85*s.* per load.—At the market on Thursday there was a short supply on offer, and trade ruled brisk. Hay and straw were dearer. Prime Clover, 100*s.* to 140*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 105*s.*; inferior, 70*s.* to 85*s.*; and straw, 42*s.* to 57*s.* per load. — Cumberland Market quotations:— Superior old meadow hay, 112*s.* to 120*s.*; inferior, 84*s.* to 100*s.*; new hay, 70*s.* to 100*s.*; superior old Clover, 132*s.* to 140*s.*; inferior, 105*s.* to 112*s.*; new Clover, 70*s.* to 100*s.*; and straw, 54*s.* to 60*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that there have been large arrivals, and a dull trade has been experienced at reduced rates. New Jersey kidneys, 140*s.* to 170*s.*; ditto, round, 120*s.* to 160*s.*; Guernsey kidneys, 150*s.* to 180*s.*; ditto, round, 110*s.* to 140*s.* per ton; English shaws, 120*s.* to 140*s.*; French, 1*s.* 6*d.* to 2*s.* 3*d.* per basket.—The Potatos imported into London last week consisted of 1979 baskets from Rotterdam, 166 packages 197 baskets Boulogne, 108 boxes 86 sacks Dunkirk, 255 baskets Antwerp, 51 Harlingen, 10 Hamburg, and 44 tons Cherbourg.

COALS.

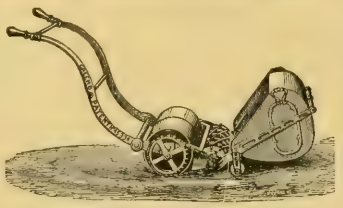
The market for house coals was steady on Monday, at previous quotations. Wednesday's currencies were:—Springwell West Hartley, 15*s.*; Walls End—Hetton, 17*s.*; Hetton Lyons, 15*s.* 3*d.*; Hawthorns, 15*s.* 3*d.*; Lambton, 16*s.* 6*d.*; Original Hartlepool, 17*s.*; Wear, 15*s.*; South Hetton, 17*s.*; Tunstall, 15*s.* 3*d.*

GREAT REDUCTION IN THE PRICE OF

GREEN'S PATENT "SILENS MESSOR,"

Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1878.

The Winner of every Prize in all cases of competition.



To cut 6 inches	Price	£1 15	0
Can be worked by a Lady.			
To cut 8 inches	,,	2 10	0
Can be worked by a Lady.			
To cut 10 inches	,,	3 10	0
Can be worked by a strong Youth.			
To cut 12 inches	,,	4 10	0
Can be worked by a Man.			
To cut 14 inches	,,	5 10	0
Can be worked by a Man.			
To cut 16 inches	,,	6 10	0
This can be worked by one Man on an even lawn.			
To cut 18 inches	,,	7 10	0
Can be worked by Man and Boy.			
To cut 20 inches	,,	8 0	0
Can be worked by Man and Boy.			
To cut 22 inches	,,	8 10	0
If made stronger, suitable for Donkey, 30*s.* extra.			
To cut 24 inches	,,	9 0	0
If made stronger, suitable for Donkey, 30*s.* extra.			

Prices of Donkey, Pony, and Horse Machines on application.

☞ Carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

The superiority of our Machines over those of all other makers is universally acknowledged. They will Cut either Long or Short Grass, Bents, &c., wet or dry.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

These Advantages no other Lawn Mowers possess

Every Lawn Mower sent out is warranted to give entire satisfaction, otherwise it may be returned at once, free of cost to the purchaser.

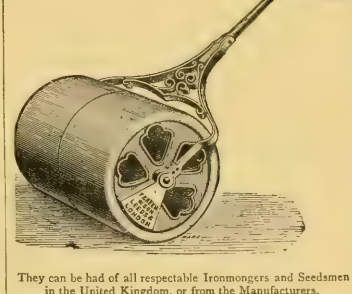
The largest stock of Mowers kept in London, and including all sizes from 6 to 48 inches, is to be seen at our London Establishment, 54 and 55, Blackfriars Road, where purchasers can select out of several hundred Machines, and have their orders executed the same day they are received.

N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an efficient staff of Workmen is kept at both places.

GREEN'S PATENT ROLLERS

For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.

SUITABLE FOR HAND OR HORSE POWER.



They can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or from the Manufacturers,

THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS;

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

*** Carriage paid to all the principal Railway Stations in the United Kingdom.

Descriptive Illustrated Price List Free on Application.

PEAT SOIL, PEAT SOIL.—Brown Fibrous, good quality, for Orchids, Pot Plants, Ferns, &c., 46 6*s.* per truck. Black, good quality, for American Plants, Rhododendrons, Azaleas, Heaths, &c., 37*s.* per ton, or 6-ton truck for £4 10. Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Cash with order. Sample sack, 55 *6d.*, or four sacks, 20*s.*

HOLDER AND SON, Crown Nurseries, Reading.

COCOA-NUT FIBRE REFUSE.—Unrivalled for Strawberries, Bedding Out, &c.

3*d.* per bushel, 100 bushels for £1, free to any London Station, or Single Horse Van, 7*s.*, at Works.

JAMES CROWLEY AND CO., Suffolk Place, Snow's Fields, Bermondsey, S.W.

COCOA-NUT FIBRE REFUSE.—Reduced Price:—In 4 bushel bags, bags included, at 1*s.*, or truckload of about 250 bushels, 25*s.* (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders. Orders punctually attended to.

J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE.

As supplied by M. H. Bentote to the Queen, Prince of Wales, Emperor of Germany, Messrs. Carter & Co., Veitch & Sons, Wills, Bull, Daniels, Ewing, &c.

3d. per bush.; 100 for 20s.; truck (loose, 250 bush.), **30s.**

4 bushel bags 4d. each.

LIGHT BROWN FIBROUS PEAT.—5*s.* 6*d.* per sack, 5 sacks 25*s.*, 12 for 45*s.*

BLACK FIBROUS PEAT.—5*s.* per sack, 5 sacks 22*s.*, 12 for 40*s.* Sacks 4*d.* each.

COARSE SILVER SAND.—12. 9*d.* per bushel, 15*s.* half ton, 25*s.* per ton, in 1 cwt. bags 4*d.* each.

YELLOW FIBROUS LOAM.—12. per bushel, 13*s.* half ton, 23*s.* per ton.

LEAF MOULD.—12. per bushel, 13*s.* half ton, 23*s.* per ton, in 1 cwt. bags 4*d.* each.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack. All kinds of MANURES, GARDEN STICKS, TOBACCO CLOTH and PAPER, and every GARDEN REQUISITE.

Write for free PRICE LIST. Goods free to rail.

Post-office Orders payable at King Street, Covent Garden, W.C. Cheques crossed London and County Bank, Covent Garden, W.C.

H. G. SMYTH (late M. H. Bentote),

8, CASTLE STREET, ENDELL STREET, LONG ACRE, LONDON, W.C.

(Three Minutes from Covent Garden Market.)

ODAMS' MANURES FOR ALL CROPS.

Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 acres of Land.

Chairman.—ROBERT LEEDS, Keswick Old Hall, Norwich.

Managing Director.—JAMES ODAMS.

Sub-Manager and Secretary.—C. T. MACADAM.

CHIEF OFFICE—109, Fenchurch Street, London, E.C.

WESTERN COUNTIES BRANCH—Queen Street, Exeter.

Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen in Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1*s.* 6*d.*, 2*s.* 6*d.* and 5*s.* per bottle. May be obtained through all Seedsmen, or direct from

JOHN SCOTT, The Royal Seed Stores, Yeovil.

The Orchardist, by J. Scott, price 3*s.* 6*d.*, the best work in the English language on Fruit Trees and their Cultivation.

By Permission of the Hon. Board of Customs.

(*Free of Duty.*)

NICOTINE SOAP,

A NEW and UNRIVALLED INSECTICIDE for PLANT CULTIVATORS.

No other Insecticide will bear comparison with this in killing properties, with perfect safety to foliage. No known blight can resist it, and it is the Cheapest in the market.

Price, in jars containing 8 oz., 1*s.* 6*d.*, and 20 oz, 3*s.*; drums, 28 lb., 25*s.*

2 oz. sufficient for 1 gallon of water for ordinary use.

Wholesale from the Manufacturers, CORRY AND SOPER, Bonded Tobacco Stores, Shad Thames, London, S.E.; or HOOPER AND CO., Covent Garden, W.C.; and Retail from all Seedsmen.

KREPIN.—A new patented liquid for Garden, Field, House, and Stable use, for the immediate destruction of all kinds of Insects, Eggs, Larvæ, without injury to Plants, Fruits, or Animals. Approved of and recommended by the German Ministry of Agriculture, and other high authorities on the Continent.

Sold in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 10*s.* each. Extra for Vaporisers, 1*s.* 3*d.* and 3*s.* 6*d.* May be obtained through all respectable Nurserymen and Seedsmen. Chief Depôt—

H. AND F. BONTEN, 116, Queen Victoria Street, E.C.

HORTICULTURAL GLASS, cut to any size, from 1½*d.* per foot; 21-oz., cut to any size, from 2*d.* per foot. Send sizes and full particulars for price.

ROBERT HOWARD AND CO., Glass Merchants, Birmingham.

IMPORTANT TO FARMERS.

BY ROYAL APPOINTMENT

TO HER MAJESTY,
By Special Warrant, dated December 27, 1865.

TO THE PRINCE OF WALES,
By Special Warrant, dated February 10, 1866.

DAY, SON, & HEWITT,

Inventors and Sole Proprietors of the "ORIGINAL"

STOCK-BREEDERS' MEDICINE CHESTS,

FOR ALL DISORDERS IN HORSES, CATTLE, CALVES, SHEEP, AND LAMBS.

No. 1 CHEST, £6 6 0. (CARRIAGE PAID.) **No. 2 CHEST, £2 16 6.**

HORSEKEEPER'S CHEST, No. 4, £2 17 6.

ESTABLISHED 1834. PRIZE MEDALS AWARDED.

DAY, SON, & HEWITT,

22, DORSET STREET, BAKER STREET, LONDON, W., and WANTAGE, BERKS.

ESTABLISHED 1820.

JARED T. HUNT & SON'S

PHOSPHO GUANO, DISSOLVED GUANO, WHEAT, BARLEY, AND POTATO MANURES,

RICH IN PHOSPHORIC ACID AND SOLUBLE PHOSPHATES, AND IMMEDIATELY AVAILABLE FOR THE FEEDING OF PLANTS.

PERUVIAN GUANO, NITRATE OF SODA, &c.

Delivered at any Railway Station.

BONE-SUPERPHOSPHATE of LIME and DISSOLVED BONES

FROM RAW LONDON BONES ONLY.

Also the LARGEST STOCK of CRUSHED BONES IN THE UNITED KINGDOM, consisting of half-inch, quarter-inch, Pulverised for Grass Lands, and Bones specially assorted for Vines.

MESSRS. JARED TERRETT HUNT & SON (Limited),

CHIEF OFFICES and WORKS: Bow Bridge Bone Mills and Chemical Manure Works, STRATFORD, LONDON, E.
Branch ditto: Downham Market, Norfolk.

N.B.—RESPONSIBLE AGENTS REQUIRED FOR DISTRICTS UNREPRESENTED.

THIRTEEN INTERNATIONAL MEDALS AWARDED TO

JAMES GIBBS & COMPANY,

SOLE MANUFACTURERS OF THE

PATENT AMMONIA-FIXED GUANO,

THE CHEAPEST AND BEST MANURE IN USE.

ALSO MANUFACTURERS OF THE HIGHEST CLASS

CHEMICAL MANURES.

The Results have given Universal Satisfaction, and Prove the Manures to be the Cheapest yet Sold.

FULL PARTICULARS OBTAINED ON APPLICATION.

HEAD OFFICES: 16, MARK LANE, LONDON, E.C.

BRANCH OFFICES: BRISTOL and PLYMOUTH. WORKS: VICTORIA DOCKS, LONDON, and CATTEDOWN, PLYMOUTH.

THE "CHATSWORTH"
VAPORISING FUMIGATOR.

(J. S. Ellis' Patent, No. 1395)

KILLS THRIPS, KILLS MEALY-BUG, KILLS RED-SPIDER, KILLS SCALE, &c.

Price 37s. 6d.





This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective mode of ridding them of that enemy to Cultivation, *Filth*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation; *for it is self-acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Plants or Flowers.*

Testimonial from Mr. Speed.

Gardener to His Grace the Duke of Devonshire, Chatsworth.

"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Squibs, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug, and most Scale, is a thing to be remembered.

"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being vaporised before passing into the house make it quite safe to be left until the combustion is finished.

"THOMAS SPEED,

"The Gardens, Chatsworth, October 9, 1877.

'Mr. Ellis, Norfolk Foundry, Sheffield."

Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

ELLIOTT'S NEW SHADING FOR GLASS HOUSES, "**SUMMER CLOUD,**" is applied in a manner similar to ordinary paint, and can be highly recommended for its Pleasing Appearance, the Healthful and Beautiful Effect it has on all Plants grown under it, the ease with which it can be applied, and for its great economy.

Manufactured solely by H. ELLIOTT, Seedsman, Braywick, Maidenhead, Berks, and Sold in Canisters at 1*s.* 6*d.*, 2*s.* 6*d.*, 5*s.*, and 10*s.* each.

London Agents: Messrs. HURST AND SON, 6, Leadenhall Street, E.C.; and of all Seedsmen.

ELLIOTT'S "TELEGRAPH" FRUIT PROTECTORS.

ELLIOTT'S GRAPE CRINOLINES.—Prospectuses and Prices on application.

GRANITIC PAINT, for Greenhouses and for all Decorative or General Purposes where durability and beauty are desired.

SILICATE ZOPISSA COMPOSITION, all Colours, for Damp Walls, Preserving Stone, &c., either internal or external.

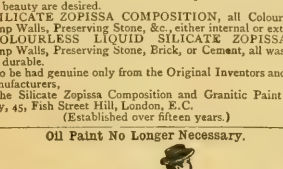
COLOURLESS LIQUID SILICATE ZOPISSA for Damp Walls, Preserving Stone, Brick, or Cement, all washable and durable.

To be had genuine only from the Original Inventors and Sole Manufacturers,

The Silicate Zopissa Composition and Granitic Paint Company, 45, Fish Street Hill, London, E.C.

(Established over fifteen years.)

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 2*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.

"*The Ryleys, Alderley Edge, Manchester.*—Messrs. Hill & Smith,—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted. —Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley: 128, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.

The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof in indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

Extract from *Building News.*

"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire; and 19, Parliament Street, London, W.C.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

HORTICULTURAL WINDOW GLASS.

A large variety of sizes, 15-oz., 12*s.* 6*d.*; 21-oz., 16*s.* 6*d.* per 100 feet. Large sizes, in Cases, for Cutting up—15-oz. 41*b*s, 30*s.*; 36*s.* 40*s.* per 100 feet; — 21-oz. 41*b*s, 30*s.*; 38*s.*, 40*s.* per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

BELGIAN GLASS for GREENHOUSES, &c.,

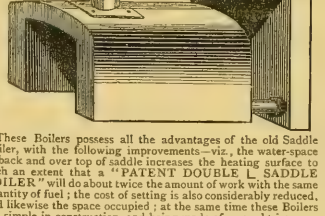
Can be obtained in all sizes and qualities, of

BETHAM & SON,

9, LOWER THAMES STREET, LONDON, E.C.

B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in, 20-in. by 18-in., in 16-oz. & 21-oz.

JONES'S PATENT "DOUBLE L" SADDLE BOILER."



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.		
High.	Wide.	Long.	Feet.	£	s.	d.
20 in.	18 in.	18 in.	3 0	7	0	0
20 ,,	18 ,,	24 ,,	400	8	0	0
20 ,,	18 ,,	30 ,,	500	9	0	0
24 ,,	24 ,,	24 ,,	700	12	0	0
24 ,,	24 ,,	30 ,,	850	14	0	0
24 ,,	24 ,,	36 ,,	1000	16	0	0
24 ,,	24 ,,	48 ,,	1400	20	0	0
28 ,,	28 ,,	60 ,,	1800	25	0	0

Larger sizes if required.

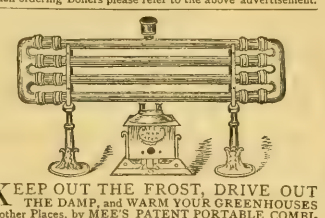
From Mr. CHARLES YOUNG, *Nurseryman, Balham Hill, S.W., May 29, 1873.*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.

J. JONES AND SONS, Iron Merchants, 6, Bankside, Southwark, London, S.E.

When ordering Boilers please refer to the above advertisement.

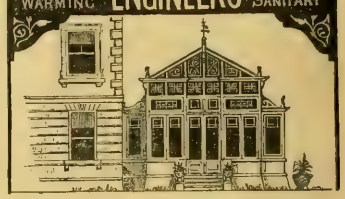


KEEP OUT THE FROST, DRIVE OUT THE DAMP, and WARM YOUR GREENHOUSES or other Places, by MEE'S PATENT PORTABLE COMBINATION HOT-WATER APPARATUS.

Price, with packages, £4 10*s.*

F. AND J. MEE, Hot-water Engineers and Patent Boiler Makers, 11, Wood Street, Liverpool.

ROSSER & RUSSELL
HORTICULTURAL ENGINEERS VENTILATING & SANITARY WARMING



NEW CATALOGUE

Of CONSERVATORIES and GREENHOUSES in Wood and Iron, architecturally treated and designed expressly for this work. Post-free 1*s.*

OFFICES & SHOWROOMS, 46 CHARING CROSS.
WORKS QUEEN'S WHARF HAMMERSMITH.

AGRICULTURAL LOCOMOTIVES,

STEAM PLOUGHING MACHINERY,

ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES, STEAM ROAD ROLLERS.

For Prices, Description, and Reports of Working, apply to the Manufacturers,

AVELING & PORTER,

ROCHESTER, KENT; 72, CANNON ST., LONDON, E.C.; and 9, AVENUE MONTAIGNE, PARIS.

AVELING & PORTER'S ENGINES have gained the highest Prizes at every important International Exhibition. The two Medals for Progress and Merit were awarded them at Vienna for their STEAM ROLLERS and ROAD LOCOMOTIVES; and at the last trials of the Royal Agricultural Society of England their AGRICULTURAL LOCOMOTIVES gained the First Prize after exhaustive trials, when one of their 10-horse power Engines, fitted with single slide and ordinary link-motion, indicated 35-horse power, with a consumption of *three and one-fifth pounds of coal* per horse-power per hour.

PARIS EXHIBITION.

FOR PORTMANTEAUS, TRUNKS, *BAGS and HAT CASES,*

GO TO

RILEY & CO., 283, Strand (opposite Norfolk Street).

Also the TOURIST COMPANION. Store Prices.

GARDEN SPECIALITIES.'—Tanned Netting, Scrim, Tiffany, Elastic Netting, Patent Shading, Frigi Domo, Bunting, &c. SAMPLE BOOK sent for two stamps.

JOHN EDGINGTON AND CO., Marquee and Tent Makers, 48, Long Lane, West Smithfield, London, E.C.

BUNYARD'S NETTINGS,

for Garden use: 2 yards wide 2*d.*, and 4 yards wide 4*d.* per yard.

BUNYARD'S SHADING, 36 inches 4*d.*, and 72 inches 6*d.* per yard; ditto Cotton, 60 inches, 4*d.*, 5*d.*, and 8*d.* per yard.

BUNYARD'S LAWN TENNIS NETS,

White and Tanned.

BUNYARD'S MARQUEES,

Ready in Stock.

BUNYARD'S RICK and HAY COVERS

Are the Best.

BUNYARD'S TENTS,

Square, Round, French Canopy, and all other Shapes in Stock.

BUNYARD'S FLAGS

Are the Cheapest and Best.



Post-office Order or Cheque required from unknown Customers. Parcels of £2 value and upwards Rail carriage paid to nearest Station for prepayments.

MATS, LINES, TWINES, HORSE CLOTHING, &c.

Postal Address:—

HARRY BUNYARD,

64, TOOLEY STREET, LONDON, S.E.

BRANCHES AT { 4, Hart Street, Mark Lane, E.C. 46, Week Street, Maidstone, Kent.

Illustrated Price Lists and Samples Post-free.

C A L I C O.
24 inches wide, 100 yards for 10s.
For Shading Greenhouses, Seed Beds, and for Butter Cloths and Dusters. Delivered on rails at Burnley.
Post-office Order to accompany each Order, payable to
W. E. KAY, Manufacturer, Burnley.



BAYLISS, JONES & BAYLISS,
Patentees and Manufacturers of Wrought Iron
CONTINUOUS BAR FENCING,
Iron Hurdles, Strained Wire Fencing,
Field and Entrance Gates, Tree Guards, &c.,
VICTORIA WORKS, WOLVERHAMPTON,
And 3, Crooked Lane, King William Street, London, E.C.
Catalogues free on application.

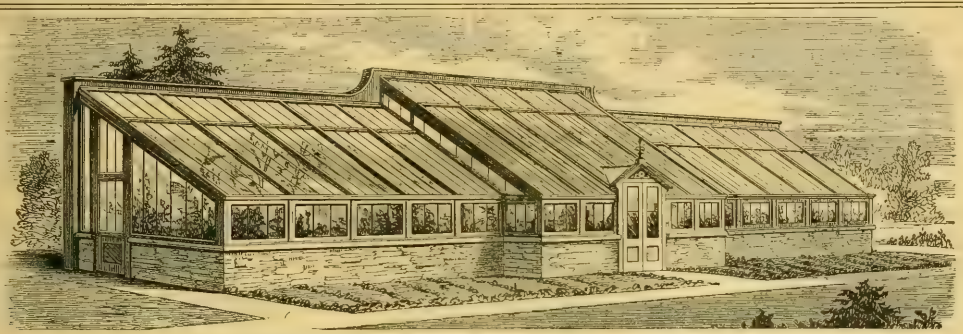
NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.
TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3d. per yard, or 100 yards, 20s.; 4 yards wide, 6d. per yard, or 50 yards 20s.
NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6d. per yard; 4 yards wide, 1s. per yard; ¾-inch mesh, 4 yards wide, 1s. 6d. per yard.
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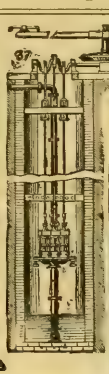
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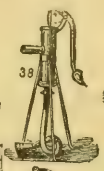
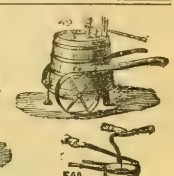


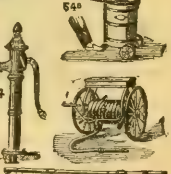
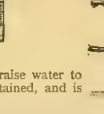
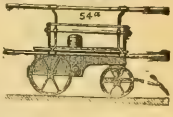
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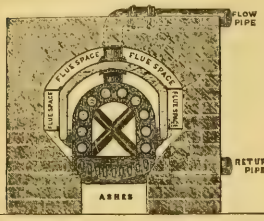
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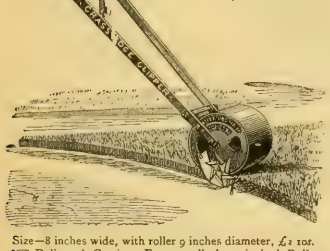
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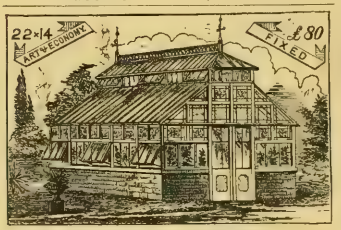


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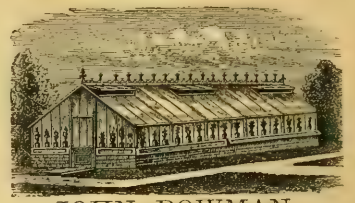
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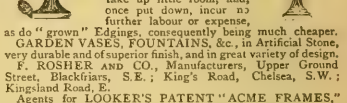
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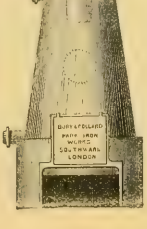
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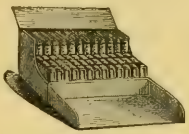
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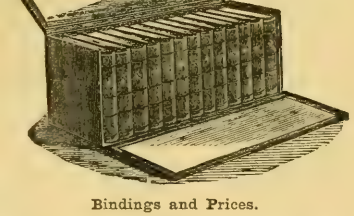
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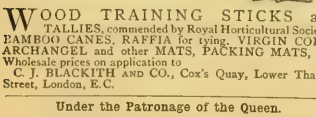




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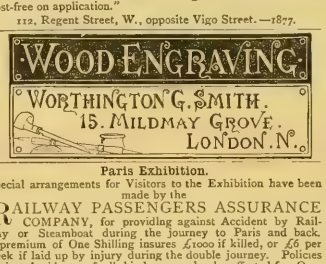
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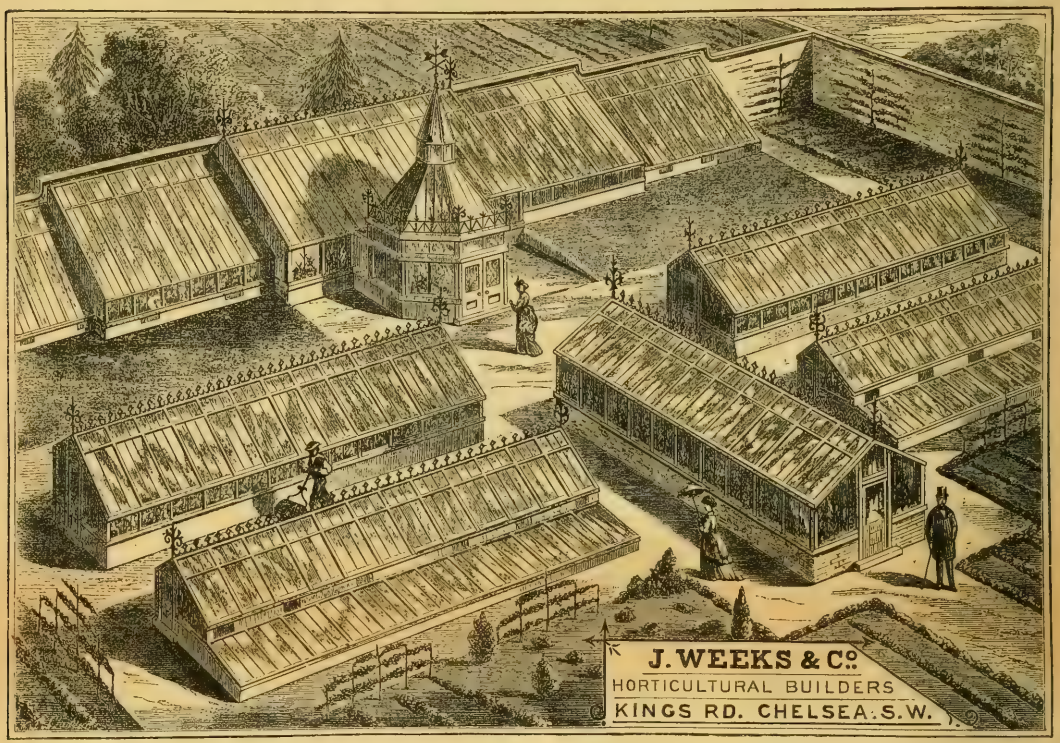
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ROYAL HORTICULTURAL SOCIETY.
Great Provincial Show at Preston.
Awards of the Judges: Errata.

In the Implement Department, Class 130 to Messrs. R. Halliday & Co., Manchester, were awarded a Gold Medal, instead of a Silver one, as stated at p. 37.

In Class 56—72 Roses, distinct, single (Nurserymen), Messrs. Cranston & Co., Hereford, were 1st, and not Messrs. Paul & Son, Cheshunt, as printed at p. 36.

ROYAL HORTICULTURAL SOCIETY'S SHOW at PRESTON.

The FIRST PRIZE offered for MISCELLANEOUS PLANTS was awarded to a selection of beautiful SUCCULENTS belonging to MESSRS. JAMES DICKSON AND SONS, Newton Nurseries, Chester, who exhibited part of their very large and interesting collection of these plants.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

EXHIBITION of the NATIONAL CARNATION and PICOTEE SOCIETY in conjunction with the FRUIT and FLORAL MEETINGS of the ROYAL HORTICULTURAL SOCIETY, TUESDAY, July 23. For Conditions see Schedule of Prizes, to be obtained on application at the Society's Office.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE.—CARNATION and PICOTEE SHOW, SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, July 23, in the Council Room, at 11 o'Clock. GENERAL MEETING for ELECTION of FELLOWS at 3 o'Clock.

Admission One Shilling.

WESTON-SUPER-MARE and EAST SOMERSET HORTICULTURAL SOCIETY.

The SIXTH ANNUAL EXHIBITION in connection with this Society will be held at Weston-super-Mare, on WEDNESDAY, July 31, when TWO HUNDRED POUNDS will be offered in Prizes. Schedules forwarded on application to

W. B. FRAMPTON, Sec., Weston-super-Mare.

SOUTHAMPTON HORTICULTURAL SOCIETY. (Under the immediate Patronage of H.R.H. Prince Leopold.) GRAND FLORAL SHOW, August 3 and 5. TWO HUNDRED POUNDS in Prizes.

SPECIAL NOTICE TO EXHIBITORS.—In Class 27, 18 Miscellaneous Plants, not less than 5 to be in bloom, open to Gardeners, the Prizes are increased as follows:—First Prize, a Silver Cup value Ten Guineas, presented by H.R.H. Prince Leopold; Second Prize, £3; Third Prize, £2; Fourth Prize, £1. Last day of Entry, July 28.

C. S. FUIDGE, Secretary, 39, York Street, Lower Avenue.

LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY.

THE GRAND ANNUAL ROSE SHOW will be held on the beautiful Grounds of the County Asylum, on TUESDAY and WEDNESDAY, July 23 and 24.

£52 in Prizes for CUT ROSES, and other numerous and liberal Prizes for FRUIT, VEGETABLES, PLANTS and FLOWERS.

Great Attraction for the Second Day. Athletic Competition. £14 in Prizes for 2-mile Walk, and 250 Yards Flat Race.

The splendid BANDS of the Leicestershire Militia, Prince Albert's Own L.Y.C., and the Rifle Volunteers (by permission of the Commanding Officers), under the direction of Messrs. H. Nicholson and J. Smith.

For Special Train Arrangements see Window Bills.

A Grand Display of FIREWORKS each evening.

Dancing after Six o'clock on both days.

Further particulars on application to the Secretary,

THOS. P. BROWN,

1D, Bowling-green Street, Leicester, and Holbrook Road, Knighton.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

SPECIAL EXHIBITION for COTTAGERS on SATURDAY, August 3.

Schedules of Prizes may be obtained from

BRUCE FINDLAY, Curator and Secretary,

Royal Botanic Gardens, Manchester.

CLAY CROSS HORTICULTURAL SOCIETY.

Twenty-First Annual Exhibition, AUGUST 13. Prizes THREE HUNDRED and FIFTY POUNDS. Twenty Plants, £25, £20, £15, £10, and £5. For the Best Dish of Peaches and Nectarines, £3 and the Veitch Memorial Medal. Entries must be sent and the entrance fee paid on or before August 5.

J. STOLLARD, Secretary, Clay Cross, near Chesterfield.

B. MALLER, LEWISHAM, has to offer for cash 3000 GREVILLEA ROBUSTA in 48-pots at 7s. per 100. Less number than 50, 12s. per dozen.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.

BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

ROSES.—Visitors to the Nurseries are invited to inspect our extensive Collection of ROSES, which are now in magnificent bloom.

CRANSTON'S Nurseries, King's Acre, Hereford.

True Native Scotch Fir Seed.

R. AND A. MORRISON, NURSERYMEN, Elgin, are taking in Orders for the above for spring delivery. Price on application.

TO BE SOLD, a great bargain, TWENTY-THREE Specimen STOVE PLANTS, the property of a gentleman in Yorkshire. All particulars on application to JAMES DICKSON AND SONS, Newton Nurseries, Chester.

Mitchell & Sons' Renowned Roses.

JAMES MITCHELL AND SONS beg to announce that their magnificent collection of ROSES are now in full bloom.

Piltdown Nurseries, near Uckfield, Sussex.

Venus' Fly-Trap.

DIONÆA MUSCIPULA.—Nice plants with good traps, of this interesting Fly-catcher, 30s per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

To the Trade.—New Roses of 1878.

GEO. COOLING begs to offer extra fine plants of thirty-two of the best varieties of the above, with plenty of buds for immediate working. List and price on application. The Nurseries, Bath.

Gentlemen's Gardeners, Amateurs, and Others REQUIRING

GARDEN POTS of best quality, are requested to send their orders to

J. MATTHEWS, Royal Pottery, Weston-super-Mare.

Price List on application.

Genuine Garden Seeds.

WM. CUTBUSH AND SON have for many years held some of the finest stocks of Seeds in the Trade, and they believe that no House can possibly supply better quality.

CATALOGUES post-free on application.

Highgate, London, N., and Barnet, N.

New Cineraria Seed.

F. AND A. SMITH can now supply New Seed, saved from their unrivalled collection, in 1s., 2s. 6d., and 5s. packets. Price by weight to the Trade on application. Also Seedling Plants at 10s. per 100, or 1s. 3d. per dozen, post-free.

West Dulwich, S.E.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

POTATOS.—20 sacks Extra Early Vermont, 10 sacks Giant King, 10 sacks American Breadfruit, perfectly sound, true, and well dried. Price 8s. per cwt.

The Holt, Great Oakley, Harwich, Essex.

VEGETABLE PLANTS.—Brussels Sprouts and Drumhead Savoy, Green Curled Scotch and Asparagus Kale, and Sugarloaf Cabbage, 3s. per 1000; Early, Second and Late Broccoli, 5s. per 1000.

JOSEPH BOWEN, High Wycombe.

Cabbage Plants.

FOR SALE, a quantity of good strong Enfield Market CABBAGE PLANTS, on rail at 3s. per 1000. Can now be supplied by

J. WOOBERRY, Washington, Pulborough, Sussex.

WANTED, a good Specimen of DIPLADENIA BREARLEYAVA.—State size and price to J. G., *Gardeners' Chronicle* Office, W.C.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

ALTERNANTHERAS, and other Carpet Bedding Plants, from Stores or in pots, in any quantities, consisting of all the best varieties. Priced Lists on application.

WILLIAM MILES, West Brighton Nurseries, Cliftonville, Sussex.

To the Trade.

RAPE SEED and WHITE MUSTARD.

H. AND F. SHARPE have fine samples of the above-named Seeds, suitable for sowing purposes. Prices, &c, may be had on application.

Seed Growing Establishment, Wisbech.

Clianthus Dampieri Seed.

TO THE TRADE

HURST AND SON beg to offer New Seed of CLIANTHUS DAMPIERI, in fine condition. Price on application.

6, Leadenhall Street, London, E.C.

CALCEOLARIA, superb selection, magnificent colours, beautifully marked.

CINERARIA, of splendid colours and large flowers.

PRIMULA, from exhibition plants.

The above are raised by the best growers in the kingdom. Packets 1s. and 2s. 6d. Supply limited, cannot serve the Trade.

C. R. FREEMAN, Economic Seedsman, Norwich.

Dutch Bulbs, First Quality Only.

C. G. VAN TUBERGEN'S Wholesale CATALOGUE of Hyacinths, Tulips, &c., will be forwarded free to the Trade on application to

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

C. G. VAN TUBERGEN, Nurseryman, Haarlem, Holland.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

For Autumn Exportation.

J. VANDER SWAELMEN'S ENGLISH TRADE CATALOGUE is now ready, containing the most commercial Plants and Bulbs. Free on application.

The Lily Nursery, Ghent, Belgium.

New Plant Catalogue.

HEATH AND SON beg to announce their New Illustrated CATALOGUE of ORCHIDS, FERNS, STOVE PLANTS, &c., is now ready, and will be forwarded, gratis and post-free, to all applicants.

HEATH AND SON, Nurserymen, &c., Cheltenham.

Hyacinths, Tulips, and Other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.

CATALOGUES and Prices on application. Special terms to the Trade.

HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

To Amateur Strawberry Growers.

RUNNERS, strong and well-rooted, are now ready, from H. D. Thury, President, Sir J. Paxton, and B. Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants post-free, 1s.

Manual on Strawberry Culture, 6d.

W. LOVELL, Strawberry Grower, Weaverthorpe, York.

STRAWBERRY PLANTS.—100,000 Vicomtesse Hericart de Thury (Garibaldi), now ready, and all the best proved Covent Garden kinds. Special quotations for large quantities. Catalogue, with valuable information, post free.

H. CANNELL, F.R.H.S., Swanley, Kent.

Decorative Pelargoniums.

F. AND A. SMITH are now distributing their new varieties of the above, which are strongly recommended for their bright, diverse, and original colours, dwarf robust habits, rendering the use of sticks and tying in a great many instances unnecessary. They have obtained much commendation and several awards, and will give general satisfaction. Lists with terms on application.

West Dulwich, S.E.

To the Trade.

LILIUM AURATUM, 12s. per dozen, extra fine; HYACINTHS, White Roman; JONQUILS, double; NARCISS, paper-white and double Roman; ANEMONE FULGENS; SNOWDROPS, double and single; BEGONIA FROEBELI, double white NARCISS. Prices low, quality extra.

F. SANDER AND CO., Seed Growers, St. Alb. ns.

SALES BY AUCTION.

South Norwood.
Eight minutes' walk from Norwood Junction.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor (who is leaving the neighbourhood), to SELL by AUCTION, on the Premises, Lyndhurst Lodge, White Horse Lane, on TUESDAY, July 30, 1878, at 1 o'Clock precisely, the whole of the STOVE and GREENHOUSE PLANTS, including about 200 large double Camellias in fine condition, from 2 feet to 20 feet high, comprising alba plena, Lowii, Blairii, Bealii Perfection, Countess of Oxford, Conspicua, fimbriata, Princess Marie, imbricata rubra, Countess of Orkney, anguste superba, Calypso, and others; pyramidal-trained Azalea indica; 7 nearly new 1, 2, and 3 light BOXES; 4 feet 1-horse IRON FIELD ROLLER; 24-inch LAWN MOWER; GARDEN ROLLER; 2 Gentlemen's RIDING SADDLES; 2 sets Plated HARNESS, complete; and other effects.

On view the day prior, and Catalogues had of Mr. J. CLACEY, the Gardener, on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Ampthill Nursery, Ampthill Square, Hampstead
Road, N.W., close to Gower Street Station.

Owing to continued ill-health the Proprietor, Mr. R. Green, intends greatly curtailing his business at the end of the present season, and to discontinue the Furnishing Department. He has therefore instructed

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, on the Premises as above, on WEDNESDAY, July 31, at 12 o'Clock sharp, in consequence of the great number of lots, the whole of the ORNAMENTAL FOLIAGE PLANTS and FERNS, including 3 large Tree Ferns; 12 Dracænas, 10 feet high; 1 large Corypha australis; 6 Sabal umbraculifera, 3 to 4 feet; 2 large Latania borbonica; a splendid specimen of Araucaria excelsa, 20 feet; a fine pair of Areca Verschaffeltii; thousands of smaller Plants, in 48's and 60's; a few lots of Orchids; 200 feet 4-inch Hot-water Piping, &c. More particulars next week.

On view three days prior to Sale. Catalogues had on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Orchids and Ferns.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 24, at half-past 12 o'Clock precisely, an importation of TODEA SUPERBA from New Zealand, Specimen ORCHIDS and other PLANTS, which have been exhibited at the Royal Horticultural Society's Show; several importations of ORCHIDS from Brazil, Java, and other parts; a collection of STOVE PLANTS; 40 bundles of MANILLA CANES, &c.

On view the morning of Sale, and Catalogues had.

The Nurseries, Taunton, Somerset.
IMPORTANT and ATTRACTIVE SALE of ORCHIDS, STOVE, GREENHOUSE and other PLANTS.

MESSRS. EDWIN WOTTON AND CO. have received instructions from Mr. W. Hockin to SELL by AUCTION, on the Premises, North Town, Taunton, on WEDNESDAY and THURSDAY, July 24 and 25, to commence each day at 11 o'Clock, COLLECTIONS of SPECIMEN STOVE, FOLIAGE, and GREENHOUSE PLANTS, Orchids, Exotic and British Ferns, Palms, Eucharis amazonica, Amaryllis, Liliums, and other Bulbs; Camellias, Azaleas, Epacris, and Heaths; 50 Magnolia grandiflora, 4 to 6 feet; pyramidal Myrtles, Cytisus racemosus; 17 large Specimen Fuchsias, 6 to 8 feet; 38 Zonal and Nosegay Geraniums, averaging 2 feet across; Acer Negundo variegata, in pots; and a quantity of other Miscellaneous Plants, VASES, RUSTIC SEATS, RUSTIC ARBORETTES, HANGING BASKETS, &c.

Catalogues and Orders to View may be obtained on the Premises, or at the offices of the Auctioneers, 28, East Street, Taunton, five days prior to the day of Sale.

To Nurserymen, Florists, Gardeners, and Others.

FOR DISPOSAL (in consequence of family bereavement), a very compact and convenient FLORIST'S BUSINESS, in a fast increasing neighbourhood, two miles from Covent Garden, consisting of a good Eight-roomed Dwelling-house, Six Glass-houses heated with Hot Water, Potting-sheds, &c., commanding Front to Main Road, and doing a good Jobbing and Cut Flower Trade, &c., which may be extensively increased. Long Lease, and moderate Rent. Immediate possesion can be had.

For further particulars apply to F. W. A., Swiss Nursery, Loughborough Road, Brixton.

To Market Gardeners and Others.

TO LET on Lease from Michaelmas next, about 60 Acres of ARABLE LAND, adjoining Buckden Station, Huntingdonshire, two hours from London. Soil suitable for a Market Garden. A Cottage on the ground, and usual Farm Premises. Address

Rev. H. M. ROXBY, Buckden Vicarage, Huntingdon.

TO LET, for a Term of years, a FLORIST'S BUSINESS, well situated in the West End. Compact and in Good Repair.

A. B. C., *Gardeners' Chronicle* Office, W.C.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ORCHIDS.—Thousands of choice Orchids arriving this month from Brazil, West Indies, Colombia, Assam, &c., can be supplied in fine imported pieces on arrival, at 3s. 6d., 5s., 7s. 6d., and 10s. 6d. A choice selection of Established and Semi-established plants, growing freely and in good health, also kept in stock. Orchid growers are respectfully requested to make an early application to the

NEW PLANT AND BULB COMPANY, Lion Walk, Colchester, in order to secure the best pieces.

N.B.—The Brazilian Orchids are to hand, in fine condition.

To the Trade Only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN and FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE for 1878-79, first part (332A), is Now Ready, and may be had free on pre-paid application by Nurserymen, Florists, and Seedsmen. The Catalogue contains complete collections of Hyacinths, Tulips, Crocus, Narcissus, Fritillarias, Ranunculus, Anemones, Lilies, Iris, Gladiolus, Paeonies, Amaryllis, &c. The second part of this Catalogue (332C), containing a complete list of miscellaneous Bulbous and Tuberous-rooted Plants, will be sent out beginning of August.

Four Choice and Handsome Orchids.

MR. WILLIAM BULL offers:—
AERIDES FIELDINGII (FOXBRUSH),
DENDROBIUM BIGIBBUM,
CYMBIDIUM EBURNEUM.
CŒLOGYNE BARBATA,
at the extremely low price of 10s. 6d. each.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.



The Pine-apple Nursery, Maida Vale,
LONDON, N.

E. G. HENDERSON AND SON can supply SEED of the following, quality of strains are the best that can be grown, at per packet:—
PRIMULA SINENSIS FIMBRIATA, mixed colours or separate, 2s. 6d.
PRIMULA SINENSIS FIMBRIATA, double-flowered, white or mixed, 2s. 6d. and 5s.
PRIMULA SINENSIS FIMBRIATA, Maiden's Blush, new double, 2s. 6d. and 5s.
CINERARIA and CALCEOLARIA, each 2s. 6d.
CYCLAMEN PERSICUM GRANDIFLORUM, 1s. and 2s. 6d.
PANSIES, best English and blotched flowers, each 1s. 6d.
CARNATION and PICOTEE, each 2s. 6d.

Palms.

J. LINDEN has much pleasure in offering to the Trade the following choice PALMS, admirably adapted for Table Decoration, for Vases, and for almost every purpose in which ornamentation is desired:—
DÆMONOROPS FISSUS, first-rate plants, 24 inches high, seven leaves, 80s. per dozen; young seedlings, 30s. and 40s. per dozen.
CHAMÆDOREA GRAMINIFOLIA, 12 inches high, very nice plants, 80s. per dozen.
COCOS WEDDELLIANA, 12 inches high, five leaves, 40s. per dozen.
GEONOMA GRACILIS, young plants, five leaves, 60s. per dozen.
ARECA LUTESCENS, 18 inches high, five leaves, 20s. per dozen; young plants, 60s. and 100s. per 100.
KENTIA ROBUSTA, the most elegant of Kentias, young plants, five leaves, 80s. per dozen.
PHŒNICOPHORIUM SECHELLARUM (Stevensonia grandifolia), young seedlings, 80s. per dozen.
ARALIA ELEGANTISSIMA, 15 inches high, twenty-five to thirty leaves, 40s. and 60s. per dozen.
A large stock of nice CAMELLIA and AZALEA INDICA Plants, with many Buds, will be available on September 1 next. Price for the former, £6, £8, and £12 per 100, according to force; price for the latter, £5, £6, £8, £12, £20 and upward, according to strength. Orders are kindly requested to be sent forthwith. Apply to

J. LINDEN, Exotic Nurseries, Ghent, Belgium.

SPECIAL OFFER to the TRADE of HARDY BULBS and FLOWER ROOTS.

Camassia esculenta, 20s. per 100.
Delphinium nudicaule, 17s. per 100.
Dielytra spectabilis, strong plants, 25s. per 100.
Erythronium dens-canis, fl. roseo, 7s. per 100.
Hemerocallis fulva, 12s. per 100.
Iris cristata, 17s. per 100.
,, germanica, the best named varieties, 13s. per 100.
,, pumila azurea, 17s. per 100
Lilium auratum, home-grown bulbs, 1¼ in. in diam., 100s. per 100; 1¼ to 2 in., 125s.; 2 in., 167s.; and 2 to 2½ in., 200s.
,, bulbiferum, 42s. per 100.
,, Martagon, 20s. per 100.
,, tigrinum, 5s. per 100.
,, ,, fl. pl., 6s. per 100.
,, ,, splendens, 84s., per 100.
,, umbellatum atro-sanguineum, 20s. per 100.
,, ,, grandiflorum, 25s. per 100.
,, ,, speciosum superbum, 34s. per 100.
Muscari botryoides, 4s. per 100.
Muscari comosum monstrosum, 5s. per 100.
Narcissus biflorus, 4s per 100.
,, odorus (Campernel Jonquil), 4s. per 100.
,, poeticus, fl. pl., 5s. per 100.
,, Tazetta aureus (Grand Soleil d'Or), 9s. per 100.
,, telamonius, fl. pl., 7s. per 100.
Orchis maculata, home grown, 10s. per 100.
Ornithogalum splendens, 3s. per 100
Platycodon grandiflorum, fl. cœruleo (Campanula grandiflora), 17s. per 100.
Polygonatum multiflorum (Convallaria multiflora), 9s per 100
Saxifraga granulata, fl. pl., 3s. per 100.
Scilla hyacinthoides cœrulea, 5s. per 100.
,, patula albida, 7s. per 100.
,, patula atro-cœrulea, 7s. per 100.
Smilacina bifolia (Convallaria), 9s. per 100.
Spiræa filipendula, fl. pl., 9s. per 100.
Triteleia uniflora, 3s. per 100.

FLOWER ROOTS for COLD FRAMES.

Canarina campanula, 34s. per 100.
Cyclamen persicum, fl. roseo, 25s. to 67s. per 100.

All grown in pots.

HARDY PERENNIALS.

Spiræa Aruncus, 25s. per 100.
,, japonica (Hoteia), 14s. per 100, £5 17s. per 1000.
Spiræa palmata, 84s. per 100.
,, elegans, 8s. each, six plants, £2; twelve plants, £3 10s.

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK,
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

RICHARD SMITH WORCESTER

ROSES, choice Tea-Scented and Noisette, in great variety.
ROSES, Hybrid Perpetual, strong, for forcing.
ROSES, New, for 1878.
CLEMATIS JACKMANNI and many other sorts for bedding and climbing.
Bedding Plants, strong and healthy; Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.

Descriptive priced LISTS free on application.
RICHARD SMITH AND CO., Nurserymen, Worcester.

Special Cheap Trade Offer.

FERNS, PALMS, AZALEAS, CAMELLIAS, &c.

JOHN H. LEY,
ROYAL NURSERY, CROYDON,

Will be pleased to send (on application) a List of very cheap and good plants. Greenhouse Ferns especially fine, by the 100 or 1000, at less than a quarter of usual prices.

Also Special Retail LIST of New and Rare Plants, Cheap Ferns and Stove Plants, post-free to all applicants.

Cuttings of all the

GOOD THINGS.

IN SOFT-WOODED and BEDDING PLANTS are now very Cheap. Posted to all parts of Europe.

From R. LARIOS, Esq., *Malaga, Spain, June 25, 1878.*
"Dear Sir,—I have received the four Coleus and two Zonals by post, in perfect condition."

"*Florence, Italy, July 12, 1878.*
"Dear Sir,—The second package of cuttings, by post, arrived in good condition.—Very truly yours, ARTHUR REED."

CATALOGUE post-free.
H. CANNELL, The Home for Flowers, Swanley, Kent.

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GENERAL CATALOGUE
Of STOVE and GREENHOUSE PLANTS is now ready. It contains a Descriptive List of the leading Novelties, also of Azaleas, Camellias, &c. Post-free on application.

THE FULHAM NURSERIES, LONDON, S.W.

WM. PAUL & SON,
(Successors to the late A. Paul & Son, Established 1806.)



ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS, HERTS.
Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.
Priced Descriptive Catalogues free by post.

£25. PRIZE FOR GARDEN PRODUCE

FREEMAN'S ALL HEART CABBAGE, 1s. per ounce, 10s. per lb. One of the most compact and best selected stocks of Cabbages grown.
FREEMAN'S INCOMPARABLE SPRING CABBAGE, 1s. per ounce, 10s. per lb. A splendid exhibition variety, tender, melting, and delicious flavour.
FREEMAN'S MONSTROUS ITALIAN ONION, 1s. 6d. per ounce, 12s. per lb. The largest and best flavoured Onion in cultivation.
FREEMAN'S GIANT ROCCA ONION, 1s. per ounce, 10s. per lb.
The above Price will be given in one sum to the Grower of the best Specimens of Garden Produce from Seed supplied by
C. R. FREEMAN, ECONOMIC SEEDSMAN, NORWICH.

VINES—VINES—VINES.
A splendid lot of well hardened Canes, fit for immediate planting. All the most approved varieties. 7s. 6d. and 10s. 6d. each. Also

FIGS IN POTS,
Well set with Fruit, 5s. to 10s. 6d. each.

APPLY TO
OSBORN AND SONS,
THE FULHAM NURSERIES, LONDON, S.W.

RICHARD SMITH WORCESTER

STRAWBERRIES.—Strong plants of the leading sorts can be supplied from the open ground after July 15, at 5s. per 100. See Descriptive FRUIT LIST, to be had on application.
RICHARD SMITH AND CO., Nurserymen, Worcester.

B. S. WILLIAMS'

NEW AND CHOICE

FLOWER SEEDS FOR 1878,

Post Free. Per packet—*s. d.*

AURICULA, finest show varieties ... 1 6
„ Alpine, finest mixed 1 0
BEGONIA HYBRIDA, finest mixed ... 2 6



CALCEOLARIA, Williams' Superb Strain, per packet, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1 6

From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice Strain .. per packet, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.* and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

SOLANUM HYBRIDUM, "Empress" (New) .. .. per packet 2 6

ILLUSTRATED GENERAL,

AND ALSO

NEW PLANT CATALOGUES,

Now ready, post-free to all applicants.

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

HYACINTHS, TULIPS, CROCUS,

GLADIOLI, &c.

Our Revised LIST for 1878 is now ready, and will be handed to all Gardeners and Amateurs, post-free, on application to Messrs. MERTENS AND CO., Forwarding Agents, 5, Billiter Square, London, E.C., or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

SUTTON'S

CHOICE VEGETABLE SEEDS,

FOR PRESENT SOWING.

CABBAGE.



Sutton's Imperial. The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use. Heads cone-shaped, very large, firm, and of mild flavour. *1s. per ounce.*

	Per oz.—*s. d.*
Enfield Market	.. 0 8
Nonpareil	.. 0 6
Early Dwarf York	.. 0 6
Red Pickling	1 6

ONION.—New Queen.

A valuable, new, and distinct variety, being the earliest of all Onions. Sown in March it comes to maturity in July, or sown in July it is fit for use the following autumn. It is of beautiful mild flavour, and strongly recommended.

Per packet, 1s.

The following varieties, sown in July and August, will come to a very large size during the following Spring and Summer:—

	Per oz.—*s. d.*
NEW GIANT ROCCA (the largest variety)	1 3
LARGE EARLY RED ITALIAN	1 3
LARGE EARLY WHITE ITALIAN	1 3
GIANT LATE RED ITALIAN	1 3
GIANT LATE WHITE ITALIAN	1 3

VEGETABLE SEEDS up to 12 ounces in weight sent by post with a charge of *4d.* for the 12 ounces, or 20*s.* worth free to any Railway Station in England and Wales.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

Important to all Admirers of Clean, Healthy Foliage.

SPEED'S



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes:—"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."

Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Dunolanghe Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2*s.*, 3*s.* 6*d.*, 6*s.*, and 10*s.* each.

It is most economically applied with a Vaporiser, price 2*s.*

Prepared by Alfred Lowe, Chemist, Chesterfield.

Agents:—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Dick Radclyffe & Co., 128, High Holborn, W.C.; W. Cutbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co.; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair; Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Baimoral; Dorking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, E. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, T. Jackson & Son; Beverley, G. Swailes; Wavertree, J. Dewar & Co.; Newcastle-on-Tyne, J. Thompson; Worksop, T. Marris.

Agents wanted in every district.

HARBERS' WORCESTER FUMIGATOR,



Acknowledged to be the most efficient and economical Fumigator yet introduced, and cannot fail to give great satisfaction. It is self-acting, and may be used by placing the funnel through an aperture of the house. It has been tested by the principal Gardeners in this neighbourhood, and all have pronounced it a great success.

REGISTERED MAY 20, 1878. Price 10*s.* 6*d.*, 12*s.* 6*d.*, and 15*s.* each; larger sizes made to order. Terms cash.

List of Testimonials may be had on application.

CHARLES HARBER, 15, Boughton Street, St. John's, Worcester.

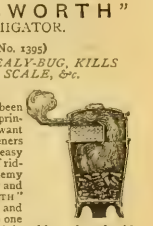
THE "CHATSWORTH" VAPORISING FUMIGATOR.

(J. S. Ellis' Patent, No. 1395)

KILLS THRIPS, KILLS MEALY-BUG, KILLS RED-SPIDER, KILLS SCALE, &c.

Price 37s. 6d.





This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective mode of ridding them of that enemy to Cultivation, *Filth*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation; *for it is self-acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Fronds or Flowers.*

Testimonial from Mr. Speed.

Gardener to His Grace the Duke of Devonshire, Chatsworth.

"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Squibs, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug, and most Scale, is a thing to be remembered.

"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being vaporised before passing into the house make it quite safe to be left until the combustion is finished.

"THOMAS SPEED,

"The Gardens, Chatsworth, October 9, 1877.

"Mr. Ellis, Norfolk Foundry, Sheffield."

Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

GRANITIC PAINT, for Greenhouses and for all Decorative or General Purposes where durability and beauty are desired.

SILICATE ZOPISSA COMPOSITION, all Colours, for Damp Walls, Preserving Stone, &c., either internal or external.

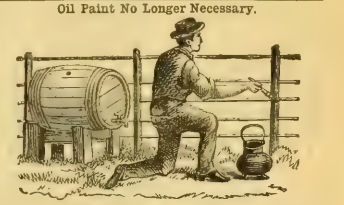
COLOURLESS LIQUID SILICATE ZOPISSA for Damp Walls, Preserving Stone, Brick, or Cement, all washable and durable.

To be had genuine only from the Original Inventors and Sole Manufacturers,

The Silicate Zopissa Composition and Granitic Paint Company, 45, Fish Street Hill, London, E.C.

(Established over fifteen years.)

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.

"*The Ryleys, Alderley Edge, Manchester.*—Messrs. Hill & Smith.—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted. —Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

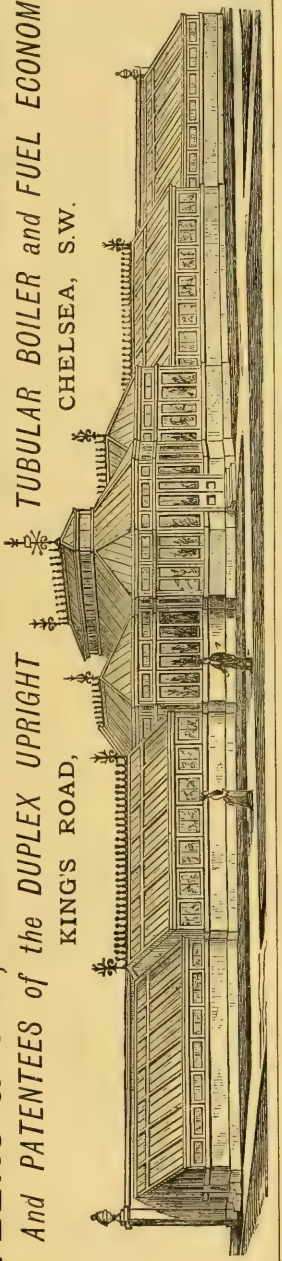
CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

EXCELLENCE IN DESIGN AND WORKMANSHIP.

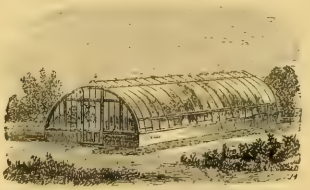
J. WEEKS & CO., HORTICULTURAL BUILDERS. HOT-WATER APPARATUS MANUFACTURERS,

And PATENTEES of the DUPLEX UPRIGHT TUBULAR BOILER and FUEL ECONOMISER,

KING'S ROAD, CHELSEA, S.W.



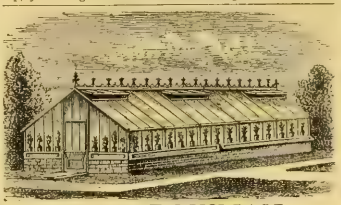
IRON ROOFS for SALE, Cheap.—Several Iron-framed Roofs, from 20 feet to 40 feet span (not curved, no skilled labour required in fixing), covered with galvanised corrugated Iron. Apply HEMMING AND CO., 47, Moorgate Street, London, E.C.



LASCELLES' PATENT BENT WOOD CONSERVATORIES and GREENHOUSES. — All Gardeners know that Wood is better than Iron for Plant Growing, and by the above system a handsome curved house can be erected as cheaply as a plain straight one.

The curved house is more durable, stronger, lighter in construction, and no bent glass is required.

W. H. LASCELLES, 121, Bunhill Row, London, E.C., will supply Drawings and Estimates free of charge.



JOHN BOWMAN,

Timber and Mahogany Importer and Merchant,

HORTICULTURAL BUILDER,

WEST END STEAM JOINERY,

NEWCASTLE-ON-TYNE.

GREENHOUSES complete, from £10 to £1000.

PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. .. } 35s.

PORTABLE BOX with TWO LIGHTS, as above, each Light 6 feet by 4 feet .. .. } 65s.

Estimates given for Conservatories and Greenhouses of every kind.

Well-seasoned Materials and First-class Workmanship guaranteed.

Greenhouses.

HEREMAN AND SONS, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 42 feet long, 13 feet wide, £50; 21 feet by 13 feet, £28; 12½ feet by 10 feet, £15. Estimates given in wood or iron.

Glasshouses.

HEREMAN AND MORTON give prices for all kinds of HORTICULTURAL BUILDINGS in WOOD On receipt of particulars. Also for Heating.

A Pamphlet 3d. Price List's free.

2, Gloucester Street, Regent's Park, London, N.W.

Two Gold Medals, Preston, 1878.

Royal Horticultural Society's Grand Provincial Show.

R. HALLIDAY & CO.

Beg to announce they have been awarded the ONLY GOLD MEDAL for Horticultural Buildings, and the ONLY GOLD MEDAL for Boilers, Valves, and Heating Apparatus, &c., in competition with several of the oldest firms in the trade.

The following BUILDINGS, which obtained the GOLD MEDAL, are for SALE, and will be delivered, Fixed, Glazed, and Painted, in any part of England, at the Prices enumerated below:—

TWO SPAN-ROOF HOUSES, each 25 feet long by 18 feet wide folding doors at one end, and finials and ornamental cresting along top: each £80.

ONE LEAN-TO ROOF HOUSE, 25 feet long by 15 feet wide, with door at each end, newly designed, wrought iron and wood combined, very strong, light, and durable, would make excellent vinery: £70.

ONE HALF SPAN ROOF HOUSE, 25 feet long by 12 feet wide, with door at each end, and ornamental finials and cresting along top: £50.

ONE LEAN-TO ROOF HOUSE, 20 feet long by 12 feet wide, door at each end: £42 10s.

These Buildings, it need scarcely be observed, are finished in the very best manner, and made of the best red Petersburg deal, glazed with 21 oz. English sheet glass, and have been painted four coats, and would be painted another coat after fixing. The front and roof sashes are fitted with our improved simultaneous opening machinery, and the doors with best brass bolt mortice locks and furniture.

N.B.—The above will be on Sale till first week in August, after which they will be taken to pieces and re-used in other work.

R. HALLIDAY & CO., Horticultural Builders and Hot Water Engineers, Middleton, Manchester; and 22, Barton Arcade, Manchester.

STRAWBERRIES.

MESSRS. JAMES VEITCH & SONS

Beg to announce that their DESCRIPTIVE PRICED LIST of the above is now ready, and will be sent free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

THE THAMES BANK IRON COMPANY



OLD BARGE WHARF,

UPPER GROUND STREET,

LONDON, S.E.,

Have the largest and most complete stock in the Trade; upwards of £20,000 worth to choose from.



HOT-WATER BOILERS, PIPES, and CONNECTIONS,

And all CASTINGS for HORTICULTURAL PURPOSES.

Their New Illustrated Catalogue, 8th Edition, now ready

(*price Sixpence*).

Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

SUTTON'S

SUPERB STRAINS OF

FLORISTS' FLOWERS,

POST FREE.

The FINEST STRAIN of CALCEOLARIA.



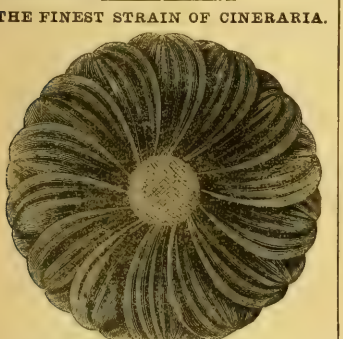
SUTTON'S "PERFECTION."

After many years' careful selection we have succeeded in producing a strain of Calceolaria which for beauty and form of flower, richness of colour, and habit of plant, is acknowledged to be far superior to any yet in cultivation. Our houses have been visited during the blooming season by some of the most eminent authorities of the day, all of whom agree in pronouncing our Improved Strain to be of unusual excellence.

Price 5*s.* and 2*s.* 6*d.* per packet, post free.

SUTTON'S SUPERB CALCEOLARIA } 2*s.* 6*d.* per packet,
JAMES'S INTERNATIONAL PRIZE } post-free.

THE FINEST STRAIN OF CINERARIA.



SUTTON'S SUPERB CINERARIA.

This will be found unequalled by any in cultivation, the seed having been saved from the finest named varieties only.

Price 5*s.* and 2*s.* 6*d.* per packet, post-free.

THE FINEST STRAIN OF PRIMULA.



SUTTON'S SUPERB PRIMULA.

This choice stock has been carefully selected from the largest fringed flowers of good colour. Habit robust, with bloom thrown well above the foliage.

Red, white, or mixed, 5*s.* and 2*s.* 6*d.* per packet, post-free.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

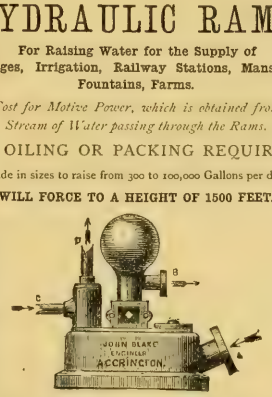
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on August 3.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wineham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From JOHN BARNES, Esq., *Contractor, Chatburn and Hellifield Railway, Contractor's Office, March*, 1877.

"Dear Sir,—I have the pleasure to inform you that the three Hydraulic Rams you erected for me on this contract about two years ago, have continued to work very satisfactorily, without requiring any repairing. With a fall of 5 feet sufficient water has been raised daily by each ram to supply two of my locomotive engines: they have fully answered my expectations and all that has been said of them."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From Mr. THOMAS MASON, *Alkincoates Hall, Colne, September* 30, 1871.

"Sir,—Your self-acting Hydraulic Ram gives me entire satisfaction; it has been at work about fifteen months, and has only been seen once during the last six months; it is forcing about 1400 gallons per day of twenty-four hours to a height of 194 feet."

From JOHN PENNINGTON, Esq., *Emmott Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.



SATURDAY, JULY 20, 1878.

AMERICAN NOTES.

IN passing northward through the richly cultivated districts of the North-eastern States, large portions of which bear the mellowed aspect of long settlement, the new-comer cannot help noticing the transitional aspect of Canada, passing from primæval Nature to the dominion of the plough. Every gradation occurs; here the continuous miles of orchards and well-cultivated fields, interspersed with square blocks of forest, and again the forest broken into by separate areas of culture, but nowhere is the old horizon of the native forest-shroud lost, and the eye cannot fail to detect the remnants of the great sea of deciduous trees which to the early settlers must have appeared an almost impenetrable barrier. Passing for hours and days through interlacing alternation of forest and culture, the mind becomes bewildered between the extent and monotonous uniformity of the forest, and the huge gaps man has made in it within a few years: here are separate blocks of forest preserved amongst the arable land as precious remnants to be cared for and maintained, and again the forest appears as a continuous barrier for destruction, oppressive to the labours of the new settler. It is wonderful to observe the extent of the clearance that has been made within four or five generations, and the establishment of prosperous cities hundreds of miles within the great sea of trees. From a bird's-eye view it is as even as a rich hay-field partly mown, here and there only broken by Pines and a few other taller trees standing up like weeds above the general level of verdure.

Goat Island, the scene of my first botanical ramble, situated in the midst of the Niagara River between the American and Canadian shores, just above and dividing the Falls, is reached by a small suspension bridge from the American side, and I entered at once through cool glades into a slice of the forest hemmed in by the mighty force of rushing water. Though monotonous in aspect and uniform in habit, the great variety of deciduous trees, intermixed with Hemlock Spruce, at once strikes the visitor from the Old World. These I shall enumerate later on.

Nothing can be more charming than the aspect of the island, unchanged from Nature except by the presence of a road cleared round its circumference, and a few paths cut through the wood. The pleasant island exists only on sufferance, a threatened barrier to the mighty force of the stream eating into its edge and bending over the fringing trees, here dead and stranded on the shore, and again undermined, and bowing towards the irresistible torrent. At a few paces from the shore the idea of an island is lost save in the pleasant sound of the tumult of waters. The trees are so thick that all outside is buried from sight, and you are in the midst of a labyrinth of straight stems supporting a bright canopy of leaves and prostrate trunks in every stage of decay, crossed and mingled with the rich tangled carpet of the lesser vegetation. The prevalent plant is Erythronium americanum, or Yellow Dog's-tooth Violets, which occurs in the greatest profusion here and in every wood I visited in Canada. The bulbs multiply by long stoloniferous shoots, and only a very small proportion produce flower. Bulbous plants are rare in Eastern [illegible] they will

and the only other species I noticed on Goat Island was Allium tricoccum, with tufts of Garlic-like leaves succeeded by the flowering scape. In more exposed places and on overhanging rocks Aquilegia canadensis was abundant and ornamental. The white and purplish forms of Trillium erectum were conspicuous and in full beauty, intermixed with the May Apple, Podophyllum peltatum, which occurs in the greatest profusion throughout the Northern States and Canada, forming sheets of pleasant green foliage in the open glades of the forest.

As a New World genus the occurrence of a single species, Podophyllum Emodi, in the Himalayas, is a remarkable case of geographical isolation. Its ally, Jeffersonia diphylla, also occurs on Goat Island intermixed with many strong-growing herbaceous plants, including Thalictrum dioicum, Smilacina racemosa, and S. stellata, a Convallaria, and Maianthemum bifolium, also Uvularia grandiflora, a large herbaceous Aralia, and the pretty little ground-nut, Aralia trifolia. Arisarum triphyllum, the common Arum of Canada and the States, was also abundant, together with Claytonia virginica, a Galium, a small Anemone, several species of Aster and Solidago not yet in flower, and a number of Ferns, including an abundance of the graceful Adiantum pedatum, and Botrychium virginicum, an elegant species with a large finely divided deltoid frond. Of Violas, upwards of thirty species occur in the States and Canada, some of which are common to Europe and North America. Goat Island afforded five or six species, the most conspicuous of which were Viola canadensis and V. pubescens, often half a yard high, the former having white and the latter yellow flowers. Dicentra cucullaria, closely allied to Corydalis and Dielytra, was conspicuous from the ornamental tufts of finely-cut glaucous foliage. It is distinguishable from the Squirrel-corn, D. canadensis in having pale scaly tubers, those of D. canadensis being of a bright golden-yellow colour. Altogether the herbaceous flora was wonderfully rich and varied for so small an area.

The Rapids above the Falls impressed me as the most sublime feature of Niagara. Above Goat Island the river is about a mile wide, and the water approaches you from a sky horizon, its source invisible, down a regular incline a mile and a half in length. From its great scale it is almost featureless in its monotony, but viewed piecemeal most striking in detail, hundreds of yards of rushing foam interlaced with strips of stiller water, often raised up as eddying platforms above the general level, and interspersed with hissing, squirting fountains forced over stranded "snags" and projecting rocks; and then the great leaps of 160 feet into the comparatively narrow gorge, of a million and a half tons of water every minute! amidst a cloud of misty spray 200 feet high, bearing a splendid rainbow. Here the contrast of a sullen, rolling flow for 3 miles, slower and stiller in its narrow channel than the wide foaming sheet above, tells of its great depth; and again at the "Whirlpool Rapids" it reasserts its force and bulk and life, and the vast mass of water rushes down furiously and tumultuously to the level of Lake Ontario.

From Niagara to London in Upper Canada the railway sides afforded a few fresh species, Geranium maculatum and Phlox divaricata were especially abundant and ornamental, and here and there I noticed Cypripedium pubescens, and Sanguisorba canadensis. The rich rank leafage of the undergrowth of the woods was especially remarkable, and made up for the most part with the fleshy leaves of the Skunk Cabbage, Symplocarpus fœtidus, and the May Apple, Podophyllum peltatum, intermixed with white and purple Trilliums; and in the wet Nuphar advena, with its curious upright ding erect out of the water, formed dense masses of glossy foliage intermixed with Ferns, including three species of Osmunda, O. cinnamomea, O. Claytoniana, a small delicate form of O. regalis, Onoclea sensibilis, Lastrea Thelypteris, and Polypodium Phegopteris. Polystichum acrostichoides, Cystopteris bulbifera, and Adiantum pedatum were also abundant. Canadian scenery unfolded itself in the alternation of square forest blocks with broken ground separated by the traditional "snake fences"—mere split poles 11 or 12 feet long, piled up zigzag in alternate layers, or by the still more weird-looking root fences, consisting of grubbed-up stumps ranged in a row—cheap and hasty methods of forming a boundary where timber is almost a drug, and the loss of a wide strip of ground unimportant. "Posts and rails" are seldom seen, partly from the labour involved in fixing, and also from the difficulty of keeping any fixed fence in position where the frost penetrates 2 or 3 feet into the ground and lifts everything. Hoarding fences often have to be added to from the bottom, to make up the gaps caused by the successive liftings of the long frosts.

For this reason the want of finish and neatness in the roads and fences, so apparent everywhere in Canada, is unavoidable; the depth to which the frost penetrates displaces all within its reach, and the best made roads, as well as the stone paved streets and causeways of the towns are rotten and uneven. *George Maw, F.L.S., Benthall Hall, near Broseley.*

(*To be continued.*)

New Garden Plants.

CYMBIDIUM PARISHII, *Rchb. f.**

To have this plant in flower was one of the most ardent of Orchidic wishes. Who knows whether it did not begin to be regarded as a myth in English Orchidic circles, where one is told so many surprising things—especially in Mr. Stevens' rooms behind, or rather perhaps before the scene. I expected to have had the flowers from my second eldest and invaluable English correspondent, who has given me much information, Mr. John Day. I have been surprised by getting a flower from Mr. William Swan, Orchid grower to Mr. W. Leech, Oakley, Fallowfield, Manchester. Mr. Swan writes:—"The plant in question is growing very vigorously along with the Cattleyas; has thrown up two spikes; each bears two of its splendid blooms. I saw a plant in bud in Mr. Day's collection last Wednesday [letter of June 25]. Mr. Leech's has been open just a week." There it is, and at last it flowers at two different places in England. [Mr. B. S. Williams also has it in flower. EDS.] It quite fulfils what Mrs. E. Parish's accomplished figure had promised. The flowers, indeed, are smaller than those of the varieties of Cymbidium eburneum, Lindl. itself, but they are far more gay in colour. The sepals and petals are of same ivory-white. The lip has an orange middle zone and an orange disk to the anterior lobe, both painted with purplish brown spots. The side lobes of the lip have numerous spots of a most lively purplish violet, which gives the chief charm to the flower. The back side of the column is white, the edges are yellow, and the front side is yellow, with some brownish purplish spots on the foot. So much for the general aspect—that must be very lovely.

It is very distinct from Cymbidium eburneum, Lindl., by the caudicula, which is not blunt-angled on each side, but furnished with a spreading long bristle as in Scuticaria Steelii. The whole of the flower is shorter. The callus goes much nearer the base of the middle lobe, and it is only furnished with velvet borders and angles outside, having no middle velvet line.

There are at hand representations drawn by Mrs. E. Parish, kindly given me by the Rev. C. Parish. I have also memoranda from this gentleman about the plant, which are highly interesting. I hope not to offend my excellent correspondent by publishing some of his remarks:—"This was one of my earliest discoveries, having been found by me during my first long journey in the distant jungles in 1859. On the same occasion I discovered Dendrobium crassinode and several other good things, but I was so bewildered then at the number of novelties of all kinds, that I did not know what to choose, as I could not carry everything! A beautiful little pendulous Æschynanthus I then found, I have never since seen! I gathered a fair quantity of Cymbidium Parishii (what I then called C. eburneum var.) and of D. crassinode; I sent them, with many other valuable things, to Mr. Low, the father, with one box meant for Kew, but all (six large cases full!) were sunk in the Ganges. It was a cruel disappointment, as it was my first collection—a most valuable one; many of the plants I have never met with again. The single plants kept by me to grow died. Hence I lost sight of these two plants for many years, and but for my drawings made at the time, and the short descriptions sent to Sir W. Hooker, perhaps, another would have had the credit of their first discovery. Of all the business celebrities Dendrobium Bensoniæ is nearly the only Orchid I have never gathered." *H. G. Rchb. f.*

—— It has long been the desire of many having a collection of Orchids under their charge to succeed in flowering the new and rare, and at the same time most chaste and beautiful, Cymbidium Parishii. It is perhaps pardonable when I saw the small paragraph on p. 51 of your paper that I should feel somewhat surprised. I can easily believe that it was imagined to be the first plant that had bloomed, but since I have flowered it this season with two spikes, each bringing a couple of flowers, and the blossoms open on June 18, I think I may fairly claim to have earned that distinction; that is, of course, unless a still prior claimant should appear on the scene. I sent a bloom to Professor Reichenbach, whose letter in reply I enclose. I am not desirous of adding to his remarks, but at the same time I may say that it is a most beautiful thing, fully answering to the description I had with it; and that it succeeds well in the Cattleya-house, giving it in the growing season very copious supplies of water. Cypripedium Parishii is now in fine form with me. A mass has thrown up seven strong spikes, five bringing six blooms, one seven, and the remaining one five, in all forty-two perfect blooms, all now full and fresh. We have also four plants of Oncidium macranthum in bloom; the spikes I have tied round four sticks in the separate pots as they increased in length, and on the short laterals the blooms are now very gay. We have them now with sixteen, seventeen, nineteen, and twenty-three blooms; a most attractive and pleasing sight. Dendrobium crystallinum has been in flower for ten weeks, and is still fresh. *W. Swan.*

ODONTOGLOSSUM EDWARDI, *n. sp.**

This is a very curious Odontoglossum, loaded on a very great inflorescence with hundreds of flowers, which are, according to a memorandum, violet with yellow lip. Those flowers, indeed, are not large, since they equal those of Odontoglossum prasinum, densiflorum, and such species; yet the mass is said to make a very good and novel impression, which may easily be believed. There was till now no species of this affinity with such square wings to the column, or with sepals exasperated by small warts outside. It is one of the Ecuadorian discoveries of Mr. Edward Klaboch, the elder of those two energetic collectors, whose name it bears. *H. G. Rchb. f.*

RENANTHERA HISTRIONICA, *n. sp.*†

A very interesting novelty. It is the first Renanthera with acuminate leaves as they occur in Cleisostoma and Sarcanthus. The inflorescence is a short few-flowered raceme. The flowers have beautifully yellow sepals and petals bordered with purplish blotches. The lip is white with an orange spur and purplish blotches on the side laciniæ. Column lively yellow, with purplish streaks and blotches. Flowers equal to those of a Saccolabium miniatum, but set on at some distance apart. Origin, Stevens' Rooms, if it is English. It may come from Singapore or Malacca. I have to thank for this surprise my invaluable English correspondent, Mr. J. Day, who so often gives me useful information. *H. G. Rchb. f.*

* *Cymbidium Parishii, Rchb. f.*, in *Trans. Linn. Soc* xxx., p. 144.—Juxta Cymbidium eburneum, Lindl. Foliis ligulato-linearibus acutis, pedunculo bi-trifloro, vaginis scariosis lanceolato-falcatis acuminatis; floribus magnis; sepalis oblongo-ligulatis acutis; labello a basi angusta flabellato dilatato antice trifido; laciniis lateralibus oblongis acutis antrorsis, lacinia antica submaculari undulata, disco sericea; callo in disco prope basin laciniæ medium utrinque sericeo antice transverse abrupto. —Flos eboraceo-albus; labelli linea media lata ac discus laciniæ anticæ aurantiaci maculis quibusdam purpureo-rubris; maculæ pulcherrimæ violaceæ in laciniis labelli lateralibus. Columna antice flavida maculis quibusdam in basi purpureo-brunneis: caudicula antice utrinque processu setaceo extrorso uti in Scuticaria Steelii.—Surmah. Rev. C. Parish. 1869. *H. G. Rchb. f.*

* *Odontoglossum Edwardi*, n. sp.—(Myanthium) panicula amplissima thyrsoidea myriantha, ramis ramulisque fractiflexis; bracteis trianguliis conspicuis ovariis pedicellatis multoties brevioribus; sepalis breve unguiculatis ovatis obtusis extus asperis; tepalis subæqualibus apiculatis brevibus; labello obtuse rhombeo genuflexo; callo cuneato oblongo emarginato a basi in medium; papulis geminis obtusatis intus antice interjecta carinula; columna trigona retusa, antice utrinque basi alata, alis juxta foveam quadratis.—Ecuador. Edward Klaboch. *H. G. Rchb. f.*

† *Renanthera histrionica*, n. sp.—Humilis; foliis lanceis acuminatis; pedunculo pauciflore; racemoso laxo; sepalis tepalisque cuneato ligulatis obtuse acutis; labelli trifidi laciniis lateralibus trianguliis; lacinia media ligulata acuta; lamellis geminis incumbentibus nunc trianguliis nunc quadratis in basi hujus laciniæ calcari conico brevisculo.—Flores xanthini purpureo-maculati ac marginati maculis parvis. Labellum album laciniis lateralibus purpureo-maculatis. Calcar aurantiacum. Columna flava purpureo-picta. Ex horto Dayano. *H. G. Rchb. f.*

THE ISLAND OF CYPRUS.

WHETHER for good or ill the Government has taken possession of the island of Cyprus, and as the conditions upon which it is to be held are likely to continue, the possession may be regarded as a permanent one. This step naturally awakens a more lively interest in that island in this country, and therefore any trustworthy information concerning it will doubtless be welcome to many persons.

As soon as it was known that England intended to "occupy" it, the "dailies" treated their readers to more or less—in most instances less—truthful descriptions of the country, its inhabitants, productions, and resources. Some of these hastily written effusions are remarkable more for their exhibition of the biassed views of the writers than for the amount of reliable information they contain. One describes the island as a perfect paradise, the home of Venus, enjoying a most agreeable climate, and rich in Pine and Beech forests, &c. ; whilst another asserts that it is unhealthy, unbearably hot in summer and very cold in winter, and sometimes desolated by a drought of several years' duration. Another remarks, very truly, that little has been written in English concerning the island, though there is a good German account of it ; of which, however, he does not appear to have understood more than the title. The island has been visited by various travellers during the present century, but no one of them has made a sufficiently long stay to be able to give a very complete account of its climate and productions. Nevertheless, one may obtain a vast amount of information from Unger and Kotschy's *Die Insel Cypern* (1865), which work contains not only the results of the authors' travels and researches, but also those of previous travellers. Amongst Englishmen who have visited Cyprus we may name Clarke, Sibthorp, and Chesney ; and in 1849 the island was surveyed by H.M.S. *Volage*, and an excellent chart, accompanied by plans and views, drawn by Th. Graves. Sibthorp, the author of the magnificent *Flora Græca*, spent five weeks in Cyprus in the year 1787, and a considerable proportion of the thousand coloured folio plates of plants, drawn by that unexcelled botanical artist, Ferdinand Bauer, which illustrate the work in question, represent Cyprian plants.

Clarke spent ten days in 1801 on the island, but he was extremely active during this short period, as his narrative testifies. He gives a short list of the plants observed, and describes three newly-discovered species, and he gives his general impressions of the island in the following words :—"This island, that had so highly excited, amply gratified our curiosity by its most interesting antiquities, although there is nothing in its present state pleasing to the eye. Instead of a beautiful and fertile land, covered with groves of fruit and Pine woods, once rendering it the paradise of the Levant, there is hardly upon earth a more wretched spot than it now exhibits. Few words may forcibly describe it. Agriculture neglected—inhabitants oppressed—population destroyed—pestiferous air—contagion — poverty — indolence — desolation." With respect to this testiomy, Unger states, in the work named above, that it is unfortunately impossible for him (in 1865) to alter a single letter of it. Several French and German travellers have visited the island, including Billardière, Aucher, Olivier, and Hasselquist, but it is chiefly to Dr. Theodore Kotschy and Dr. F. Unger that we are indebted for more recent and precise information. The former made several trips in the island, and both together passed nearly seven months—May to November—on the island in 1862. As their work embodies the labours of others, it is convenient to epitomise portions of it instead of making extracts from various authors. We may add that one of our correspondents has proceeded to Cyprus, and from him we hope to receive sketches and notes on the vegetation of the island.

POSITION AND SIZE OF THE ISLAND.

Cyprus lies between 34° 33′ 30″ and 35° 41′ 18″ north latitude, and 32° 15′ 42″ and 34° 35′ 48″ east longitude from Greenwich, and with the exception of Sicily, Sardinia, and Crete, it is the largest island in the Mediterranean Sea. The south-western portion (nearly half of the area) is mountainous, the highest peak, Troodos (ancient Cyprian Olympus), rising to an altitude of 6000 feet. The north coast is also skirted by a narrow range of hills, which reaches 3000 feet in height. Between these two mountain ranges is an extensive plain drained mainly by two rivers—a large one flowing eastward, and a small one flowing westward. In the lowlands near the coast are several inexhaustible salt lakes.

GEOLOGICAL FORMATION.

The south-western mountains consist mainly of greenstone and trachyte, with tertiary chalk and marl. Here and there are beds of gypsum and isolated spots of Jura limestone and "Vienna" sandstone. The north chain is built up almost entirely of limestone, overlaid on both flanks with sandstone, and the intervening plain of post-tertiary deposits of a very complex character. Marl, sand, sandrock, and conglomerate are the principal elements. These desposits extend from the sea-coast up to 200 feet, or even 600 feet, and are spread over all the lower parts of the island, forming a not very fertile soil.

CLIMATE.

Any one thinking of going to Cyprus would regard the climatal conditions as of the first importance, hence a little more detail on this point may be desirable. There is no doubt that the summer is excessively hot, so hot as to have a paralysing effect on the pursuits of men ; on the other hand the winter is relatively cold, and often it becomes necessary to have recourse to artificial heat. Thymbra spicata and Poterium spinosum, the two commonest shrubs in the island, are frequently used to warm dwelling rooms. The change from one extreme to the other is very sudden, no spring or autumn intervening. In the midst of summer the temperature often exceeds 100° Fahr. in the shade ; and though it rarely falls so low as the freezing point in winter, the cold makes itself felt very much, because the means of protection against it are so inadequate. But the mean winter temperature is not sufficient to arrest vegetation. Indeed there is what may be termed the winter flora, which is already over at the beginning of March. Winter (October, November, and December) is the rainy season, whilst the summer is rainless with an uninterruptedly cloudless sky. Sometimes in winter rain falls during thirty to forty days in succession, and vegetation is reanimated and reinvigorated. The parching heat and continuous drought of summer, however, use up the accumulations of winter ; brooks and rivers present dry channels, and vegetation ceases. During the rainy season the Pedias, the principal river in the island, often overflows its banks, and the contiguous land owes its fertility to these periodic inundations. Nearly all traffic in the lower part of the islands is interrupted during this period. Occasionally the overflow assumes the dimensions of a flood, causing considerable damage. It is also recorded that no rain fell on the island during thirty-six years, in the reign of Constantine, consequently most of the inhabitants were obliged to leave the country. During the whole time (March to November) Unger and Kotschy were in Cyprus there was scarcely any rain. The harvest is over in May, after which there is nothing but the depressing stubble fields to be seen, look in what direction we may. Even Flax, the latest of the crops, is already turning yellow. Cotton is the only summer crop, and that can be grown anywhere artificial watering is possible. In June and July the formation of dew ceases, and the atmosphere becomes charged with a dense vapour, which veils objects even at short distances. Added to this the slightest winds cause clouds of penetrating dust to rise, and insects abound whose torments it is impossible to escape. The *mal aria* prevails at the sea-ports, and all who can, avoid them as much as possible during the months of July and August. It is described as a dense white fog, which spreads over the plain, and even covers the mountains with its unwholesome vapour. Day after day the fierce heat continues, and all business is done in the evening or during the night. Sunstroke is frequent amongst those who venture out during the day. The following mean temperatures (by Gaudry) were obtained from one season's observations only, and those for April and May (by Kotschy) were deduced from a small number of observations—the others from three observations daily throughout the month, namely, at 7 A.M. and 2 and 9 P.M.

Month.	Mean Temperature.	Month.	Mean Temperature.
March	62.6 Fahr	August	87.7 Fahr.
April	66.2 ,,	September ..	84.4 ,,
May	72.4 ,,	October ..	73.6 ,,
June	84.2 ,,	November ..	.. ,,
July	86.0 ,,		

It should be added that the observations were made at Larnica. In spite of all the drawbacks presented by the climate all travellers agree in calling Cyprus a lovely island.

To be continued.

LICHENS: THEIR RATE OF GROWTH.

IT will be seen from what I have already said (p. 624, *ante*) that it is impossible to claim for the larger proportion of lichens a great longevity, owing to the perishable nature of the substances on which they grow ; and further, that twenty years is more than sufficient time for the growth of certain well-known species of the genera Ramalina, Parmelia, Lecanora, Lecidea, and Verrucaria—on a very hard sandstone. These facts narrow the area of doubt, and confine us in our inquiry into the age of such species as grow on the harder rocks, such as granite, quartz, flint, &c. It is in relation to these we begin to feel our want of actual observations. If we permit ourselves to be satisfied with conjectures in place of facts we must at any rate base our conjectures on what we know. I ventured to say that if less than twenty years suffices for the growth of lichens on hard sandstone it cannot require such an incredible period as some speak of to admit of their growth on these harder rocks. The question, however, is open for discussion, and it is not well to be dogmatical.

It must be borne in mind that the age of the rock or flint can by no means be admitted as the guage by which to estimate the age of the lichen growing on it. If I find a block of granite in Llanberis Pass deposited there in the glacial age bearing Pilophoron fibula, Tuck., I am not justified in believing that lichen to be some thousands of years old any more than I should be in believing the specimen of Hymenophyllum Wilsoni on the same block to be of that age. Lichens spring up, flourish and decay like other members of the vegetable kingdom. The block on on which the perfect lichen is found presents ample evidence that many have passed their prime and fallen into decay. The antiquity of the rock does not necessitate the antiquity of the plant growing on it.

The absence of lichens from worked stones of great antiquity will not aid us in forming an opinion. Mr. W. G. Smith (p. 737, *ante*) infers from the absence of lichens on certain old buildings of worked flint in Norfolk and Suffolk dating prior to the Norman Conquest, that those lichens present on the flint flake figured by him (fig, 107) must be at old as that date. By parity of reasoning it may be contended that the absence of lichens on some of the old sandstone buildings in the neighbourhood in which I write, dating back nearly to the Conquest, proves that those lichens found elsewhere on sandstone are 600 or 700 years old ! The truth is, the plants under consideration are governed in their choice of habitat by certain atmospheric and other conditions which are not always apparent to us, and hence their choice may at times appear whimsical. A striking illustration of this was afforded a few days back, when, on crossing an iron bridge in this county, I gathered several well-developed specimens of Physcia parietina (L.) on the iron of the parapet—a most unusual and unlikely place to find them. They were growing only on one side of the bridge, the parapet on the other side was examined in vain for them. We have many older iron bridges in the county on which no Lichens can be found, but here were certain conditions present which encouraged the settlement of the Lichen on this most unusual habitat. It must not be inferred from Mr. Smith's remarks that the growth of perfectly developed lichens on the chipped surface of flints is a rare occurrence. The late Mr. Borrer while residing in Sussex sent my friend the Rev. W. A. Leighton a large number of specimens on flint, and in looking over some of these in his excellent herbarium it is by no means rare to find well developed lichens on the chipped surface. There is no means of judging of their age, but given favourable atmospheric conditions I maintain that what we actually know of lichen growth justifies us in believing they may be of comparatively recent date. Mr. Smith believes "that it may take centuries for a broken flint to acquire a surface suitable for the growth of lichens," which belief is possibly correct ; but the longer it takes the more recent must be the growth of the lichen found on it. It should be remembered that lichens have not yet been proved to be true parasites—*i.e.*, living at the expense of the substance on which they grow. By the best authors they are believed to draw none of the constituents of their growth from the material on which they flourish. All they require is a foothold for their very slender hypothallus. It is true they find this foothold on softer rock more readily than on harder ones, but they will

affix themselves to the polished surface of the purest quartz, and have occasionally been found on glass. Dr. Arnold has enumerated (*Die Lichenin des fränkischen Jura*, *Flora*, 1863) a number of lichens found by him on the Jura mountains on quartz and other hard rocks, that present as durable a surface as flint. I have before me at this moment a specimen of Lecidea geographica on a piece of pure quartz from North Wales.

These facts, however, aid us very little in finding the age of lichens, and if we are to arrive at any satisfactory solution of the question we must adopt one of two methods—either watch an individual specimen from its first appearance through the years necessary for its complete growth, or note the existence of specimens that are found growing on stone we know to have been worked at a given date. *William Phillips.*

A SYNOPSIS OF THE KNOWN FORMS OF AQUILEGIA.—II.

GROUP II. *Aquilegiæ mesanthæ.* — Sepals about 1 inch long, so that the expanded flower is about 2 inches in diameter.

* Old World Forms.

12. *A. pyrenaica*, D.C. Fl. France, vol. v., p. 640; Floral Magazine, 1867, tab. 322, not of Koch nor Reichenbach.—Habit dwarf, the slender, finely pubescent stem being often only a few inches long and 1-headed, at most only a foot long and 2—3 headed. Petiolules of the leaves ½—1 inch long, bearing three sessile or nearly sessile divisions, ½—¾ inch long, with broad, round, close, ultimate lobes; texture moderately firm; both surfaces glabrous, the upper one green, the lower a little glaucous. Stem-leaves small and little compound. Sepals bright lilac-blue, ovate, unguiculate, about 1 inch long, ½—¾ inch broad. Lamina of petal obovate cuneate, about half as long as the sepal, rounded at the top, about as broad as long; spur slender, nearly straight or rather incurved, ⅜—½ inch long, scarcely knobbed at the end. Head of stamens at most as long as the lamina of the petals. Follicles pubescent, ½ inch long; style about half as long as the follicle.

Confined to the Pyrenees, where it is frequent throughout the whole chain from Mount Louis to Eaux Bonnes in the alpine region, to the exclusion of true A. alpina. There is a good figure of the true plant in the *Floral Magazine*, as above cited, from specimens grown at York by Messrs. Backhouse.

13. *A. Bertolonii*, Schott, in Verh. Zool. Bot. Ver. Wien, 1853, p. 127; *A. Reuteri*, Boiss. Diagn., ser. 2, part 1, p. 10 (1854); *A. pyrenaica*, Reich. Ic. Fl. Germ., tab. 4732, non D.C.; *A. pyrenaica* var. *decipiens*, Gren. Fl. France, vol. i., p. 45.—Stems slender, finely pubescent from the base upwards, at most 1 foot or 1½ foot long, 2 -3-flowered. Petiolules ½—1¼ inch long, bearing three sessile segments ½—¾ inch long, which are glabrous, moderately firm in texture, rather glaucous beneath, with short broad ultimate lobes. Stem-leaves small and little compound, with linear segments. Flowers bright lilac. Sepals oblong, about 1 inch long, not so broad as in pyrenaica and more acute. Lamina of the petals half as long as the sepals, ⅛ inch broad, rounded at the top; spur as long as the lamina, decidedly incurved. Head of stamens as long as the lamina of the petals. Follicles as in A. pyrenaica.

Alpine region of the mountains of the east of France and north of Italy. Barely distinguishable from A. pyrenaica, from which it only differs by its narrower and more acute sepals and shorter decidedly hooked petal-spur. Most of the specimens I have seen are from the Col de Tende. The Austrian *A. Kitaibelii*, Schott, in Verh. Zool. Bot. Wien, 1853, p. 127 (*A. viscosa*, Waldst. and Kit., tab. 169), judging from the figure, is a distinct form, midway between Bertolonii and Einseleana, but I have not seen any specimens.

14. *A. glauca*, Lindl., in Bot. Reg., 1846, tab. 46.—Less robust than A. vulgaris. Stems in the wild state at most 3—4-flowered, 1—1½ foot long, glaucous, glabrous in the lower part, finely pubescent upwards. Primary petiolules reaching a length of 1—1½ inch, bearing three distinctly-stalked segments, with broad shallow ultimate lobes; texture thin; both surfaces glabrous, very glaucous. Stem bearing 1—2-petioled biternate leaves. Flowers fragrant, white, tinted claret. Sepals about 1 inch long, not reflexing, ovate, sub-obtuse, ½ inch broad. Lamina of the petals cuneate, truncate, ⅜—½ inch long and nearly as broad; spur straight or a little curved, moderately short, ¼—½ inch long. Head of stamens as long as the lamina of the petals. Follicles pubescent, ¾ inch long; style recurved, nearly as long as the follicle.

A native of the temperate region of the Western Himalayas; introduced into cultivation by the East India Company in 1846. *A. nivalis*, Falconer MSS., is a fine dwarf one-flowered alpine variety of this, with pale blue sepals and dark lilac-blue petal-lamina, from Kashmir and Balti, at an elevation of 10,000—11,000 feet above sea level.

15. *A. Moorcroftiana*, Wall. Cat., No. 4713; D. Don, in Royle, Ill., p. 55; A. kanaoriensis, Jacquem.; Cambess. in Jacquem. Voy. Bot., p. 7, tab. 5; Hook. in Bot. Mag., tab. 4693.—Habit of growth about as robust as in A. vulgaris. Stems reaching a length of 1½—2 feet, many-flowered, finely pubescent from the base upwards. Petiolules of the root-leaves 1—2 inches long, bearing three or rarely five distinctly stalked divisions, the ultimate lobes about as broad and shallow as in A. vulgaris; texture moderately firm; both surfaces glabrous, very glaucous. Stem bearing 2—3 petioled biternate leaves. Flowers white, with a lilac tint. Sepals reflexing, oblong, or lanceolate, acute or subobtuse, about ¾ inch long, not more than half as broad. Petal-lamina cuneate, nearly as long as the sepal, ⅛ inch broad, rather rounded at the tip; spur nearly straight, slender, as long as the lamina, little knobbed at the tip. Head of stamens about as long as the petal-lamina. Follicles pubescent, contiguous, ⅝—¾ inch long; style ⅝ inch.

Temperate region of the Western Himalayas; Kunawar, Ladak, Janskar, &c., at an elevation above sea level of from 10,000—14,000 feet. This was introduced into English gardens in 1852, and figured in the *Botanical Magazine*, but I have not seen it of late years.

16. *A. Amaliæ*, Held. in Boiss. Diagn., ser. 2, part 1, p. 11; Boiss. Fl. Orient., vol. i., p. 71.—Habit of growth not quite so robust as in A. vulgaris. Stems bearing several flowers, finely pubescent from the base upwards. Primary petiolules 1—1½ inch long, pubescent, as are the petioles, bearing three sessile segments, with rather deeper and narrower ultimate lobes than in A. vulgaris; texture thin; both surfaces glabrous, the lower rather glaucous. Stem with 2—3 petioled biternate leaves. Sepals oblong-lanceolate, whitish or lilac-tinted, ½—⅞ inch long. Petal-lamina ½—⅝ inch long, rounded at the top, pale-coloured, about half as broad as long; spur rather shorter than the lamina, moderately stout, more or less incurved, not much thickened at the tip. Head of stamens not protruded beyond the lamina of the petals. Follicles pubescent, about ½ inch long; styles half as long as the follicle.

Alpine region of the Thessalian Olympus, at an elevation of from 5000—8500 feet above sea level. The other alleged Greek species, A. Othonis, Orph., Boiss. Fl. Orient., vol. i., p. 71, from Parnassus and Mount Chelmos in the Peloponnesus, comes so near to A. Amaliæ that I cannot venture to attempt to separate it from dried specimens alone. Amaliæ runs vulgaris very close, differing by its narrower rather deeper ultimate leaf-lobes, narrower sepals, more slender, less curved petal-spur and smaller follicles. An allied or identical form has just been discovered by Mr. Groves in South Italy, on Mount Magella, in the Abruzzi. Judging from the description, *A. nevadensis*, Boiss. and Reut., in Cat. Hort. Genev. 1854, from the alpine region of the Spanish Sierra Nevada, comes very near to A. Amaliæ.

17. *A. leptoceras*, Fisch. and Meyer, Ind. Sem. Hort. Petrop, No. 4, p. 33 (1837); Turcz. Fl. Baic., vol. i., p. 68; Ledeb. Fl. Ross, vol. i., p. 57; *A. brachyceras*, Turcz.; Maund. in Bot. Gard., No. 755, with a small coloured plate.—Stature of *A. canadensis*. Stems several-flowered, nearly glabrous throughout. Petiolules 1—1½ inch long, bearing three sessile divisions with deeper narrower teeth than in *A. vulgaris*, thin in texture, glabrous and green on both surfaces. Stem bearing 2—3-petioled, biternate leaves. Sepals oblong, subacute, ¾ inch long, half as broad, bright lilac-blue. Lamina of the petal half as long as the sepal, tipped with yellow, rounded at the apex; spur slender, slightly curved, half as long again as the lamina, not knobbed at the apex. Head of stamens protruded a little beyond the lamina of the petals. Follicles slender, glabrous, nearly 1 inch long; style ½ inch.

A native of Eastern Siberia. A little known plant, receding from A. vulgaris in the direction of A. canadensis in the cutting of the leaves and longer less incurved petal spur. It was cultivated in the Botanic Garden of Birmingham in 1838, but I have not seen living specimens.

18. *A. vulgaris*, Linn. Sp., p. 752; D.C. Prod., vol. i., p. 50; Reich. Ic. Fl. Germ., tab. 4279; Fl. Dan., t. 695; Engl. Bot., tab. 297, 4 edit. tab. 15.—Stems 1½—2 feet long, many-flowered, finely pubescent from the base upwards, or glabrous in the lower part. Petiolules of fully-developed leaves 1½—2 inches long, bearing three distinctly-stalked divisions, of which the end one under cultivation is often 1½—2 inches broad, the ultimate lobes shallow and roundish, the upper surface slightly glaucous and the lower more so, the texture as firm as in any species of the genus. Lower stem-leaves petioled and biternate. Flowers bright lilac-blue or light or dark purple (A. nigricans, Baumg.), rarely white (A. nivea, Baumg.). Sepals ovate, unguiculate, acute, about 1 inch long, and half as broad. Lamina of the petal ⅝—¾ inch long, rounded at the apex, about half as broad as long; spur much incurved, stout, distinctly knobbed at the end, as long as the lamina. Head of stamens equalling the length of the lamina of the petals. Follicles densely pubescent, 1 inch long; style half as long as the follicle.

Spread throughout nearly the whole of Europe and extending into Siberia. Excluding mere colour-forms and garden monstrosities the following are its principal named varieties:—

1. Var. *platysepala*, Reich. Ic. Fl. Germ., tab. 4730.—Sepals shorter and more obtuse than in the type.

2. *A. atrata*, Koch, in Flora, 1830, part 1, p. 118; *A. nigricans*, Reich. Ic. Fl. Germ., tab. 4731.—Flowers smaller than in the type, always dark purple. Head of stamens protruded a little beyond the lamina of the petals. Central Europe.

3. *A. Sternbergii*, Reich. Ic. Fl. Germ., tab. 4733; A. Hænkeana, Koch, Synop., p. 23.—A dwarf alpine form, with smaller leaf-divisions than in the type, and not more than 2—3 bright lilac-purple flowers, which are half as large again as in the type. Central Europe.

4. *A. transsilvanica*, Schur, Fl. Transyl., p. 29.—Like Sternbergii, but the whole plant, except the peduncles, glabrous, and ovate-oblong bright blue sepals, obtuse and emarginate. Transylvanian Alps, at 6000—7000 feet.

5. *A. subalpina*, Boreau, Fl. du Centre, vol. ii., p. 24.—Stature and leaves of typical *vulgaris*, but flowers as in *Sternbergii*. Pyrenees and mountains of Central France.

6. *A. Bernardi*, Grenier, Fl. France, vol. i., p. 45.—Tall; 3—7-flowered; slender spur of the petal not more than half as long as its lamina; head of stamens much shorter than the lamina of the petal. Corsica, on Monte Rotondo.

7. *A. paraplesia*, Schur, Fl. Transyl., p. 29.—Flowers large, dark violet. Lamina of the petals about as long as the sepals; spur not more than half as long as the lamina. Alps of Transylvania, 6000 feet.

8. *A. hybrida*, Sims, in Bot. Mag., t. 1221.—Sepals oblong-lanceolate, lilac-purple, under 1 inch long. Petal-lamina white, truncate-emarginate, not more than half as long as the sepal; spur quite as long as the sepals, stout, lilac-purple, hardly at all incurved, knobbed at the end. A garden form raised by Messrs. Whitley & Brame, Old Brompton, in 1809. Probably a hybrid production.

9. *A. olympica*, Boiss. Fl. Orient, vol. i., p. 71; A. vulgaris, var. caucasica, Led. Fl. Ross, vol. i., p. 56; A. Witmanniana, Hort.—A very fine variety, with several large light claret or bright lilac-purple flowers, the latter with a white petal-lamina. Sepals ovate, acute, 1—1¼ inch long, more than half as broad. Petal-lamina not more than half as long as the sepals; spur curved, at most as long as the lamina. Caucasus and mountains of Armenia, and North Persia. *A. blanda*, Lemaire, in Ill. Hort., t. 146, is either identical with this or very near it.

10. *A. Karelini*, Baker.—Stature of A. vulgaris—Stems pubescent throughout. Leaves more membranous in texture, with narrower, deeper ultimate lobes. Flowers of typical vulgaris, bright lilac or claret-purple. Alatau mountains. Distributed by Karelin and Kirilow as doubtful A. Sternbergii.

The Chilian plant gathered by Lechler, named *A. glaucophylla* by Steudel in the Regensburg Flora for 1856, p. 407, is merely introduced *A. vulgaris*. *J. G. Baker.*

ABUTILON ROSÆFLORUM.

SINCE the introduction of the white Abutilon, called Boule de Neige, these plants have occupied a prominent position as decorative subjects of moderate bulk and stature. Bold without coarseness, exceedingly gay when in blossom, and of the easiest possible culture, they commend themselves to the decorator as plants in every way worthy of his attention, and that whether they are employed as dwarf plants for the flower-stand or window, or as larger bushier specimens for the conservatory or hall. The drooping cup-shaped flowers are not only pleasing in colour, but elegant in form and graceful in their arrangement. The white flowers of A. Boule de Neige are exceedingly effective, and none are perhaps more really useful than this. The yellow A. Perle d'Or is another pleasing and showy variety; while the reddish-tinted blossoms of A. Darwinii are distinct and attractive.

It is to this latter that many of the hybrids now in cultivation are due. A. rosæflorum, the subject of the

annexed illustration (fig. 9), is one of these, and is a remarkably showy and interesting hybrid. It is the product of a cross between A. Darwinii and A. Boule de Neige, and was raised by Mr. B. S. Williams, of Holloway, by whom it has recently been put into commerce. From A. Darwinii it has derived a comparatively dwarf free-blooming habit, while the bold nicely-cupped flowers are due to its relationship to A. Boule de Neige. The result of the cross is the acquisition of a free-growing greenhouse soft-wooded shrub, of great beauty, and one which can be turned to good account for ornamental work, since the young plants come early into flower, and then go on continuously as long as a steady growth is maintained. Other varieties have since been produced.

Sycamore or Plane trees, Limes, Elms, Service Trees, Horse Chestnuts, and Thorns, all being kinds already noticed for their scarcity of flowers. Although the Lime tree is not yet in bloom, and gives little appearance of flowering profusely, owing to their points being much destroyed by caterpillar, many of the leaves being completely skeletonised, the bulk of the leaves, however, away from the points are all thoroughly developed, and as yet free from caterpillar. The prevalence of easterly winds has been very destructive to the blossoms of many fruit-bearing trees; fruit, in consequence, has the appearance of being scarce in comparison with the mass of blossom which each tree originally showed. During the early part of May the young leaves of many trees got scorched by lightning, domestica), annually noticed for its systematic flowering, still exhibits the same peculiarity, but in a less degree. The top of the tree in question is divided into two leading heads, which flower alternately each successive year. Last summer the western half was loaded with flower and ultimately fruit; while this year, although only three or four dozen heads were visible; they are on the eastern half. On the Sorbus torminalis, which was particularly noticed during 1877 for the abundance and brilliancy of its fruit, not a vestige of flower is to be seen. The foliage on all the Service trees is now in perfect health. Walnut trees look as if they would be barren. Their foliage is in general poor, many of the young leaves fell off early, quite black.



FIG. 9.—ABUTILON ROSÆFLORUM. (SEE P. 76.)

OPEN AIR VEGETATION FOR JUNE.*

THE month of June was very pleasant, mild, and agreeable, although somewhat hot towards the end, when a severe thunderstorm was experienced, accompanied with heavy rain and hail, the latter damaging the leaves of many herbaceous plants, such as Rheum officinale, Vegetable Marrow, and other large-foliage plants. Easterly winds were prevalent with occasional showers, giving somewhat the character of the June months of old.

Arboreous vegetation, although earlier than last year, is still about ten days behind, comparatively few trees being seen with their full complement of leaves thoroughly developed. Perhaps at this time the most copious display of foliage is to be observed on the as large portions on Beech, Elm, Oak, and others seem very much browned up one side in various parts of the country. Greenfly is very numerous and destructive to many forms of vegetation, although slugs as yet are comparatively scarce.

In my notes on open-air vegetation for May I stated that certain trees and shrubs had produced few or no flowers. I have to add that the blossom of many other later flowering trees have also been exceedingly limited. A large tree of the flowering Ash (Fraxinus Ornus), standing in the centre of the garden, and which is generally observed to bloom freely, came into flower on June 18, while the 28th was the day the first flower was seen open last year, but instead of 400 or 500 heads being expanded at one time not more than eighty could be counted altogether, and these unusually small and of short duration. Many Service trees which fruited last season have very few flowers on them now. A large Service tree (Sorbus

The Elder (Sambucus nigra) is by no means overloaded with flower; opened its first blooming head on the 15th, although the first flower on the same plant was not opened last year till the 27th. The Portugal, as well as the Bay Laurel, which are often in full bloom at this time, have no flowers, and scarcely any buds are yet to be seen. Holly, which last winter gave us such a show of fruit, and which ought to be in full flower now, has very few as yet visible, while numerous clusters of berries of last years' crop are still adhering to many plants. Yew berries were also particularly abundant during the autumn of 1877, but very few are now to be seen, even in the young green condition.

Ghent Azaleas have been very full of blossom, and so were the varieties of the beautiful alpine Roses (Rhododendron hirsutum and ferrugineum), perhaps finer than they have been for many years. Of the Kalmia latifolia, although not less than 150 plants are

* Read at the July meeting of the Botanical Society, Edinburgh, by Mr. M'Nab.

cultivated in the garden, not one plant is in flower, notwithstanding the specimens are all in the most perfect health and vary from 2 to 36 feet in circumference. Some large plants of Wistaria sinensis, which are generally covered with flowers, are this year bloomless, although the plants are all in vigorous condition.

The scarcity of bloom on the various examples alluded to is in a great measure owing to the unripened state of the wood for want of sun during the last two summers. At the present time it does not seem that we shall have to suffer from the same cause as far as the season has yet gone, and, judging from the more matured state of the wood, we may fairly look for a copious display of bloom and probably fruit next season. In those instances where the bloom has been stated as very plentiful, such as the Ghent Azaleas and alpine Rhododendrons, the flowering growths were observed to be unusually short. As this season has the appearance of being very favourable for the formation of leaf wood growth, it may not be so advantageous in every instance for the formation of flowering wood.

On the rock garden 360 species and varieties of plants were counted in flower on June 30. Perhaps the most striking are the varieties of the Orchis foliosa and O. maculata superba. These plants are usually cultivated in dampish soils. Here they are flowering freely in the comparatively dry stone compartments. Many of the plants originally put in with single roots are now tufts, each with many heads of flowers, and annually increasing. The O. maculata superba has heads of flowers 5 inches long and 5½ inches in circumference.

The varieties of alpine Poppies are also very beautiful, being crosses between the Papaver alpinum, P. nudicaule, and others. They are white, yellow, and orange, and vary also in size and depth of colouring.

The Orobanche rubra (Red Broom Rape), which flowered last year with eight spikes of flowers, has this year forty-two heads coming forward on the same plant. It is growing on the roots of the white Thyme, on which it is a parasite. This tuft of Orobanche is about 16 inches square. Besides soil, a portion of the Thyme is growing on stone and a part on the ash-walk: some flowers of the Orobanche are to be seen on each place.

Calculating the night temperatures above the freezing point during the month of June, I find that the aggregate is 493°, while the corresponding month of 1877 indicated 485°, showing a difference of 8° above last year.

The six lowest night temperatures above 32° amount to 236°, while the six lowest last year made 241°. The aggregate of the six highest this year was 334°, while 325° is the amount recorded last year.

The six lowest night temperatures were on the 4th, 5th, 6th, 11th, 13th, and 14th, indicating 36°, 38°, 42°, 41°, 39°, and 40°, while the six highest were on the 20th, 23d, 26th, 27th, 28th, and 30th, indicating 54°, 55°, 57°, 56°, 58° and 54°.

The following is a list of some of the most conspicuous plants now in bloom in the rock garden:—

Allium Macnabianum
,, oreophyllum
Androsace lanuginosa
Arnebia echioides
Arenaria laricifolia
Aster alpinus albus
Astragalus alpinus
,, vaginalis
Campanula turbinata and varieties
,, Van Houttei
Chrysobactron Hookeri
Cypripedium spectabile
Delphinium Belladonna
,, cashmerianum
Dianthus alpinus
,, neglectus
Dracocephalum grandiflorum
,, speciosum
Epilobium obcordatum
Eriogonum aureum
Eriophorum alpinum
Erodium Manescavi
Fragaria lucida
Galax aphylla
Gentiana gelida
Helonias asphodeloides
Iris filifolia
Linnæa borealis, American
,, ,, Scotch
Meconopsis nepalensis
,, Wallichii
Menziesia polifolia versicolor
Nierembergia rivularis
Orchis foliosa
,, maculata superba
Oxytropis cyanea
Papaver alpinum aurantiacum
Potentilla alchemilloides
Primula capitata
,, luteola
,, scotica
,, sikkimensis
Rosa pyrenaica
Saponaria cæspitosa
Saxifraga, many sorts
Sempervivum, many sorts
Silene alpestris
Veronica rupestris
Watsonia splendens

Mr. M'Nab placed on the table about sixty species and varieties of hardy alpine and herbaceous plants in pots, including the following:—

Astragalus alpinus
Campanula macrostylus
,, Raineri
Cyananthus lobatus
Dianthus alpinus × D. deltoides
,, ,, hybridus
,, dentosus
,, neglectus
Disa grandiflora
Epilobium obcordatum
Erpetia reniforme
Gentiana ornata
Orobanche rubra
Papaver alpinum album
,, ,, aurantiacum
Primula capitata
Saxifraga aizoides × S. mutata
,, flagellaris
Sedum brevifolium
,, Pottsii
Sibthorpia europæa variegata
Silene Elizabethæ
Spraguea umbellata
Swertia perennis
Triteleia Murrayana

ABOUT BUTTON-HOLE ROSES.

IT will be pretty generally admitted that there is no better flower for the button-hole than the Rose whenever it can be obtained. It must not, however, be hastily concluded that every Rose is adapted for the purpose. There is a natural fitness even in such an apparently trivial art as adorning this humble portion of modern apparel; and it is quite as easy without due consideration to produce an effect of vulgarity instead of finish. The modesty of Nature should always be observed. For instance, what would be thought of an enterprising individual who should place a bloom of Paul Néron, Captain Christy, or La France of "show" dimensions in his button-hole? We can imagine the sensation that would be produced by his transit through the streets, wearing such a fireman's badge sort of object at his breast. Indeed, he would need the *æs triplex* of Horace's pristine mariner, or the effrontery of a Theodore Hook, to venture upon such an outrageous proceeding. But a bud of the last (La France) on a proper coloured garment is as elegant and delicate a subject as could well be found. This brings us to the necessary exercise of that prime factor in every artistic application of form and colour, termed "keeping," so difficult to define, but which may be broadly said to consist of an intuitive perception of propriety in objects brought into juxtaposition for purposes of art.

The two things we have to consider, then, in adorning our button-holes, are the colour of the coat, and—what is too often lost sight of—that of the waistcoat also. A single illustration will suffice. We have a beautiful light Rose-bud, backed up with a leaf or two, but the vest is spotless white. The effect of flower is destroyed of course. A brilliant scarlet bloom, however, would have set off both garment and flower. We do not, however, purpose to enter upon a discussion of the æsthetics of the subject, which would require a space equal to half M. Chevreuil's elaborate work on colour to exhaust it properly. A few suggestions are all that will be attempted, after which the kinds of Roses suitable for the purpose will be dealt with for the benefit of those who desire to manifest their taste through the medium of their button-holes.

To begin with coats, as the backgrounds upon which colour is to be displayed. These are for the main part—

Black.—Few if any modifications.
Blue.—In shades.
Mulberry.—Clarets and the like.
Brown.—Rarely now used as a self-colour; numerously modified in mixtures.
Green.—In various shades.
Greys.—The most modified in mixtures of all.

It must be recollected that, for the most part, these are seen in tolerable masses, and that the object of the introduction of small touches of colour upon them is to lighten up and give smartness to that which would be otherwise dull, just as artists are prone to introduce elderly ladies in scarlet cloaks to give life to a picture. Taking the main colours into account then, we have to consider what may be used in connection therewith to produce an agreeable effect. Scarlets, bright reds, deep crimsons, and maroons always look well with greys, especially in their lighter tones; yellows, from rich to pale; whites (tinted or not), apricots, scarlets and brilliant reds will go well with black. Indeed nothing looks better on a black coat than a small well-matched pair of buds, one yellow and the other some rich shade of crimson or red. Pale orange tints, yellows, whites, and scarlets, are all admirably suited to use with blue. Any tints involving a superabundance of red in their composition ought to be avoided in connection with brown or mulberry; but various shades of yellow, in which orange forms no part, may be appropriately brought into use. Bright reds, and pinks will do well with green. The heathery nondescript mixtures, so fashionable at the present time, are particularly difficult to deal with; indeed we cannot attempt an analysis of the good or bad colours for such in the limited space at command here. Actual trial must be resorted to for ascertaining what looks well with the garment, at least to the satisfaction of its wearer. In cases of doubt or difficulty recourse may be had to the opinion of lady friends—the female eye, which appears to have an intuitive judgment as to colour, will be sure to decide aright. We may just throw out a few general hints before proceeding to the particular Roses recommended for use. Light colours upon dark are telling if skilfully contrasted; light upon light are ineffective. The primary colours, red, blue, yellow, form a good contrast with each other, but their secondary compounds must not be brought into immediate contact with those primaries in which they predominate; thus, purple ought not to be brought near red or blue. Buds are to be chosen in preference to blooms. If the latter are employed they ought to be rather of the small, close petalled kind, than those having a large, shell-shaped form. Blooms should never be more than three parts expanded. Shapely buds, rather long than round, are the most elegant, and if two are used they ought to match in style and size. In enumerating some of the most useful Roses for the button-hole we may classify their colours as follows:—The darkest hue, extending from Prince Camille de Rohan to Charles Lefebvre, including both varieties; these ought to be in bud only, and are best combined with whites and yellows; Emperor de Maroc, Abbé Brammerel and Deuil de Prince Albert may be used fully blown, as they are compact, high centred, resembling somewhat a double Ranunculus in form.

Horace Vernet, Jean Soupert, Louis Van Houtte, Duke of Connaught, Maréchal Vaillant, Vicomte Vigier, Duc de Cazes, with many others, are all very rich and bright, and may be used either in the well-developed bud stage or nearly expanded. Of the crimsons, but subject to a more stringent limitation—for size in these striking colours means vulgarity—a whole army of fine varieties are at our command: Lord Macaulay, Duke of Edinburgh, and Général Jacqueminot, of which immense numbers are forced for winter use; Sénateur Vaisse, Alfred Colombe, Marie Rady, Annie Wood, Mr. Wm. Paul's new Red Dragon, Dr. Andry, Fisher Holmes, and E. Y. Teas, are amongst the choicest. We pass over the cerise and rose colours, which, however beautiful, are less telling for the button-hole than many others, excepting the lovely buds of Madame Knorr and the old Moss, always charming, but best used alone.

Amongst lighter shades, La France, Madame M. Finger, and Mdlle. Eugènie Verdier, are fine upon dark grounds; and Aimée Vibert and Louise Darzins for pure white. The spines on the stalks of Roses for button-holes ought to be broken off, or rubbed down previous to use.

But it is in the Tea-scented class that the finest examples for button-hole Roses are to be found. The following selections embrace the most suitable:—

Yellows: Maréchal Niel stands at the head of them. Then we have Noisettes, Céline Forestier, Bouquet d'Or, Caroline Kuster, and Triomphe de Rennes (when it can be conveniently had, both pale but clear). Reverting to the Teas, come Gloire de Dijon, Madame Berard, salmony cream; Belle Lyonnaise, Jean Pernet, Madame Dr. Jutte, a little coppery, yellow rosette; Narcisse, Perle des Jardins, Jean Ducher, and Vicomtesse de Cazes; Devoniensis is a splendid variety, ivory-white, tinted yellow centre, exquisite in the bud stage. We have next the tinted kinds, very pretty and effective, such as Adrienne Christophle, Comtesse Nadaillac, Madame Jules Margottin, Comtesse Riza du Parc, Marquis de Sanima, and Reine de Portugal; Souvenir de la Malmaison is a most exquisite button-hole Rose in any stage save full expansion—delicate white, with blush centre; Souvenir d'Elise, another beauty; Catherine Mermet, flesh rose; Niphetos, white tinted lemon. These four are amongst the very best, and may be used as single blooms up to nearly full size. The petals are of great substance, and with substantial foot-stalks, a point of great importance. Madame Falcot and Safrano, bright apricot, are absolutely necessary colours, but are useful only in the bud, and harmonise admirably each with another bud of the highest range of colours. Rubens, Sombreuil, and Homer complete a sufficient and copious list. Do not forget that the colours of Roses, like other flowers, are affected by artificial light.

One of the brawbacks we have to contend with in the use of Roses for the button-hole is the brittleness of the footstalks just below the calyx, at which point the flower commonly breaks off. To avoid this it is as well to pass a piece of "tying wire," used in making up bouquets, once or twice through the base of the bud, bringing the ends down a portion of the stalk. If neatly done it will not be noticed. Every one should have a little tube, filled with water or wet sand, out of sight under the lapet of the coat, into which to pass the stalk, otherwise the flower will soon become limp and stale. There is no background for Roses equal to their own foliage, but it must be in good condition. *W. D. Prior.*

NEW ZEALAND PLANTS.

THE following remarks are extracted from a paper read by Dr. Lauder-Lindsay before the Botanical Society of Edinburgh at its June meeting. The paper consisted chiefly of extracts from correspondence relating to the growth in Great Britain of various New Zealand plants.

Mr. Gorrie writes as follows :—

"I have long been anxious to try if at least a few representatives of the peculiar flora of the Southern Hemisphere could be added to our hardy plants, so as to impart to our woods and flower-borders an agreeable diversity in figuring, flower, and foliage.

"My first attention was directed to Van Diemen's Land, plants of which I grew in the open more than twenty years since; then the Australian alps, which form the high ridge between Sydney and Melbourne districts, from which, however, I have not succeeded in getting many objects to experiment upon; and lastly, New Zealand, which, as its geography became known, seemed, by the great extent and altitude of its mountain ranges, the most likely of all to supply hardy specimens of Southern forms of vegetation. Some years since, when Japan was first opened up, a number of gentlemen in Edinburgh and elsewhere combined to send out a botanical collector there, but owing to considerable delay in carrying out their intentions, Fortune and Veitch got into the field before them."

The Messrs. Lawson, of Edinburgh, "five or six years since had some supplies of native seeds sent from a gardener in Otago, a good number of which came up, and not a few seem quite hardy, although some were nothing better than weeds and have consequently been uncared for and lost."

"Plant acclimatisation is certainly a not very well understood subject; but I think more difficulties are thrown in the way by theorists than they have good grounds for. Take, for instance, Asplenium marinum, which grows so well in the old castle and rocks east of Kirkcaldy. It is taken out of its natural dry crevices, and planted in flower-pots fully exposed to the winter rains, by which the soil is kept damp, and the plant rots. This bad treatment is never taken into account; but this pretty native Fern is quoted as an instance how really hardy and even native plants will not grow except where they choose in this country.

"Again, the Cypripediums and many other interesting American plants are said to be incapable of culture here except in greenhouses, while in their native Canada, and even in colder regions, they withstand much greater extremes of cold. The fact is, they have been misused, in never having either soil or situation altered to them so as to be similar to what they naturally choose."

In a subsequent letter of January, 1867, he goes into detail, describing some of his acclimatisation experiments with New Zealand plants at Trinity. It so happened that he wrote after a winter storm. On the late pretty severe storm setting in I thought it would be better to wait to see its effects upon the New Zealand plants he was then growing out-of-doors in his garden.

"In course of it we had the temperature frequently under 20°, and once as low as 11°; the latter was in the Royal Botanic Gardens, and although it may not have fallen just so low in all the places where the plants have stood out, yet nowhere could the difference have been more than a few degrees."

"Oxalis corniculata, L., has become a naturalised weed in some of the plant collections here, both indoors and outside.

"Clianthus puniceus, Banks and Sol. (var. elegans), has stood three winters on a west wall, where it flowered splendidly last spring. It has more shining leaves and seems a more rapid grower than the first-introduced form of the species, which also stands out in mild winters.

"Cookia Cotoneaster, Raoul, has stood the last two winters at the base of a wall with northerly exposure.

"Craspedia—two herbaceous species, one large and the other small—have been grown in gardens about Edinburgh for the last twenty-four years. Sent originally from Van Diemen's Land.

"Myosotidium nobile, Hook., stood three years since in a cool glass-house with northerly exposure, unharmed, with a temperature about 20°.

A Veronica, "unknown to Dr. Hooker, with remarkably narrow Rosemary-like leaves, stood out the two last winters at West Shandon, on the Gareloch.

"Fagus antarctica, or an allied evergreen species from South America, stood the winter of 1860—61 at Prestonhall, when the temperature there fell to about zero; but several plants were killed down to the snow-line about Edinburgh when it fell 5° to 6° lower.

"Arundo conspicua, Forst., an elegant grass, is very hardy—its leaves remained fresh and green when exposed to the late severe frost.

"An unknown plant, with leaves finely scented when bruised—said to have been from New Zealand or Van Diemen's Land—has stood in the open border for the last twenty years.

"The preceding contains all that I can call to mind relating to outdoor-grown New Zealand plants. If you see the way of getting seeds home from any of your friends, then it would afford me much pleasure to experiment with some of them for you. I should like to get some of the New Zealand Araliaceæ, as I think some good and hardy plants may exist among them, also of the alpine Veronicas, especially of those curious, cord-like ones, with stout imbricated leaves."

Mr. Henderson's communication refers exclusively to the importation and growth by him at Helensburgh of Tree and other Ferns from the province of Otago, N.Z. In August, 1867, he wrote to me :—

"I would consider it a pleasure if you could pay me a visit at Towerville, where I could show you such a lot of New Zealand and other Tree Ferns as are not equalled by any collections in Great Britain or on the continent of Europe. . . . Captain Logan has certainly the credit of having brought the finest lots of Tree Ferns, particularly the silver-haired Cyathea dealbata, that ever were imported into this country. Last year (1866) he brought me, by the *Robert Henderson*, a lot which he dug up in the month of January, several of which had stems 6, 8, and 10 feet in height, and beautiful silvery fronds upwards of 6 feet in length. This year, when in command of another of my ships, the *William Davie*, he was fortunate enough to bring me an equally superb lot, which he also dug up in the month of January, some of which had them 12 feet high, and already show healthy fronds, 3 and 4 feet long, but, being younger plants, without as yet the silvery character of last year's ones.

"With the above last importation I received fully a dozen of splendid Dicksonia squarrosa, 4, 6, to 8 feet in height, showing fronds already 3 to 4 feet in length; and with these a few other Tree Ferns of smaller size. . . . I think you would be highly pleased to see some of the Todea superba and T. hymenophylloides, also brought by Captain Logan. I would be able to show you a very nice plant of Dicksonia antarctica—a seedling of eleven years, of my own growing.

"Captain Brown, of the *Helenslee*, brought me three years ago from Auckland several very nice Ferns, but of smaller dimensions than the Otago ones, amongst them some samples of Cyathea dealbata that are perfect gems.

"Of small New Zealand Ferns in my collection I may mention :—

Trichomanes demissum	Asplenium præmorsum
,, reniforme	,, lucidum
Pteris vespertilionis	,, flaccidum
Polystichum vestitum	,, diversifolium
Platyloma rotundifolium	,, bulbiferum
Microlepia novæ zelandiæ	Blechnum australe
Lomaria lanceolata	Adiantum setulosum
Lastrea glabella	,, hispidulum
Davallia solida	,, australe

"I received the last lot of Ferns by the *William Davie* when Captain Logan came round from London with the ship in the middle of May. We then considered the atmosphere too cold for them, consequently had them put under glass in a Peach-house, where, however, after a short time the fronds came out in such a healthy manner that, on account also of their size and their coming against the glass, we were obliged to remove them to a sheltered corner in the open air, where they have been up to date, and will remain for two or three weeks till the new iron and glass fernery—50 feet by 30 feet and 25 feet high—which I am at present erecting is ready to receive them, and which I expect will please you as much as the Ferns themselves.

"My New Zealand Ferns are in a conservatory which in summer is never heated by fire, but in winter is kept at from 50° to 60°. A number of the tropical Ferns are in the Orchid-house, and subject often to a temperature of 80° to 90°. I have besides another fernery, where a number of Ferns are kept at 60° to 70°."

Visiting Towerville in September, 1867, I found Cyatheas and Dicksonias, with other Otago Ferns, flourishing in pots in the open air, pending their reception into the new temperate fernery. Various other Towerville acclimatisation experiments were instructive besides those on Ferns. Because certain Otago Veronicas had been killed down at once in the open in winter, or because it was found that they could stand one or two degrees of frost only, it was at once inferred that they are to be considered in our climate half-tender, and hence no other Otago plants of any kind are tried in the open. Spring was always found more fatal to exotic vegetation than winter.

Very different was the experience of Mr. Rae in the Dean Cemetery. Writing to me in February, 1867, he said :—

"Nearly all the New Zealand plants that I have tried have proved perfectly hardy. Among these I may notice the beautiful Anthericum Hookeri, Craspedia Richea, a fine herbaceous plant, producing its flowers in compact yellow balls resembling a small Orange; Acæna novæ-zelandiæ, Vittadinia trilobata, the pretty Eurybia eminens, which is trained against a wall and is every year clothed with thousands of its Daisy-like flowers. All of these are quite hardy here. Dr. Lowe, of Laughton Hall, tells me that Phormium tenax has suffered with him very severely during the recent storm. But, although that may be the case with some individual plants, I have every hope that a large portion of the flora of New Zealand will be found adapted for our climate—that is, free growth out-of-doors in our gardens, shrubberies, and woods."

A CHILDREN'S FLOWER SHOW.

AN annual exhibition of plants by the children resident in the parish of Holy Trinity, Brompton, took place in the gardens of the Royal Horticultural Society at South Kensington, on Thursday the 11th inst., and proved of an interesting and instructive character. It was under the management of the Rev. A. S. Brooke, curate of Holy Trinity, and a committee of ladies and gentlemen. At nine o'clock the children began to bring their plants, no one exhibitor being allowed to produce more than three, and up to half-past ten quite a stream of hopeful prize-winners poured into the western arcade. On arrival each child's name and address was taken, with the number of plants shown, and in order that the exhibition should be as *bonâ fide* as possible, a committee of ladies visits the houses of the parents of the children two months before the show is held, and each plant has a piece of tape placed on one of the branches, which is duly sealed. Every plant presented for a prize must bear this seal. The clergy of the parish every year provide a quantity of plants which are sold to the children at 4*d.* each, and the Sealing Committee are set to work soon after the purchases are made.

Two classes of plants are shown—those that were exhibited at the show the previous year and have been kept through the winter, and those purchased two months before. A number of prizes are given to the best plants in each section, preference being given to the one-year-old plants.

No money prizes are given, but instead, useful articles of art, books, &c., are provided. This is done in order to secure as far as possible the prizes to the children, and to prevent unprincipled parents appropriating the money to themselves.

The old plants consisted of Fuchsias grown against trellises, a few being capital examples; Pelargoniums, Creeping Jennies, Ornithogalum longebracteatum, Ferns, Musk, and a few other subjects. Of the four 1st prizes given in this section, three went to nicely-grown and flowered Fuchsias, and one to an excellent specimen of a Creeping Jenny. The Royal Horticultural Society gives a Bronze Medal for the best plant in the show, and this was awarded to a highly praise worthy Fuchsia grown by Angelina Garrett, to which a 1st prize was already awarded. It was said this plant had been grown under somewhat difficult circumstances, but it was bold in growth, clean, and nicely bloomed. The next best plant was a fine Creeping Jenny from Elizabeth Rhodes, requiring only a little more flower to make it perfect.

In the section for new plants a very large number were staged, and comprised Aspidistra lurida, scarlet, large-flowered and scented-leaved Pelargoniums, Fuchsias, Musks, Lobelias, Coleus fruticosus, succulents, and various others. These were nicely arranged in a stage with some Palms, Fuchsias, &c., belonging to the Society at the back, and so a nice effect was secured. The leading prizes went to Fuchsias, scarlet Pelargoniums, Musk, Creeping Jennies, and Nettle plants.

The cleanly character of a large number of the plants was specially noticeable. One effect of this annual exhibition is no doubt to give increased attention to the culture of the plants, and it was remarked that they were not only in better condition, but much more numerous than last year. As far as one could judge from the appearance of the children they were mainly the offspring of the working classes.

The little people appeared to take an immense interest in the show, and when the doors were opened quite a rush was made to see whose plants had gained prizes. Each child's name was pasted on the pot containing his or her plant, to assist in identifying them at the close of the show.

The prizes were distributed by Lady Alfred S. Churchill at 5 o'clock, and for years to come memories will cluster thickly and fondly round the proceedings of what must have proved to hundreds of children an exciting and happy day. *A. D.*

Florists' Flowers.

THE PINK IN 1878.—The Pink may claim an honourable position in the largest and best kept gardens. The flowers are very sweet, having a perfume peculiarly their own; they are very pretty and withal very easily cultivated. It is because they are so easily cultivated, and can be grown to perfection without the aid of glass, that the Pink is so valuable to small amateurs and cottagers. It is a pleasing sign of the times that there is such a large demand for plants, growers for sale North and South having had much difficulty to get up a stock of plants equal to the demand for them. On a recent visit to the nurseries of the Messrs. Veitch & Sons, King's Road, Chelsea, I was shown a large bed of the best varieties of Pinks. They were in splendid health and flowering quite as freely and as well as our collection at Loxford. I noticed that some of the varieties were not well laced, and some not at all. This was readily accounted for from the fact that the plants were not put out in the bed until the spring. Plants raised from flowers that are not laced will be quite as good as those raised from the best laced flowers—it is merely a question of the date of planting. October is the best month for this purpose. Pinks have never flowered better with us than they have done this year. They seem to delight in a moist cool climate, and the flowers are at their best as I write (June 25). On that date, too, we had finished putting in the pipings. They always strike roots best when they are removed from the plants on a wet day, and if it is dull and wet for a few days after a good strike is certain. I usually put them into boxes rather close together, and then place the boxes in a shady place. I used to strike ninety pipings out of every hundred in Scotland, and they were merely put out in the open ground without any protection. I have just taken a few notes of the best sorts in our collection, which may be useful:—Shirley Hibberd (Turner) is a large full flower, with medium reddish purple lacing; one of the best. Annie (McLean), a beautiful sort, evenly laced; the petals neat and regularly arranged. Rosy Gem (Hooper), one of the best by this raiser, very pretty, medium lace. Venus: this variety was sent to me from Scotland; it is too full of colour, and the edges of the petals are serrated; a showy variety. Mrs. Mitchel (Hooper), late flowerer, but very prettily laced. Genevieve (Marris), a free-flowering sort; neat habit of plant, colour rich and lacing regular. President (Turner), usually good, but it is a great failure this year. Robert Pattison, another sort from Scotland; a full flower, but lacks refinement. John Drake, a flower sent to me by Hooper, of Bath; it resembles Venus, but is of much better outline; deep reddish purple lacing. Ne Plus Ultra (Hooper): this is the same as Boiard (Turner); it is a grand flower, of the same character as Dr. Masters and Shirley Hibberd. There are too many petals, and unless a few of the small ones are removed the flower has a confused appearance. It has very clearly defined purplish red lacing. It would probably not open well in the North. Emily (Battersby), one of the prettiest sorts in the collection; deep maroon lacing, dwarf habit, and free flowering. Nonpariel (Bragg), flowers of the largest size; lively rosy purple lacing, robust habit. Blondin (Turner), deep crimson-purple lacing, full flower, and healthy free growing plant. Device (McLean), a handsome variety, very showy, full flower; well defined rosy red lacing, the white very pure. Grand Sultan: this variety is said to be very fine; it was sent from Bradford, but it has failed with us this year. Excelsior (Marris), a very fine flower, large well-shaped petals, with distinct narrow maroon lacing; healthy plant. Gay Lad, an old flower from Scotland, tall habit, flowers very freely; deep rosy red lacing. Dr. McLean (Turner), rose lacing, a fine full flower; stem medium height. Dr. Masters (Turner), a very fine flower when it is well grown, but it is one of the most difficult to manage; the grass is very weak and flower-stems slender; flowers of the largest size, petals broad, smooth, and distinctly laced with deep red. Empress of India (Hooper), a new flower sent to me by the raiser; it has large flowers, but is certainly not superior to others of the same class; it has well-defined rose lacing. Mildred (Turner), one of the best; flowers large and full; petals broad and smooth, with well-defined rosy red lacing. Warrior, another Scottish flower, very late, and was not in character this year; lacing irregular and splashed. Mrs. Thurston, sent to me by the Rev. F. D. Horner, but none of the flowers were laced. James Hogg disappointed in the same way; this variety is very difficult to propagate, and a stock is kept up by growing and layering in pots like Carnations. Aurora, sent from Scotland, very late to flower, but when in character, a desirable variety. Lowlander (Turner), a full-sized flower, with rich lively red lacing; the lacing is not always well-defined, but when at its best this is a very fine flower. John Ball (Turner), medium grower, broad reddish purple lacing; one of the best and most constant sorts. Excellent (Turner), a large full flower, with smooth petals, medium purple lace, very constant. Prince Frederick William (Hooper), one of the best by this raiser, reddish purple lacing, smooth petals, very free-growing and free-flowering variety. Reliance (Hooper): this was the finest flower in our collection last year, and it is usually good, but is not up to the mark this season; deep red lacing, large full flowers. Victory (Hooper), very distinct in the grass, which is light green, flowers full and broadly laced with pale reddish purple.

The above are the best flowers in our collection. I have grown a number of other sorts, but there is a great family likeness in Pinks, and it is not worth while to grow sorts that cannot readily be distinguished from each other. There are a few varieties of a different type that are well adapted for forcing, of these the best are Lady Blanche (Gibbons), a pure white variety with smooth petals, and abundantly floriferous. Lord Lyons (Clark), a very free-blooming sort, the ground colour is rosy red, with reddish purple lacing, smooth petals; very similar to this variety is Derby Day, by the same raiser, as it has been exhibited by Mr. C. Turner, of Slough. It is a useful decorative variety, but I have not succeeded in growing it satisfactorily. Anne Boleyn, an old variety, probably the parent of the above, is a larger flower, and makes a stronger plant than the above: a very useful border flower. They are all propagated freely from cuttings, but those intended for forcing should be put in early in May. *J. Douglas.*

WEIGELA HORTENSIS NIVEA.

THE Weigelas, as is well-known, rank amongst the most ornamental of our dwarf-growing deciduous flowering shrubs. The first which appeared in our gardens was W. rosea, introduced from China in 1845, through Mr. Fortune, by the Royal Horticultural Society. Since then W. amabilis has been introduced, also from China, while W. hortensis, the white form of which is the subject of the annexed illustration (fig. 10), is said to have come from Japan in 1863.

Weigela hortensis is one of the Japanese plants described by Siebold and Zuccarini, who adopted the generic name of Diervilla. They describe it as a shrub of 4 to 5 feet high, with opposite pubescent, oboval or oblong, cuspidate, finely toothed leaves, and flowers terminating the short axillary branchlets. They have a persistent calyx, and funnel-shaped corolla, which is red or white, somewhat downy outside, smooth within, and having a regular limb of five oval obtuse entire segments; there are five projecting stamens, and a filiform style equalling them in length. The capsule is crowned by the persistent calyx.

The white-flowered variety, W. hortensis nivea, is a very handsome plant, remarkably free-flowering and attractive. It is moreover very effective in contrast with the rosy tints of the majority of the garden forms, and the deep crimson of that named Lavallei. Our figure was made from specimens communicated by Mr. Parker, of Tooting.

Notices of Books.

Field Paths and Green Lanes. By Louis Jennings. Murray.

This is a charming book for the tired townsman. It smacks of green fields, is fragrant with the wild Thyme of the downs, stirs the pulse of all those who can appreciate a noble prospect or feel an interest in a village church erected by the piety of our ancestors. "Country walks chiefly in Surrey and Sussex" form the staple of the book, and a pleasanter companion in the lovely lanes of our southern counties we do not desire. Mr. Jennings chats pleasantly enough of the much neglected but altogether beautiful country forming the Weald of Sussex and the adjacent districts in Surrey—districts within an hour or two's ride from the metropolis, but many of them less known than the Welsh hills or the Cumberland lakes. Mr. Jennings makes no pretence to instruct us in physical geography, geology, botany, archæology, or any other of the "ologies." His notes on such subjects are few and far between, but a naturalist with a sheet or two of the Geological Survey map with him would soon fill in the details left untouched by Mr. Jennings and add tenfold to the enjoyment to be got out of field paths and green lanes.

The book as we have said is a delightful one, nevertheless we have a complaint or two to make against the author. One is his indiscriminate condemnation of "restoration" as applied to old churches. That much restoration has been injudicious there can be no doubt, but preservation and careful adaptation to modern wants and increased needs are surely legitimate enough. A ruin is picturesque and Goth would he be who attempted to "restore" it, but a building that is in daily use is not, or ought not to be a ruin—it should be jealously preserved from becoming such. Does Mr. Jennings suppose that the talent of the mediæval architect or the piety of our forefathers would have allowed their handiwork to fall into ruins if they could have avoided it? Could they see the crumbling condition which has been the consequence of neglect as much as of unavoidable causes, would they be satisfied thereat? Rather, would they not applaud the loving skill and reverent care which endeavours to repair the neglect of the past and to conserve to the future the monuments of the talent and good-feeling of their predecessors. Given the requisite knowledge, judgment and appreciation, and restoration becomes a thing to be praised and encouraged, not indiscriminately abused.

On another point we must join issue with Mr. Jennings. He is fond of narrating his conversations with the villagers and wayfarers he meets with in his rambles, and we could have wished he had given us more illustrations of their habits of thought and mode of speech, both of which are calculated to afford valuable suggestions. But what right has Mr. Jennings to assume, as he does in several places, that his *protégés* have a monopoly of those higher and better feelings which we venture to think are shared in more or less by all mankind boasting of any degreee of civilisation? Far be it from us to undervalue the simple piety and unquestioning faith of lonely shepherds or wandering tinkers. We merely demur to the thoughtless comparisons the author makes between such persons and others in a different walk of life. Mr. Jennings is especially severe by implication on scientific men as a class, but were he thrown into contact with them, and were he to become conversant with their modes of thought, and their appreciation of the majesty and beauty of Nature, he might perhaps be disposed to admit that according to their lights they have as exalted notions concerning higher things as a Sussex boatman or a Hampshire peasant woman. There is no necessity for making any such comparison, and we trust that in any future edition the author may be induced to run his pen through such passages as we have indicated.

We add a few extracts relating to the Yew, which will interest many of our readers:—

"The Druids' Walk is long and narrow, with a declivity in some places rather steep, to the left hand, and rising ground to the right, all densely covered with trees. The Yew begins to make its appearance soon after the little gate is passed, like the advance guard of an army. In certain spots it seems to have successfully driven out all other trees. As the path descends the shadows deepen, and you arrive at a spot where a mass of Yews of great size and vast age stretch up the hill, and beyond to the left as far as the eye can penetrate through the obscurity. The trees in their long and slow growth have assumed many wild forms, and the visitor who stands there towards evening, and peers into that sombre grove, will sometimes yield to the spell which the scene is sure to exercise on imaginative natures—he will half fancy that these ghostly trees are conscious creatures, and that they have marked with mingled pity and scorn the long processions of mankind come and go like the insects of a day, through the centuries during which they have been stretching out their distorted limbs nearer and nearer to each other. Thick fibrous shoots spring out from their trunks awakening in the memory long-forgotten stories of huge hairy giants, enemies of mankind, even as the 'double-fatal Yew' itself was supposed to be in other days. The bark stands in distinct layers, the outer ridges mouldering away, like the fragments of a wall of some ruined castle. The tops are fresh and green, but all below in that sunless recess seems dead. At the foot of the deepest part of the grove there is a seat beneath a stern old king of the wood, but the *genius loci* seems to warn the intruder to depart—ancient superstitions are rekindled, and the haggard trees themselves seem to threaten that from a sleep beneath the 'baleful Yew,' the weary mortal will wake no more."

"The great curiosity of the gardens at Albury is the Yew hedge before referred to, now more flourishing than ever. It is a quarter of a mile in length, and is largely formed by Yew trees, which grow at regular distances, and form a sort of canopy with their branches on each side of the greensward beneath. The lower branches are cut and trimmed every few years in order to preserve uniformity. Under the trees there grows the hedge proper—it is, in fact, a thick hedge with an overhanging roof of Yew trees carefully kept in shape. It is pro-

bably the finest and most remarkable hedge to be seen in England, and running at right angles with it there is a Holly hedge to which it would be hard to find an equal."

Estudios sobre las deformaciones enfermedades y enemigos del arbol de Cafe en Venezuela. Por A. Ernst. (Researches on the Malformations, Diseases, and Enemies of the Coffee Tree in Venezuela.)

This is a reprint of a paper presented to the Natural History Society of Caracas, containing some statistics of the production of Coffee in Venezuela, and descriptions of the various diseases, &c., to which the tree is liable. The quantity of Coffee exported from that country during the financial year of 1874—1875 was 35,721,130 kilograms, and a little less during the following year; and the annual home consumption is estimated at 10,000,000—in fact Coffee is the chief source of wealth in Venezuela. Five different kinds of malformations are described, only one of which, it is stated, has been mentioned by Moquin-Tandon, Masters, and other writers on teratology. Vigorous branches often produce branchlets which, instead of proceeding directly from the axils of the leaves, are given off about a quarter of an inch above them. This is by no means so uncommon an occurrence as the writer seems to think. Another abnormality observed was deeply lobed leaves on some branches. The abortion of one seed and the consequent different shape of the remaining one when fully developed, as in the Mocha Coffee, is well known, though it was not known, according to Mr. Hiern (*Trans. Linn. Soc.* series 2, vol. i., p. 171) whether Mocha Coffee was a distinct variety, or only due to a particular mode of cultivation. Ernst states that Mocha Coffee is called *Café caracolillo* in Venezuela in allusion to the resemblance the seeds bear to certain univalve shells of the genus Cypræa, and that there it is found chiefly at the ends of the branches or on all the branches of weakly trees; but this property appears to become hereditary. In Guiana trees bearing only Mocha Coffee are abundant. Sometimes the seed is more or less two-lobed, one lobe being much larger than the other, and rolled around it. Several of these variations are described and figured in the fifth volume of the *Adansonia*. The part concerning disease, &c., contains little that is new to Europeans. There is, however, an interesting note at the end respecting the dimorphism of the flowers of the Coffee. In the *Gaceta Botanica*, 1869, Dr. Bernoulli states that, amongst the normal flowers of the Coffee, and in the same axils, there are many smaller flowers having a three or four-lobed coralla, and destitute of stamens, but having a perfect ovary. These small flowers alone produce fruit, whilst the larger ones, with regular five or six-lobed corollas, furnish the pollen. Ernst adds that he has nowhere been able to confirm this in Venezuela, or read of its occurring elsewhere than in Costa Rica, and he suggests that Bernoulli has been too hasty, and generalised on a solitary case. But, after a cursory examination of the specimens in the herbarium at Kew, we can so far corroborate Dr. Bernoulli as to say that the flowers of Coffea arabica are usually, if not invariably, dimorphic. Cultivated specimens from Asia, Africa, and America, in-



Fig. 10.—Weigela hortensis nivea. (see p. 80.)

cluding Venezuela, present the same peculiarity. Whether the flowers are so completely monœcious as Dr. Bernoulli describes, cannot so easily be determined from dried specimens. *W. B. Hemsley.*

The Villa Garden.

STRAWBERRIES.—A Villa Garden without Strawberries would be an incomplete garden, for it would be wanting in one of the most popular and favourite fruits. If there were room for but one fruit, that should be the Strawberry. It is the earliest of outdoor fruits, it can be grown in a small space, it is a certain fruit, a few plants in a bearing state yield an agreeable supply; and it can be cultivated without much difficulty. The Villa gardener should and must have his plot of Strawberries.

He is apt to commit the mistake of trusting too long to an old bed, and forget that plants wear out; and when this comes about there is blindness where there should be blossom and fruit in plenty, or the crop is small, and the fruit wanting in goodness and quality. He should replenish his beds from time to time, and we will proceed to supply a few suggestions in regard to this important matter.

RUNNERS.—If our Villa gardener is in possession of a good sort or two of Strawberries, and he is desirous of continuing the cultivation of them, he should take runners as soon as he can. The plants are beginning to put them forth, and he should thin out some of the weakest runners, leaving only a few of the strongest. Next he should loosen the soil round the plants, and top-dress with some good soil so as to supply something for the runners to root quickly into. When the runners reach the soil, and they have put forth two or three leaves, take out the secondary runner they make, place a stone on the stem close to the leaves, and if the weather be dry sprinkle overhead with water. They will soon strike root into the soil, and become good plants if kept well watered. To have extra strong plants it is a good plan to fill some small 60-pots with rich soil, and insert them in the ground nearly up to their rims, just underneath the runner, place it in the middle of the pot, peg it down on to the soil, or put a stone on it to keep it stationary, and it will soon root. By-and-bye the runners may be severed from the plants, the pots lifted, put by in a cool shady place, and kept well watered, and then they will be capital stuff to plant out for the purpose of forming a new bed.

One word of caution is necessary here—do not take runners from blind plants, that is, plants that do not bear fruit, but only from those that have fruited. Sometimes it happens that when Strawberry plants go blind they do not again produce fruit, and it is useless to propagate from these.

If the Villa gardener is desirous of growing a new sort or two he should be careful to get his plants from a trustworthy source. There are some nurserymen who make a speciality of Strawberries, and from these sorts true to name can be obtained. He should have a few of the earliest runners taken off just as they are beginning to put forth roots. When these come to hand they should be put singly in small pots—some about 2½ or 3 inches in diameter will do—using a good soil and potting firmly. Then the plants should be stood away on some cool shady spot, and kept well watered, so as to grow into as good a size as possible. So much, then, for the provision of plants.

SOIL FOR STRAWBERRIES.—The Strawberry is a somewhat accommodating plant, for it will grow in any good garden soil provided it be good. Most of the sorts will do well in a stiffish sandy loam, but it must be made rich, and in a rather strong loam provided also it be well enriched and kept moist. Gardeners generally are adverse to planting Strawberries in close wet clayey soils; it may suit a few very vigorous sorts, but unless such soils are made lighter and rendered more porous by mingling with them mortar rubbish, wood-ashes, leaf-mould, and decayed vegetable refuse, they do not bring good crops of fruit. The soil for Strawberries should be of a holding character; it should rest on a cool and moist bottom, and not be of a nature that will get very dry from the effects of a fortnight's drought. We sometimes get a spell of hot, dry weather at the end of May, and when this happens, and the soil of the Strawberry bed gets dry, and the plants begin to flag, unless good drenchings of water be given, the crop will be all but lost. Nothing is so harmful to a Strawberry bed as for the plants to be checked for want of water; it is worse than a superabundance of rain, and that is bad enough.

PREPARATION OF THE SOIL.—It is little better than a waste of time to attempt to grow Strawberries in poor ground. The market gardener's golden rule is, to put plenty into the ground, in the certain belief that plenty will be got out of it in the way of crops. This is true of Strawberries. The soil in which they are grown must be rich. It must be deeply dug, or, better still, trenched: and if trenched, it should be to the depth of 2 feet. When trenching is done, a good dressing of thoroughly rotten dung must be worked in, and so distributed as to leave it about a foot below the surface of the soil: some rotten leaves and leaf-mould should be mixed with the soil nearer the surface.

WHEN AND HOW TO PLANT.—A Strawberry-bed can be made at any time as soon as the plants are sufficiently well-rooted. There is nothing like taking advantage of showery weather; but if the plants are in pots, and they have good balls of earth to the roots, planting-out can be done in dry weather, provided the plants be kept well watered till rain comes.

It is best to plant in lines, about 2 feet or so apart—a little wider for strong-growing sorts, a little narrower for weakly growing ones. Let there be at least 18 inches from plant to plant in the rows. Mark out the lines at a proper distance, and then with a trowel proceed to plant, placing the plants firmly in the soil by pressing it well about them. Plant as deeply as possible without burying the heart of the plant. Water as required till the Strawberries are established in the soil.

Forestry.

THIS with foresters generally is the most leisure time of the year; they have, at least, usually fewer hands employed now than in spring, autumn, or winter. Whether upon well or ill-managed estates, however, and with foresters of all capacities, there is always work in arrear, and it is upon the arrears' list that I make the following observations.

In these days, when education is recommended for all the ills that flesh is heir to, and some also that flesh is not heir to, the forester's *curriculum* has also by his advisers been provided for him. Education must be an excellent thing, and happy, or rather fortunate, they who possess it; but the real kind as well as the proper quantity of education necessary for a good forester has, from some cause or other, been well-nigh overlooked, both by ancient and modern publishers, as the sequel will, it is hoped, in some faint measure indicate. The farmer knows the number of stock upon his farm, the quantity of grain and tons of roots and tubers it produces, together with their true or approximate value. And why, it may with propriety be asked, cannot the forester give all the data connected with his profession—or, if not all, at least as much as his employer or the public are entitled to know, such as the number of trees upon the estate or district of each species that ought to be cut down as ripe or mature annually, and the market value of such annual cut or fall of wood? By knowing this accurately the estate is saved the risk of exhausting the wood revenue by over-cutting during any period. How many trees are there upon the estate altogether, counting from the date of first thinning? This may appear a difficult question, especially upon estates of large area, but it is by no means difficult, nor the work at all unpleasant or laborious; and any forester who knows his profession well, and can attend to it, should not be ignorant of the number of trees of pit-prop size and upwards upon the district over which he is placed in charge; how much the annual increase of growth of all the woods and plantations of which he has charge; and what the money value of such annual growth. In order to find what the annual growth and value is, it is necessary to take each wood or class of trees by itself, such as timber trees, whose annual growth is valued by the cubic foot, and spars and props by the lineal foot or top growth. The bases of calculation of the increase of timber trees is the thickness of the annual layer or outer zone of alburnum, and that of trees below timber size by their top growth. The causes of decay and death of all trees should be well known, and there is no justifiable reason for a forester not knowing from what cause a tree died at least as accurately as a physician knows from what cause his patient succumbed; indeed, when the mechanism of a tree is compared with that of a human being, the simple structure of the former may satisfy any one that its derangement can be much more easily found out and disease prevented or cured.

Besides learning the new lessons, there is an equally hard task to accomplish, namely, the unlearning of some of the old ones; and as we all know the difficulty of giving up what to us has become a habit, so we may know how hard a thing it is to come round to disbelieve what formerly we had faith and confidence in, of which the following are examples:—

That the roots of trees rend and split rocks mechanically as well as chemically many erroneously believe in, and act in accordance with such belief.

That the principal reason for pruning trees is to increase the growth of the stem and trunk by cutting off side branches, which were appropriating the so-called stem's nourishment; and by so cutting off the lateral branches and contending shoots, the sap which formerly went to nourish them now immediately on being cut off flows into and nourishes the stem or trunk of the tree.

That insects, such as the white bug, are the cause of sickliness and premature death of the Silver Fir, Larch, and Beech hedges.

That thinning is always beneficial to Pine and Fir plantations, and that by thinning out a certain number of trees those that are left benefit to an extent equal to the growth lost by those trees cut down.

That ground cannot be drained too much for the welfare and development of trees; and that, unless the surface of the ground is rendered perfectly dry, the trees are thus placed under unfavourable conditions for their growth and development.

That barking of wood for fence-posts makes it last longer than it does when left on, and that the heart-wood, no less than the sap-wood, is influenced by the season of the year at which it is cut.

That the action of open drains is similar to that of underground drains; and as the deeper the better for the latter, so also for the former.

These are a few of what I believe to be fallacies; and though in themselves of comparatively small importance, yet in connection with other subjects, and specially as the basis of reasoning, it must be obvious that holding such tenets is a matter too serious in its consequences to be lightly regarded. *C. Y. Michie, Cullen House, Cullen, July* 15.

Garden Operations.

FLOWER GARDEN, ETC.

Former directions with regard to Roses are still applicable. We do not often get a season in which they come out so strong and fine as they have done this year, nor one in which a better return has been made for liberal treatment, and this must still be followed up both for the purpose of strengthening the plants, and to assist in securing a good autumn blooming. The propagation of choice varieties by budding may be carried out at once where required, but as a general rule gardeners ought not to be called upon for much of that sort of work, as their hands are far too full in other ways. Bedding plants will now require constant attention. As long as a small hoe can be inserted among them the surface should be frequently moved, and decayed leaves and seed vessels often picked off. If this is not attended to the later blooms will be poor; in addition, therefore, give the beds from time to time moderate applications of liquid manure. See also that grass edgings and verges are kept very neat, and gravel walks frequently rolled, for unless these matters have constant attention very much of the beauty of the flowers will be unappreciated. Now that the season of growth is in full operation carpet bedding will be a source of daily trouble. Strong growing plants which form the lines of the patterns should be carefully pinched and stopped to confine them to their legitimate limits, and the creeping varieties which fill up the divisions require to be constantly pegged into shape. This kind of planting is nothing unless the lines and divisions are most accurately marked and kept in place, and when growth is in full action pegging out and pinching back is a daily operation. Many annuals are now in full beauty, and add greatly to the charm of the mixed garden, which after all,

owing to its great variety and ever changing colours, will always afford the greatest amount of enjoyment to the true lovers of flowers. Amongst the choicer kinds of annuals some of the more conspicuous ones will be found in the Zinnia elegans flore-pleno, also Z. Haagetna imbricata flore-pleno, a valuable acquisition in orange-yellow flowers; Godetia Lady Albemarle, which, however, is not so strong-growing as G. Whitneyi, from which it is evidently derived, and which should have a place in every garden. Phlox Drummondii is another very useful plant either in mixed borders or in a bed; in the latter case the soil should be much enriched, and the plants as growth progresses frequently pegged out, so as to form a compact mass; the great variety of colour in the flowers is very charming. One of the most useful plants at this season in the mixed borders is a good strain of Sweet William, of which there are several very eligible varieties both single and double; all may be propagated from seed, and now is a good time to mark the very best-formed and best-coloured varieties, without which care a good strain cannot be maintained, for if seed is saved indiscriminately the varieties soon degenerate. See that the seedlings from the early sowings in June are properly pricked out in the reserve garden in readiness for autumn planting. East Lothian Stocks should be planted at once in the situations where they are intended to flower. Seed of this variety and also of the Emperor and intermediate varieties should be sown at once for the purpose of potting off, to be kept in the shelter of a pit through the winter and planted out in spring. The early sown Giant Bromptons may be potted now and plunged in the open air, to be sheltered through the winter, and planted out in very rich ground in early spring. The true variety produces immense spikes of blossom and is highly ornamental, but they are very apt to degenerate, owing probably to being crossed by the bees with the number of varieties which flower at the same time. Those who possess the true old strain will do well to isolate the plants from which they save their seed as far as possible. The borders of herbaceous and other plants are very interesting at this season, and will require constant attention to maintain that condition of neatness so essential to the thorough enjoyment of their beauty. Timely support must be given to all the strong-growing sorts; the surface between the plants must be constantly stirred and neatly raked over, and the vacancies continually filled up with the reserve plants of Asters and other annuals kept for the purpose, amongst which Tagetes signata pumila will be found very useful. The mowing of the lawns has this season been one of the most arduous of the gardener's duties; now, however, there seems a reasonable hope that it may be well kept under. The grass is in very fine condition, and to keep it so it will be necessary to pass the machine over it once a week, taking care not to shave it off too closely. *John Cox, Redleaf.*

FRUIT HOUSES.

ORANGE-HOUSE.—Those who understand the culture of Pines will be able to grow Oranges well. The best fruit I have yet grown, and it is produced in the same way every year, is from a house that was erected to grow Pines. The house is a half-span, facing south; the bed for the Pines is at the front part of the house, and there is a stage at the back for the Orange trees in pots. They are now fully exposed to the sun, and in such a position absorb a very large quantity of water from the soil in the pots and also from the leaves. The trees are syringed at least twice a day, and in hot, dry weather three times. I surface-dress the trees as they require it; those trees which were potted before they were started will not depend so much upon this. Some of our trees have not been repotted for two or three years, the leaves still retain a healthy green, and excellent fruit is produced through the surface dressing. About 70° at night is a good temperature. *J. Douglas.*

ORCHARD-HOUSE.—Allusion was made two weeks ago to repotting the trees if the fruit had been gathered. It would be necessary to keep the house rather close for a few days, or perhaps for say ten days or more, as the work might not all be completed within a week; but when all the trees are potted and fresh roots are formed, more air must be admitted, and less moisture in the atmosphere is desirable. Full instructions as to repotting and the treatment required until the trees become established was given in the number for July 6. We have at intervals of two weeks continued to surface-dress our trees in pots, but when the first fruits on such sorts as Early York and Hale's Early show signs of ripening this is discontinued. In a week, even in houses where no artificial heat has been used, fruit of Early York and Hale's Early will be ripe. I may just be permitted to say what I consider the best way to gather the fruit. Peaches and Nectarines are easily injured by pressure from the fingers, especially the former, and it is simply barbarous to press the fruit at the apex to feel if it is ripe. It ripens last at the stalk, and after a little experience you can tell whether the fruit is about ripe without touching it at all: and if the cultivator cannot do this he ought to lose no time in acquiring such experience. I used to place netting or gauze under the fruit to support it if it fell, at one time, but fruit loses its flavour if it is allowed to hang until it drops. My plan now is to have flat-bottomed baskets, a layer of cotton wadding is placed at the bottom, and over it a sheet of tissue-paper; once every day I look over the trees and gather all the fruit that is ready. It is removed to a cool place, but the fruit is not removed from the baskets, as this would injure it. There it remains until it is ready for use. It will keep a week in cool weather, and longer if the baskets can be placed in an ice-house. The Pears most desirable for the orchard-house are Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne of Jersey, Beurré Hardy, and Summer Beurré d'Aremberg. Except Louise Bonne none of them will keep long after they are gathered. To have the flavour in perfection it is best to pick the fruit from the trees before it parts too readily from the stalks; it is generally ready for use about a week after it is gathered. Plums and Cherries I usually gather from the trees as they are wanted for use. When the fruit is ripening admit plenty of air, and maintain a dry atmosphere. *J. Douglas, Loxford Hall, Ilford.*

VINES.—Late houses in which Grapes have not yet finished stoning must not be allowed to range too low at night until this process is complete. Admit air early in the morning to prevent a sudden rise of temperature, and close with plenty of moisture at 80° to 85°. Muscats in their last stage of ripening will be greatly benefited by the application of sufficient fire-heat to raise the house to a temperature of 90° to 95° by day, with a free circulation of air and sufficient moisture to prevent anything approaching aridity, until they begin to lay on that delicate golden colour so much desired, but not always attained, in the finish of this noble Grape. Under the modern system of glazing with large squares and close laps we frequently see the berries of very early forced Muscats caught by the sun. Where this is liable to occur laterals should be allowed free play, and if a few squares can be removed and replaced with perforated zinc, shading need not be resorted to. If shading is considered necessary where the foliage is thin, a piece of fishing-net will be found quite sufficient to break the direct rays of the sun. Owing to the great amount of firing all through the spring and early part of the summer red-spider has been more troublesome than usual, and as full crops of Grapes cannot be expected to colour well where this pest exists, the usual remedies must be applied for its destruction. The borders must also have attention in the way of mulching, and receive copious supplies of water both inside and out; otherwise, now dry weather has set in, the roots will strike deep into the border in search of that moisture which the great demands of fruit and foliage render necessary. Houses from which the fruit has been cleared must be well washed with the engine on fine evenings, kept cool by the removal of some of the lights, and encouraged to make surface-roots by passing liberal supplies of weak liquid-manure through the mulching. Pot Vines intended for early forcing, now ripening their wood, will require more air and less moisture, but to prevent the premature ripening of the foliage water must be applied to the roots in moderation, and an occasional syringing overhead will keep them clean and healthy until the buds are properly filled up and matured. *W. Coleman, Eastnor.*

PEACHES AND NECTARINES.—In succession houses trees presenting a large surface of leaves to the full influence of the sun and now swelling off crops of fruit, if growing in properly drained borders, will require very liberal supplies of water at or a little above the temperature of each house. Syringe freely twice a day up to the time the fruit begins to show signs of ripening. Expose the fruit to the influence of the sun, and ensure colour and flavour by throwing open all the movable lights on hot, dry days. If it is found necessary to retard some of the fruit the lower parts of the trees may be shaded for a few hours each day with canvas, sufficiently elevated above the glass to admit of a free current of air between the two. Early forced trees from which the fruit has been gathered must still have attention in watering the roots in inside borders and the free use of the garden engine to keep the foliage clean and healthy until the flower-buds for next year are properly formed and ripened. Mulch both inside and external borders, and give abundance of water to trees in the late house now stoning. Keep the wood well thinned and tied-in, to ensure thorough ripening of that intended for carrying next year's crop. Syringe well both ways twice a day, and water the floors after sunset with liquid-manure or clean water over the mulching. Mark trees that require root-pruning or renovation, and have a supply of strong calcareous loam ready for use when the leaves begin to part from the trees. *W. Coleman.*

STRAWBERRIES IN POTS.—The prolonged continuance of dry weather has increased the labour of raising young plants in sufficient quantity where large numbers are required, and a good margin should be allowed for filling up blanks, if such should occur before the season is too far advanced. Layering and potting will of course occupy the attention of Strawberry growers for some time to come, the latter operation being one of extreme importance to the future well-being and development of the plants, for while the soil should be rammed firmly about their roots, care should be taken at the same time that the plants are not only in a fit state for potting, but the soil is also in a similar state (especially soils of an adhesive nature), and a thin coating of horse-droppings rubbed through the hands and scattered over the surface of the soil in the pots will assist and encourage surface-roots. As potting is proceeded with, the ground on which they are to remain for the autumn should be prepared (if there is not a permanent situation for them), by putting a layer of coal-ashes 2 inches deep over the space require, and sprinkling the surface with soot to prevent the inroad of worms. Water the plants individually with a rose as they require it till the pots are filled with roots, after which the whole stock may be watered indiscriminately through a hose-pipe with a rose attached. Our Strawberry season out-of-doors promises to be a short one; therefore, plants that were forced in pots last spring will be called upon to yield an autumn supply earlier than usual. *W. Hinds.*

PLANT HOUSES.

ORCHIDS.—Daily and diligent supervision will now need to be exercised in this department, since the majority of the spring and early summer flowering species and varieties will by this time have gone out of bloom. The flowers, too, of this section mostly appearing on growths made the previous season, it will now be the more incumbent upon all to see that all things are now favourable to the starting into growth, and the continuance in a healthy state of the breaks and bulbs as they gradually develope themselves. Doubtless one of the first essentials is the state of the atmosphere, and this must be so managed that whilst it is kept in a condition fairly moist, there must also at the same time be such a gradual and regular admission of the outer air that a heavy or stagnant feel on entering the houses at any part of the day is never perceptible. See, too, that once during the day the foliage is permitted to become moderately dry, so that any excess of damp caused by watering or dipping may be removed; for a continuously damp and shaded regimen is as much to be avoided as the opposite extreme of excessive light and dryness. The atmosphere being thus kept in a regular and satisfactory condition, attention must be bestowed upon the plants individually, and if the directions in previous Calendars as to the material in which the plants should be potted, and the other matters in connection with the crocking, potting and basketing were followed as nearly as circumstances would at the time permit, it will be quickly perceived how large a quantity of water many of the plants may now be treated to without any injurious effects upon the soil itself, and the little liability there will be for any thus treated to become soddened and sour. Where, however, bad crocking has taken place, the evils resulting therefrom will now be more apparent than at any period of the year, for a damp, sour soil speedily causes the points of the new roots to turn black, and if the plants are then shaken out a good part of the season is lost, and, as a natural consequence, the growths are less in size, the bulbs smaller, and the blooms when they appear are often not so numerous nor of so fine a character as we may have hitherto enjoyed, or have been produced in previous seasons. Still rather than wait till the resting season to shake such a plant out, it had better be done at once; wash away the sour material, cut off any dead or decaying roots, and pot afresh in loose open soil, being very particular about the crocking, that it, too, is open, and so placed that the water may quickly run away. Such plants should be placed in the most shady part of the house, giving much less water what the most of the others will receive. Fresh roots will certainly push away and breaks appear, but it requires care and patience and the exercise of a little more skill in dealing with plants thus treated than with those that start freely, and continue doing well through the whole of the season. Make it a point to go through the whole of the plants in pots at least every second day, giving water then to all that require it. Look the blocks over with the syringe twice a day, for being suspended in the air, and all around drawing the moisture from them, it is surprising how quickly some will become dry. Baskets should be examined daily, and those that are dry should be taken down and dipped in tepid water. To avoid the drip from these, presuming they hang over the tables or stages, it is better that they remain on the floor, or are suspended on the edges of the stages until the water has drained from them, after which they may be put back in their places. Such, however, as are hung over the paths should be put back as soon as they have been immersed, as the drip from those on the floors will not be in any way injurious. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, JULY 20, 1878.

APPOINTMENTS FOR THE ENSUING WEEK

TUESDAY, July 23 — Royal Horticultural Society. Meeting of the Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Oxthorpe Horticultural Society's Show. Leicester and Leicestershire Horticultural Society's Show (two days). Exhibition at Worcester (three days)

WEDNESDAY, July 24 — Loughborough Horticultural Society's Show. Roehampton Horticultural Society's Annual Show.

THURSDAY, July 25 — Royal Horticultural Society of Aberdeen Summer Show. Dresden Flora Society's Summer Show (five days).

WE are once again brought face to face with our old enemy, the POTATO DISEASE, and growers of the most popular table vegetable of modern times are trembling with fear lest the effects upon their crops should again be disastrous. Doubtless influenced and promoted by a long spell of cold rains in the early summer, and by the very heavy rain storms that fell more recently, the disease has attacked the earliest kinds with great virulence, and complaints of one-half and two-thirds diseased produce are already abundant. It has long been a favourite dogma of writers about the operations of the disease that the best safeguard was found in the early planting of early kinds, and thus securing a crop ere the fell destroyer had made its customary visitation. Late spring frosts that befell us with such strange and destructive regularity invariably presented a powerful argument against early planting, as even more dangerous than the disease itself are the effects of late severe frosts upon early planted breadths of Potatos. It was such a powerful example of the evils of Scylla on the one hand and the dangers of Charybdis on the other that growers were naturally troubled to know when, how, or what to plant that both might be avoided.

The past spring was, in respect of the entire absence of late frosts, an exceptional one—it was probably the singular exception that only proves the rule—for no Potato growths suffered from their effects, and the plant development, from its first appearance above-ground until its fullest expansion was accomplished, was at no time endangered by frost, so that all seemed *couleur de rose*, for early Potatos at least, and growers who had entire faith in the early planting of early sorts were jubilant over the promised success of their efforts to avoid the disease. Behold now the cup suddenly dashed from their lips! The first early kinds, let them have been ever so early planted, are in a sad state, and even from the warmer climes of the Channel Islands and Cornwall, where Potatos are largely grown for the Northern markets, come sad stories of diseased crops and sadly reduced profits. Should all the mid-season and late sorts suffer in the same degree that the earlier sorts have done, we shall have to bear with all the losses and ills of the most disastrous Potato season on record.

There is, however, one gleam of hope which breaks through this heavy cloud of gloom. Experience of the operations of the disease in past years has generally shown that, when one section of the Potato crop is hardly hit, another as often escapes almost altogether. In average seasons the disease has made its deadly effects most felt amongst the mid-season kinds, whilst early and late ones have suffered more or less, but generally less than more. At other times, when the fungus has made an early appearance, it has often spared the later kinds, and thus a sort of equilibrium has been maintained, so that an entire loss of crop has never resulted. In noticing this somewhat curious feature in disease visitations, we are brought face to face with what is an undoubted problem in connection with its operations, and that is, that the fungus seldom attacks any kind until it has attained to a certain stage of maturity—as if two or even twenty sorts are growing side by side it will be found that whilst the foliage of the most matured kinds is almost destroyed that of the later sorts is still fresh and vigorous without the smallest possible evidences of its effects visible.

There is further the interesting fact that the worst phase of the disease attack is generally condensed within a few weeks' space, from which it may be assumed that the active germs of the fungus are operative only during a certain period of time, which as seen this year is earlier as sometimes it is later, weather being probably the guiding instrument as to the fixing of this particular period. It need hardly be said that the hopes of Potato growers as to the safety or otherwise of these later crops hinge materially upon the state of the atmosphere during the next few weeks. A few days of cold rain and generally a low temperature may prove most destructive, as also may a period of excessive hot sunny days accompanied by heavy dews and white mists at night with occasional thunderstorms; under either conditions of weather the fungus will run riot amidst the robust luxuriant Potato foliage, and in a few days reduce breadths of bright green leafage to a blackened putrid mass. Perhaps the most acceptable weather would be that of moderate warmth and a partial prevalence of cloud, especially at night, as then the dewfall is much less. During the prevalence of hot, scorching days the foliage is seen to flag and droop, as though its vitality was being exhausted; then comes a heavy dewfall accompanied with a dense humid atmosphere; during the night the flagging leafage greedily drinks in the welcome moisture, and with it those dangerous minute spores that are the precursors of death. Fortunately for us we plant much larger breadths of late kinds than of early ones. The latter are needed to supply the wants of the passing moment, the former to tide over the long winter months till the next season's produce shall again be lifted. If, therefore, the worst results are to befall the early ones and the later ones largely to escape, the mischief will be lessened, the effects on the food of the people will not be greatly appreciable.

We can but conjecture and hope, and, if possible, learn, from what is taking place, such lessons as may be valuable for future years. It is disheartening to find that, with more than thirty years' active experience of the disease, we have either neglected to learn the lessons it was capable of teaching, or that its effects are irremediable. We shall hear again, as though the ideas were new discoveries, that we should not plant in stiff clay land; should not use manures; should be more careful in selecting, storing, and planting seed—and other advice, all good in its way, but all of which, and much more, has been put into practice time after time with results of variable kind, but in no case has it succeeded in saving the crops from the attacks of the fungus. We are watching the general features of the disease and its operations on various kinds and in various places closely, and may have something more to add to these few remarks later on, but our gleams of comfort are but cold as yet, still it is well to counsel care and patience, especially to buoy up the mind with hope that, after all, the worst will not be so bad as it might have been, and that our gloomiest fears may not be realised.

—— NEW ROSES.—Mr. TURNER sends us blooms of two of his seedling Roses, which possess considerable interest on account of their beauty. One, named HARRISON WEIR, is of a remarkably stout, vigorous constitution, the foliage being very bold and effective, with leaflets cordate in outline, shortly acuminate, strongly scented, and fully 2½ inches in breadth. The flowers are very large, deep, full, and symmetrical, of the cupped or Duke of Edinburgh type; some now before us measure fully 4 inches across, with the larger petals 2½ inches in breadth, smooth on the edge, stout in texture, and of a rich velvety crimson, very bright and dazzling on the face of the petal, and with a slight purplish-rosy tinge on the reverse. The flowers are very sweet. Altogether it is a grand Rose, with plenty of stuff in it, and that of the first quality, so that it will probably take a high place in its class. Dr. SEWELL is of a different style altogether, with more of the Xavier Olibo type. Though strong-growing, it is less so than Harrison Weir. It has very thorny stems, with leaves of an ovate and taper-pointed form. The flowers are more open, with a few very large, broad, smooth outer petals, most of them emarginate, and gradually passing into smaller petals with which the centre is filled out. The colour is a maroon-crimson, rich and satiny, irregularly breaking into bright crimson at the margin, and where the petals are involved so as to show their reverse sides, of a satiny tint of cardinal-red, paler than the face of the flower. Truly our English seedling Roses are taking a foremost position this season, showing qualities of a very high order of merit.

—— FLORAL DECORATIONS.—On the occasion of the marriage, a few days ago, of Miss BEAUFOY of South Lambeth, St. Ann's Church was profusely decorated with plants and cut flowers by Mr. J. W. CHARD, 196, Wandsworth Road, S.W. The decorations were light and graceful, very pleasing, and well adapted for the occasion.

—— ARTOCARPUS EXSCULPTA, *Hort. Bull.*—Under this provisional name Mr. BULL exhibited at the recent show at Preston a very remarkable Artocarpus, which is probably a variety of some well-known species. It has the habit and rough texture of other plants of the same genus, but is remarkable for the curious crenations of the margin, which give the leaf the appearance as if it had been stamped or punched out. It is a remarkably striking-looking plant, as may be judged from our illustration, fig. 11, p. 85.

—— NATIONAL CARNATION AND PICOTEE SOCIETY.—We understand that the show of this Society, which is to take place on Tuesday next, at South Kensington, in conjunction with the meeting of the Royal Horticultural Society, is expected to be of unusual excellence. The admirers of these charming flowers should by no means miss the treat which appears to be in store for them, if all goes well.

—— LYONS HORTICULTURAL SOCIETY.—We are requested to say that a great horticultural exhibition will be held at Lyons on September 14—17 inclusive. M. ROHNER, 60, Avenue de Noailles, is the general secretary. One hundred and sixty-five classes are noted in the programme, including the usual elements.

—— SWEET PEAS FOR CUTTING FROM.—A line of these formed of mixed colours finds a place in many gardens, because so useful to cut from. But as fine and richly-coloured flowers combined with a continuity of bloom are so desirable, the seed should be sown in deeply-dug and richly-manured ground. The soil can hardly be too good for Sweet Peas when the seeds are thickly sown; and the difference between plants grown in nutritious and in poor ground is somewhat remarkable. In the ordinary strains of Sweet Peas the light varieties, such as the White and Painted Lady, are scarcely numerous enough to lighten up the dark varieties, and, if Messrs. SUTTON & SONS' new variety, Butterfly, and the new Violet Queen of Messrs. CARTER & CO., maintain that delicacy of character claimed for them, they will give excellent additions in the way of light varieties. The Scarlet Invincible Sweet Pea and Tropæolum aduncum (Canary-flower) form a capital combination for a garden hedge, and is most effective when in full bloom. The best Sweet Peas we ever saw were sown in November. They should, if deferred till spring, always be sown early.

—— FRITILLARIA HOOKERI.—The very interesting Fritillaria Hookeri has just flowered at Kew, and the honour of its introduction there is due to Mr. H. J. ELWES. The flowers are pale lilac, and this novel colour at once takes the attention as perhaps unique

among the Lilies and Fritillarias. Next to notice is the gradual and pyramidal transition from the lowest leaf to the highest bract no more than a scale. The lower flowers appear in the axils of leaves, which considerably exceed them in length. The height of this plant is slightly over a foot; the length of the lowest leaf is 8 inches, thus being longer than described specimens. They distinguish this species from the nearly allied F. macrophylla by numbering only 6—9, and by not crowding near the base of the stem. The flowers in this case are about an inch long, not tesellated, and form a subsecund raceme. The stigma is three-cleft. This plant is described by Mr. Baker under Lilium in our "Synopsis of all the Known Lilies" (1871, p. 201), the preceding species being best known as such to cultivators; it is, however, to be preferred in Fritillaria. It was discovered by Sir Joseph Hooker in the temperate region of the Sikkim Himalayas, at an elevation above the sea-level of 9000—10,000 feet.



Fig. 11.—Artocarpus exsculpta, Hort. Bull, shown at Preston. (see p. 84.)

—— The Strawberry Farms of Perthshire.—On the Muir o' Blair, an extensive track of land lying between Blairgowrie and Coupar-Angus, Strawberries are grown on a large scale; indeed, the district may, in all fairness, be termed the Strawberry-bed of Scotland. Here there are from twenty to thirty farmers who depend on nothing else but this luscious fruit for a livelihood, some of the farms extending to many acres. The fruit is gathered as it ripens, and put into barrels capable of holding from 1 cwt. to 3 cwt., and in this way about 60 tons leave the Muir annually for the preserve works of Dundee, Glasgow, Edinburgh, Arbroath, Dumfries, and Belfast. On the seven years' growth of the plant the average value is about £25 per acre; but when it is in its third or fourth year as much as £40 or £50 may be realised from the crop. The season—which in all respects is a most favourable one—commenced properly this week, about 3 tons being sent off on Monday, and not a day has passed since without considerable quantities leaving Blairgowrie, Rosemount, and Coupar-Angus stations. Raspberries are also largely cultivated, some farmers having one or more acres; and as they are found to be even more profitable than the Strawberry, many are turning their attention to the advisability of increasing its cultivation. The correspondent who sent us the above cutting from a local paper remarks: "It is really astonishing to see the crops that are taken off ground which a few years ago was worth little or nothing."

—— Tacsonia insignis.—This splendid creeper is now blooming with great freedom at Gunnersbury House, Acton, the residence of H. J. Atkinson, Esq. It is growing in a circular house forming the middle portion of a range of plant-houses, and as this has a cupola roof there is ample space in which this Tacsonia can show itself. It is a very vigorous grower, as only a twelvemonth ago it was about 5 feet in height; but since then it has done so well as to have grown to a great height, and the shoots being trained out from the top along bars and such-like, the flowering wood is thus enabled to hang down and display its fine pale pinkish magenta flowers to the best advantage. These are borne in the form of loose racemes, some of which carry more flowers than others. The fact that it is a strong growing species suggests that it should be planted only where there is ample roof space over which to spread. As far as pruning is concerned, it is Mr. Hudson's (Mr. H. J. Atkinson's gardener) rule to cut back only the flowering-shoots to the wood of the leading branches from which they sprung.

—— Pea Criterion.—This fine new variety, one of the late Mr. John Standish's seedlings, now in the hands of Messrs. Veitch & Sons, promises to be a valuable addition to our main crop Peas. It partakes of the character of the Ne Plus Ultra, but is dwarfer, while the flavour is all that could be desired. It should displace many of an inferior type.

—— Allotment Gardens.—The recent exhibition of the Ealing, Acton, and Hanwell Horticultural Society served to illustrate in a remarkable manner the value of Allotment Gardens in the suburbs of London. The Ealing Dean allotments were con-

veyed to the parish officers of Ealing by the Bishop of LONDON and the copyholders of the manor in the year 1832, to be held in trust by them, and for the benefit of poor persons, who are enjoined to cultivate them with the spade. They are 146 in number, and average one eighth of an acre in extent, the rent charged being 5*s.* each per allotment per annum. The restrictions placed upon cultivators are but few, one of the chief being that no labour is to be done on the Sunday. This does not preclude an allotment holder from gathering vegetables, &c., on that day. In order to encourage good gardening on these allotments, the Baroness ROTHSCHILD and Mrs. WALPOLE give every year the sum of twelve guineas to be awarded in prizes for the best kept allotments, and cottage gardens can also compete provided that in the case of both the allotment holder and cottager he cultivates his own garden, works for daily wages, and does not pay more than £15 per annum for house and land. Twenty prizes are awarded, the highest being thirty shillings, and the lowest five shillings, but so numerous are the competitors that it is often found necessary to give several extra prizes. A competent jury visits the allotments from time to time, and thus are enabled to award the prizes; and to give a further stimulus to cottage gardeners other special prizes are given, to the number of eight, for the best kept flower garden, and in this class a spirited competition always ensues. The Society also offers a number of prizes for plants, flowers, fruit and vegetables at its shows, giving as many as eight prizes in a class, and the competition is not only extensive but exceedingly keen. The competitors for the above prizes must reside in either Ealing, Acton, Hanwell, or in that part of Brentford which is in the parish of Ealing.

—— KEW GARDENS.—The last edition (the 28th!) of the "Official Guide to the Royal Botanic Gardens and Pleasure Grounds, Kew," lately issued, contains the following regulation:—"The Botanic Gardens and Pleasure Grounds are open every week-day from 1 P.M. till sunset (Christmas Day alone excepted), and no person can be admitted at other hours, except for purposes of special study, by permission to be obtained on application at the Curator's office. On Sundays they are open from 2 P.M. till sunset, and on Bank Holidays from 10 A.M. till sunset." The present edition of this useful popular Guide contains a map of the pleasure grounds, with indications by which some of the principal groups, such as the Maples, the Limes, the Pines, &c., in the arboretum, may be found. As the groups in question are often wide apart, and difficult to find, this map will be a boon, and may be taken, we trust, as an earnest of future improvements in the same direction. A few indicators, or outline maps, painted on zinc, and hung about in various parts of the grounds, would be of service, especially now that the arboretum is attaining so much importance.

—— THE ROYAL HORTICULTURAL SOCIETY'S SHOW AT PRESTON.—We are glad to hear, on good authority, that although this is not likely to prove so successful from a financial point of view as was hoped might prove to be the case, it is believed that it will not result in any considerable loss—perhaps none, but until the accounts are made up, this of course cannot be accurately known. Doubtless the opening of the Winter Garden at the contiguous town of Blackpool, which was attended by the Lord Mayor of London, in state, drew away a contingent of visitors, and the unpropitious weather of the first days was unfortunate; but despite all this the admissions on Wednesday numbered 460, on Thursday 1123, on Friday 5140, on Saturday 12,320, on Sunday 520, and on Monday, an extra day thrown in with a view to help the finances, 5032: thus together making a total of 24,595. The show itself was so good, and showed so great an amount of confidence in the old Society, that we must express a hope, which we believe is generally felt, that the financial result may not prove a deterrent, and hinder the Society from making another attempt to revive the provincial shows, but that it may make another effort, which it may be hoped will be under more favourable conditions, and attended with happier results. The Preston committee worked well, but the unfortunate loss of their leader at the critical moment no doubt laid an unexpected pressure on the individual members, while it was not till the end of the week that the enthusiasm of the townspeople in support of the show, warmed up as it should have been made to do at the outset. We may take the opportunity to correct the following errors which crept into our necessarily hurried report published last week:—In p. 54, *a*, the tent should be described as a parallelogram with three "aisles," not "circles;" col. *b*, the mass of rockwork was on the bed marked "z," not "2"; col. *c*, Gleichenia "hecistophylla;" p. 55, col. *b*, Lomatia "silaifolia," not "salicifolia;" col. *c*, Dracæna "salmonea," not "Salmoni;" p. 56, col. *a*, Trichomanes radicans "dilatatum," not "delicatum;" col. *b*, Erica "opulenta," not "opulata." A few other literal errors are so obvious as not to need to be referred to here. We should also here mention, as we are very pleased to have the opportunity of doing, that Messrs. JAMES VEITCH & SONS were awarded a Gold Lindley Medal for their fine group of plants, and not simply a Gold Medal, as mentioned in our report.

—— TROPICAL RAINFALL.—A correspondent of the *Times*, writing from Hong Kong under date May 31, says:—"I have just been reading an account in your columns relative to an abnormal fall of rain in England. We in this distant tropical station may perhaps be allowed to smile when we compare 9 inches of rain in three hours, which we have just had, with the English fall of about 3½ inches in twenty-four hours. On the occasion to which I allude there was nearly 15 inches in the twenty-four hours, an amount which very few of the gauges were competent to retain for registration."

—— THE FOLIATION OF TREES.—The French have three convenient words—viz., *feuillaison*, to indicate the appearance of the leaves in spring; *défeuillaison*, their fall in autumn; and *effeuillaison*, their artificial removal, as in the case of stripping the Mulberry trees for the food of silkworms. M. DE CANDOLLE has lately been making investigations on a large number of trees with a view of ascertaining whether any definite relation exists between these phenomena. The results of the comparisons goes to show (1) that no direct and regular relation can be traced between the period when the leaves appear in spring, and that in which they fall in winter. (2.) In those species where considerable differences exist between individual plants as to the period of the appearance or the shedding of leaves, even when growing under the same conditions, it is found sometimes (Lime) that the earliest to show their leaves in spring are the latest in autumn, while in other species no such relation can be traced; whence it may be concluded that, in spite of the superficial resemblance, the internal organisation of the leaf must be different. (3.) The individual pecularities of particular trees manifest themselves constantly in different years. (4.) The complete removal of the leaves in autumn induces a late development in the following spring. (5.) The removal of the leaves from a branch in autumn produces varied consequences by reason of circumstances as yet not understood. (6.) The persistence of old leaves (as in some Beeches, Oaks) till the spring induces a late leafage.

—— THE PREMIER'S RETURN.—The remarkable feature in the ornamentation of the Charing Cross station last Tuesday was the beautiful floral display made by Mr. JOHN WILLS, of South Kensington. The base of the seats was fringed with Palms, among which Pelargoniums, Fuchsias, Phloxes, and Calceolarias were set in undulating lines, which thus gave roundness and completion to the otherwise abrupt and awkward outlines of a railway platform. The arrival platform was broken up by tall Dracænas, round the foot of which beds of Lycopodium were placed, and the Lycopods interspersed with Roses. Roses were trained up to the lamps, the posts were hung with festoons of Roses, of which some 3000 blooms were used. Palms and Ferns appeared in every place left vacant, and no fewer than 10,000 plants, many of them 20 feet high, were used to give colour and fragrance to the scene.

—— DATE AND ORIGIN OF THE DIFFERENT VARIETIES OF APPLES.—The committee of the *Herefordshire Pomona* are anxious to obtain information as to the origin of any Apples and Pears of acknowledged merit. At the present time they wish to do justice to the producers of those excellent Apples, Lord Suffield, Stirling Castle, New Northern Greening, and Tower of Glammis; and they would also be very glad to learn any particulars as to the origin and age of the Keswick and Manx Codlins, about which the usual gardening authorities are silent.

—— THORN SPORT.—In the *Monatsschrift* for June of the Horticultural Society of Berlin, there is a description of an interesting sport of a Thorn. On an exceedingly large specimen of a scarlet double-flowered variety in Grossenhain, it is stated, a large branch this year bore double white flowers. The writer asserts that he is certain it was not the result of grafting or budding, and the tree was never known to produce white flowers before. The branch in question, which was covered with flowers, is about 1½ inch diameter where it springs from the tree.

—— A SPORTIVE CARNATION.—We have just seen a seedling Carnation, one half of the plant producing dark purple self flowers borne on stout erect stems, whilst the other half produces Picotee blooms—a pure white ground very thinly laced with purple. It is also remarkable that, whilst the growth and stems of the self Carnation are erect, that of the Picotee portion are somewhat drooping, the flower-stalks lying about incapable of holding up their flowers. It is the first year of the plant's blooming. The circumstance affords proof of the singular sportiveness of plants under conditions that give no clue to the cause of the eccentricity.

—— WILD GRASSES.—A walk just now in lanes or fields may be pleasantly diversified if attention be given to the numerous and various forms of grasses that grow so freely in hedgerows or by the wayside. To gather bunches of these whilst yet in their fully developed grace and beauty would add many delights and charms to a rural excursion, whilst the discovery of every fresh kind lends additional interest to the search. It is not alone in such transient joys that the reward of industry is to be looked for, as if these bunches of grasses be carefully and slowly dried, they will prove welcome and pleasing additions to the winter ornamentation of the household. Artificially coloured grasses may be very gay and attractive, but those that are in keeping with Nature are the most tasteful.

—— THE SO-CALLED PERSIAN LILAC.—According to M. DECAISNE, the tree usually called Syringa persica should be referred to S. chinensis, of WILLDENOW, and the epithet Persian should be abandoned in favour of Chinese. The true Syringa persica has become very rare in cultivation. In spite of the appellations, the native country of the two species is still unknown. Wild specimens are not to be found in herbaria. Up to this time then the species in question are only known in a cultivated state. How odd this ignorance concerning the habitat of many cultivated plants. It is only the other day that the Horse Chestnut was found in a wild state, and even now no one has seen the Mignonette in a wild state. The so-called wild Mignonette belongs to quite a different species.

—— EIGHT-PARTED FLOWER OF EUCHARIS AMAZONICA.—It is very rare to find a four or eight parted flower among Monocotyledons, in which, as is well known, the numbers three or six prevail. Mr. WALKER, of Wood Green Nursery, Waltham Abbey, has, however, sent us a flower in which all the whorls are four-parted. Out of more than 2500 flowers this is the only one which has shown this peculiarity.

—— HORTICULTURE MILITANT.—Col. MARSHALL WILDER, of Boston, U.S., is well known to many of our readers as an enthusiastic horticulturist and an ardent promoter of many other good and noble objects. Not long since the "Ancient and Honourable Artillery Company" celebrated their 240th anniversary, so that in some things Americans are becoming venerable. Venerable also is Col. WILDER, who on this occasion celebrated his golden wedding with the corps. The Artillery Company is an offshoot from the well-known Finsbury corps, and Col. WILDER has, we believe, been a guest of that body. When Col. WILDER commanded the Boston Company, he entered into communication with the late Prince CONSORT, then Commander of the London Company, and caused him to be elected a special honorary member. In return the Prince pre-

sented Colonel WILDER with a copy of HIGHMORE'S *History of the Artillery Company*, which dates back as far as 1537. The Prince of WALES is now the Commander of this corps, and on the proposition of Colonel WILDER he has been elected, as his father was before him, an honorary member of the Boston Company. The drummer of the Boston corps has exercised his functions, it appears, for no less than sixty-eight consecutive years. We should like to know whether this long-resounding drummer is a horticulturist also. He must surely be, or he would not have lived so long. British horticulture has among its votaries many who know how to wield a sword and use a pruning-knife; indeed, our own columns have sometimes suffered from the calls of military duty, diverting the continuous flow of Amaryllis lore, and causing delay in the reply to the inquiry—What is an Amaryllid?

—— GRAFTING CARNATIONS.—A writer in the *Deutsche Gärtner-Zeitung* recommends grafting weakly and rare Carnations on Saponaria officinalis. The root is the part employed, and as the graft is buried in the earth the scion itself often roots and becomes independent of the stock. It is only profitable for rare and costly sorts, and it is more conveniently done in pots placed in a spent hotbed.

—— PRESERVING RAILWAY SLEEPERS.—According to a report in the *Indian Forester*, the most important processes in favour for railway sleepers are the pneumatic processes, with tar-oil, chloride of zinc, and sulphate of copper, and the kyanizing process, BOUCHERIE'S process being more used for telegraph poles than for sleepers. Of the above four processes the one with tar-oil is the very best; the other three are about equal to each other, and slightly inferior to the first. The choice between the four methods depend to a great extent upon the fluctuations in the price of the impregnating material.

—— A ROYAL VISIT TO SLOUGH.—On Tuesday last HER MAJESTY and Princess BEATRICE paid a visit to Mr. TURNER'S nursery at Slough. The collections of Roses, Carnations, Picotees, Verbenas, and Fuchsias, &c., were all in capital condition, and were much admired by the Royal visitors, who accepted bouquets on leaving.

—— ARTIFICIAL PRODUCTION OF INDIGO.—The object of the chemist is not only to analyse substances—pull them to pieces, so to say, to see what they are made of—but to construct them out of their elements, a more difficult task, but one of great value, as it affords a test of accuracy like the proof of a sum. Professor BAEYER, of Munich, has in this way, after years of labour, succeeded in producing indigo artificially by acting on well-based inductions.

—— THE INDIAN FOREST SERVICE.—The *Journal of Forestry* has an article on this subject, criticising the plan now in use of sending candidates for this service to Germany or France for their education, and showing how costly the process is, and how it deters working foresters from educating their sons for the profession. For our own parts, while acknowledging that we have no such systematic instruction in this country as the forest schools of Europe afford, we yet entirely agree with our contemporary, that the time is come for the establishment of such a school in this country, where the rudiments and theoretical portions of the subject could be learnt; and these acquired, the pupils might be drafted off for practical instruction to the woods of this country, and finally to the forest schools of Germany, to become acquainted with details of management which can hardly be mastered here with the resources at command. In point of fact, we sadly want a practical university, where thorough grounding in the principles of agriculture, horticulture, forestry, and the several arts and sciences therewith connected should be taught.

—— THE LINNEAN SOCIETY.—Will some one responsible for the decision lately arrived at, to close the library during the autumn, state the grounds on which so important a decision has been made and why the general body of Fellows were not consulted before so apparently retrograde a step was taken?

NOTES ON FRENCH HORTICULTURE.

CUT FLOWERS, BOUQUETS, FLORAL DECORATIONS.

To those familiar with the rich and rare wealth of floral beauty in the central avenue, Covent Garden, and the finer flower markets and florists' shops in London, Manchester, Liverpool, Glasgow, and other principal towns of Great Britain, the cut flowers and bouquets of the Halles Centrales and other flower markets and shops of Paris will prove a sudden and severe disappointment. Our own bouquets and other floral decorations have been severely criticised, and with more or less justice condemned as opposed to Nature, and incompatible with the principles or practice of true art. But the descent from Nature and Art, say from a bit of charming English landscape and the best examples of plant and flower grouping in the National Gallery to our floral decorations is far less abrupt and severe than from French scenery and the finished paintings of the Louvre to the huge concentrations and conglomerations of flowers.

I know not what it may be at other seasons, but in the month of June there seems a wonderful scarcity in Paris of all the more choice flowers. It will hardly be credited, but I did not see a bit of Gardenia, Orchid, Stephanotis, Clerodendron, Azalea, Heath, or other good stove or greenhouse flowers in any of the Parisian flower markets in June. The time of forced Lilacs, Camellias, Valley Lilies, Violets, &c., was past, and that of Roses, White Pinks, Pansies, and Mignonette had fully come. Now no doubt these flowers are beautiful in their time and place, and the little fresh Rose-buds, that look as if they were born in May and gathered before they were kissed by the summer, are remarkably fascinating as well as sweet; but one tires of the everlasting monotony of Roses, Pansies, Mignonette, and White Pinks, bunched up tightly as miniature sheaves, all of a size. The Roses of the Parisian markets are in fact unique, and, in general terms, all the same. It matters not where you go—the Place de la Madeleine, Château d'Eau, Hôtel Dieu, Place St. Sulpice, or the Halles Centrales—there are the prim bunches of the self-same Roses, of the same size, and equally tightly tied together and scant of foliage. And the Pinks are all white in Paris, at least I did not see a coloured one, and, what is more marvellous still, the market Pansies are all of one colour, a sort of dark velvety purple. The Roses are pink, and very like some of the old-fashioned small summer Roses that used to be found, and are still found, in not a few Scotch and English gardens. Hardly any of the finer perpetual and Tea Roses seem yet to have found their way to the art-flower markets or shops of Paris. The Roses themselves, in pots carefully wrapped round with sheets of thin paper, could be had in plenty, and at reasonable prices; but scarcely any of the finer Rose flowers were offered for sale in the markets or shops. For example, not a bud of Niphetos, Devoniensis, Céline Forestier, nor even Maréchal Niel could be seen. This was indeed a surprise and a disappointment to one familiar with the irresistible Rose-buds on show at the florists' shops of London. But if the bulk of the material in the flower-markets of Paris was a surprise, what shall we say of its manufacture into bouquets? Manufacture is the proper word to use for those ponderous productions, heavy with the weight of unredeemed ugliness. They seem all cast in one mould. Any difference that exists is mostly in their size and the order of the material. They might as well be made by machinery as by human hands. A huge bunch of Roses is succeeded by a ring, of two, three, or four inches broad, of White Pinks, and this again by a yet wider band of Pansies, finished with a scant fringe of commonplace foliage, with or without an additional band or a few sprigs of Mignonette. Such are the weighty beauties with which our facetious neighbours pelt and thunder out their applause at their *prima donnas* or other public favourites. Were it possible to measure our admiration by the mere weight or size of the bouquets, then assuredly the most exacting ought to be more than satisfied. But if the taste and beauty of the gift are to be taken into account, then assuredly an elegant button-hole from Covent Garden or a single Rose-bud supported by its own verdant leaf express more admiration and a higher approval than an entire barrowload of those lumps of spoilt flowers.

This is strong language, but not stronger than the facts warrant. Fancy going to the land of taste, La Belle France—the fairest and most beautiful city in the world, Paris, and hunting through most if not all its flower-markets and flower-shops for nearly two whole weeks and not finding in either, nor in the hands of the fair daughters of France, a single bouquet much if any better than that I have truly described. These bouquets seem built on the principle that mass is might. Only pile together sufficient flowers and the end must be *magnifique*. The quality of the material, however, is the most potent factor in determining the character of the mass. A galaxy of diamonds must be magnificent, but a bushel of paste imitations would be tawdry and vulgar.

The commonness of the materials of the French bouquets is a weakness, if not necessarily a fault, for it is one of the highest functions of taste to redeem the commonest things from ugliness by the touch of genius, and make them contribute to the highest artistic ends. But bouquet-making in France does not seem to have yet risen above the merest mechanical rules of piling the flowers together, keeping the surface even and the concentric lines tolerably regular. Bouquet-making seems the business of the growers and the market women at the stalls. No one with the style, taste, or standing of the Covent Garden *artistes* was seen in any of the Parisian flower markets or shops. Taste abounds in Paris—the picture galleries, the churches, the milliners' shops, the parks and gardens, even the very streets are full to overflowing with taste—but it seems to have forsaken or never to have been possessed by the bouquet maker and floral decorator. Mr. Wills has furnished a useful example to the Parisian of the art of the effective and artistic arrangement of plants, though the space at his disposal at the Exhibition is quite inadequate to do justice to his unique abilities and striking successes in this line. But could Mr. Wills and his staff of bouquetists have gone over to Paris for a couple of months or so, and have opened an English floral pavilion on the Champ de Mars, they might have effected one of the most important and peaceful art revolutions that have ever been accomplished. Mere mass, heaviness, commonplace monotony would have been dethroned from ruling longer over bouquets in France, and lightness, grace, taste, in a word true beauty, firmly established in their stead.

With the Frenchman's innate love of beauty it seems singular that even button-hole bouquets are almost unseen and unknown in Paris. True, you may occasionally meet a gentlemen with a Rose-bud or a finished button-hole in his coat. But that proves nothing to the purpose, as Paris is now completely invaded with foreigners, in the ratio probably of two of the latter to one native. The markets and florists' shops afford a better criterion of the tastes and wants of the people, and in them button-hole bouquets are conspicuous by their absence.

And yet the demand for cut flowers seems enormous, and the supply looks practically inexhaustible—basketsful, stallsful, streetsful, marketsful, shopsful in all directions; and ladies and gentlemen load themselves with the bunches and bouquets, and seem complacently satisfied. This satisfaction with flowers as they are seems the greatest difficulty in the way of improvement. An intelligent Frenchman who freely admitted the immense superiority of the bouquets and cut flowers of London, only shrugged his shoulders when it was suggested to open a flower-shop on the English model in the Champs Elysée or Rue Rivoli, and remarked that Monsieur might starve while elevating the taste and changing the fashions of his countrymen and countrywomen.

The fact is, there is nothing so conservative as fashion and art, true or false; hence, in a capital everywhere scarred and marred by the traces of such sudden, frequent, and great political changes, it might probably take half a century to change the style of floral bouquets; and yet changes must come. Were I a younger man I should like to try the experiment of an English florist's style and material in Paris. More and better in the way of taste might also be made out of the poorest material. The lumps might be broken up into something approaching sparks, rays, or sprays of beauty. One-third of the flowers now employed in bouquet-making and room decoration would produce a much more artistic effect. If mass is might, and may at times dazzle by its mere magnitude, it is ever in danger of landing us in vulgarity. The men or the women who pride themselves chiefly in the number and cost of the flowers with which they affect to grace but not seldom cumber

their feasts, may be exceedingly rich, but lack the higher charm of true refinement and real nobility. Charity covers a multitude of sins, but quantity can never conceal the want of quality, nor hide the more serious lack of taste.

If bouquets and floral decorations are deficient in the latter in France, as I contend they are, this can only arise from delegating the work to the wrong hands. Who that has walked with glowing admiration through the French half of the Exhibition and admired the displays of genius, inspired by the perception and love of beauty as seen in the exquisite designs and workmanship of their lace, tapestries, silks, bronze, glass, to quote no more, but must feel that a mere tithe of the same delicacy and lightness of touch applied to flowers would make the French the first and best bouquetists in the world.

It must also be admitted that the dog-days are not the best season for choice flowers. Doubtless in the early spring, when white Lilac, Valley Lilies, Violets, Camellias, Hyacinths, Spiræas, &c., crowd the markets, the bouquets are more beautiful than now. Credit must also be given for the liberal use in the Halles Centrales and other markets of mere wild umbelliferous and other flowers that would be regarded as weeds in England. But the large massing up or piling together ruins all, and a lighter touch, more variety, less material and formality, and last, but by no means least, wider fringes for Maidenhair Ferns, are essentially needful to raise the French bouquets of the day from the low level of commonplace to the higher plane of true art. *D. T. Fish.*

Home Correspondence.

Spiræa palmata.—Among the many herbaceous plants now blooming this lovely Spiræa is the most attractive, the rich crimson-purple of its fine corymbs of flowers rendering it an object of great beauty. Considering the time that has elapsed since it was first sent out, the wonder is that it is not more generally known and cultivated, as it is really one of those good things that no one can fail to admire. Although it will succeed in almost any soil and situation, it is like most of the Spiræas, fond of moisture, as is evidenced by the splendid condition of the plants this season, the heavy rainfall having exactly suited their requirements, and caused them to come more vigorous and healthy than I ever remember to have seen them before. Not only is it a grand plant for the herbaceous or shrubbery border, but it is likewise a first-class thing for forcing, a few pots of it going far to give quite a distinctive feature to any greenhouse or conservatory in which they may be used. The best way of growing it for this purpose is to plant it out in rich soil in some convenient spot where it can be well attended to with water during the summer, that being the time to assist it in forming and developing the full pot crowns from which the flowers are produced. Restricted to the limited area of a pot they invariably become starved and poor compared with such as have more liberal treatment and an abundance of root-moisture to suit their half aquatic nature. The finest plants we have of it here are growing in a deep greasy sand, where they get partial shade from trees, and on these the flowers last longer and are more highly coloured than those produced by others more fully exposed. In planting this and other varieties of Spiræas a fine effect may be produced by grouping them together according to height and habit, S. japonica or S. Filipendula flore-pleno coming in admirably for the foreground, and such as S. Aruncus for the back. Brought into juxtaposition in this way they help to show each other up, and are far more interesting than when grown as isolated specimens, except, it may be, in herbaceous borders, where single plants look best. The readiest mode of increasing S. palmata is by division, which may be done at any time during winter or early spiring; the latter time being the most suitable, as then the wounded part quickly heals over on the commencement of growth, and there is not so much risk of losing them through decay, which is apt to take place if the plants are interfered with before. *J. S.*

The Horse Chestnut.—There was a slight printer's error in my notes on this tree, and I am obliged to Mr. Divers for calling my attention to it. I did not intend to say that cows would not eat the fruit unless the bitterness of the nut were removed. The word "they" was printed instead of "sheep," it being a well-known fact that the last named animals will not eat them unprepared. I have been very much interested in Mr. Webster's researches, and mean to get a branch as soon as I can, and pare it down to find the hoof with nails. The following is a recipe for decoction of Horse Chestnut, said to be very valuable as a tonic and febrifuge: Bark of the tree four ounces, water two pints; boil and repeat the operation a second time with the same quantity of water; strain the two boiling liquors and reduce to one pint by evaporation, then add one ounce of white sugar. Dose, a cupful once a day. The febrifuge principle of the bark is called "Esculine." *Helen E. Watney, Liss, Hants.*

The Madresfield Court Vine at the Garston Vineyard.—In a recent number of the *Gardeners' Chronicle* I noticed the estimation in which this Grape is said to be held by Mr. Cowan. No one can say too much in favour of this noble Grape, which occupies a whole house at Garston. The house is a lean-to, and is 60 feet long by 16 feet wide. The border was originally made and intended to be all inside, so as to be able to give the Vine the special treatment its peculiarities was said to require. Mr. Cowan has extended the border both inside and out with marked success, and in addition the tops are being extended into an adjoining house, which was formerly an early Peach-house; but Mr. Cowan has such a high opinion of the Madresfield Court Grape that he has sacrificed the Peach trees to make room for the extension of his favourite Vine. The Vine, as I have said, occupies a whole house, and will soon fill a second, and is fruited on the "short spur," not on the long rod, as is erroneously assumed by some people. The bunches are long and tapering, and the berries are of unusual size, considering that the Vine is carrying two respectable crops. If there is any fault to be found with the appearance of this Grape it is in the deficiency of the shoulder in not bearing a relative proportion to the size and length of the bunch. Notwithstanding this there are some splendidly shaped bunches at Garston. Now, as to the peculiarities of this Vine every one knows that it is "addicted to cracking," and Mr. Cowan owes his success in the cultivation of the Grape mainly to the fact that he has special facilities open to him by which he can obviate this difficulty. After the Grapes begin to colour water is withheld from the border inside and the atmosperic conditions of the house are also nicely guaged; provision is also made for protecting the outside border in case of wet weather—a contingency that is rather improbable before early Grapes are disposed of. There is a large stock of young Vines from eyes at Garston for fruiting in pots and for planting, the condition of which would do credit to a Meredith in his palmiest days. Mr. Cowan has devoted considerable personal attention to his young Vines, and the result is alike creditable and highly satisfactory. *W. Hinds.*

—— In answer to "Subscriber's" enquiry at p. 832, in reference to the cracking of this fine highly flavoured Grape, and which I think is generally admitted to have a tendency to crack, I would say that in my judgment the best way to prevent its doing so is to ventilate early and somewhat freely, and crop heavily. Some five years ago I cropped a cane of this Grape very heavily—so heavily indeed that some of my brother gardeners who saw the Vine considered they would never ripen, which however, they did, and to my entire satisfaction, without showing the slightest symptom of cracking. Last year I did not crop so heavily—the object in view being to obtain larger bunches, as in previous years. The bunches were thinned well out, and the berries promised to be of an enormous size, but just as they were beginning to colour they showed symptoms of cracking, when I had the house kept drier and ventilated more freely, and with tolerable success. This year, in the early house—just before the berries began to colour—I made a cut nearly half-through the shoots on which the bunches were, between the bunch and the joint preceding it, and through which wound the surplus sap could flow—acting as a kind of tap to carry off the superabundance—which without a doubt is the cause of the Madresfield Court Grapes cracking, all other points being properly attended to—and with the desired result. *H. W. Ward, Longford Castle, Salisbury.*

Berberis Darwinii as a Hedge Plant.—At p. 827 of the *Gardeners' Chronicle* Mr. C. Penford writes of the suitability of the Berberis Darwinii for a hedge plant, and the richness and grandeur of his hedges in spring when in flower. Would Mr. Penford kindly state at what time of year he cuts his hedges, and what is the mode adopted, for on this a great deal of the flowering of this plant depends. One plant of the B. Darwinii I have growing on a wall, that has to be cut to keep it close to the wall, only gives a very small show of flowers, compared with those growing in the shrubbery that are allowed to grow as Nature directs them; it is on these that the grandest show is to be seen. I had a Berberis hedge under my charge once. About one-third of the plants in it were of B. Darwinii, the other was a more slender-growing variety, the flowers single and paler yellow than Darwinii, and though there was always a good sprinkling of flowers on both plants yet there was not enough to give any one the idea of a wall of gold. The cutting of this hedge deprived it of many flowers; had it occupied a position where no cutting would be required, such as the edge of a wood or shrubbery, then there would have been the full amount of flower, but in such a position it would not be a hedge. That the B. Darwinii is the most compact and suitable to form a hedge of any of the family no one will doubt, but to ensure that it will flower so abundantly under hedge treatment after the hedge is fully grown, it will require to be cut at a different time and in a different way from what hedges usually are. Lines of this or any other flowering plant may occupy positions where there is no necessity for hard clipping or clipping of any kind; but then this would not be a hedge in the sense of the word. It is entirely against Nature to cut any plant at the time and in the manner hedges usually are cut, and expect it to produce many flowers. Many fine shrubs on walls are almost without flowers from having all the flowering-wood cut off in winter, when the nailing and pruning of wall-plants are usually done. Berberis, Ceanothus, Escallonia, and Ribes, are examples of this. If they are to get cutting or pruning, it should be done when their flowering is just past. More attention to this on the part of the cultivator would give a greater abundance of flowers than are usually seen on such plants. *P. Graham, Laysweod.*

Plantago major.—It may interest your readers to know the measurements of some specimens of the common Plantain (Plantago major) that I gathered on the borders of a cornfield near Folkestone on July 13. I took home four of the largest spikes. The length of the largest, taken from the point at which it sprung from the ground, was 26½ inches, the length of the inflorescence 14½ inches, the circumference of the stem ¾ inch, and that of the inflorescence in its thickest part was 1¼ inch. The smallest of my four specimens was 20½ inches in height, and the inflorescence 11½ inches long. They were all firm, well-developed specimens, not at all "drawn," as might have been expected from their great length. They were all of about the same circumference, ranging from ¾ inch to 1½ inch. *E. T. M.*

Fungus on Roots.—From a close observation of this and other parasitic fungi frequently found on the leaves of plants, I am of opinion that in the majority of cases the affection arises from the root, and I am the more convinced of this from the trouble I have had with the soil forming many of our borders, in which mycelium had spread to such an extent that I have had to take the whole of it out, and replace it with fresh, and although this has been done for more than a year the Peach trees and Vines are still showing the injurious effect it has had on them. The loam forming these borders was a top spit taken from the park, and had a good deal of fibre and other undecomposed vegetable matter, such as short grass and moss, on the surface, and as the turf was used fresh and dry seasons followed, the vegetable portions of the soil, instead of rotting, generated fungus, which fastened itself to the roots of the trees in such a manner as to form a perfect network under the bark. Till this took place no Vines or Peach trees could be healthier or more vigorous, as many can testify who knew and visited this place a few years back, but instead of keeping up to the standard attained they flagged under bright sunshine and failed to afford the crops we had been accustomed to get. Not only have fruit trees suffered from these fungoid attacks at the roots, but many young valuable Coniferæ have been lost here from the same cause, and others at the present time are dragging out a miserable existence, although they are not looking nearly so bad this season as last, which improvement is due to the heavy rainfall we have had, so saturating the ground as to destroy the greater portion of the parasite that had fastened itself on their vitals. With this I send you some leaves of the Peaches affected, that you may see the different stages of the disease and the form it takes; but when more fully developed, the pustules on the under-sides exude a snuff-like dust, which viewed through a microscope has the appearance of small grains of seed. You will observe that during the earlier stages, or when it first shows itself, that it is entirely between the tissues; and this made it clear to me that it must have its origin below, where on making an examination of the soil I soon found that such was the case. Excepting from the action of cold or a vitiated air, such as occurs near cities or towns, it is very rare indeed, if ever, that their leaves are affected; and if we would have healthy plants, we must see that the supply of food is not poisoned, or it is obvious that they, like ourselves, must suffer throughout their entire system, which at once becomes disorganised in the same way that ours would. As regards the Pear-leaf fungus, if you will examine closely you will see that it appears just in the same way as that on the Peach-leaves sent, which is exactly between the tissues, and the under-portion being the weakest and most tender it developes itself there. I have seen a great many Pear trees growing in different parts of the country, but where the soil is deep and cool, and of a nature suited to their requirements, I have never yet found any affected with this fungus growth on the foliage. If it be an atmospheric affair, how comes it that there is this exemption, and that

we only find it in gardens that are naturally dry, or amongst trees that have a good deal of undecomposed manurial matter worked in about them? Some years since I had a great number of pyramids that had been planted where some old Asparagus beds had been destroyed, the roots from which left in the ground soon told a tale, as round the collars of the trees, issuing from the bark, sprang minute Mushrooms, while the leaves and fruits were spotted to such a degree that it was apparent something must be done if they were to be rendered of any future use. Trenching was at once decided on, and this was carried nearly a yard deep; and, as the work went on, heavy dressings of clay were mixed in, the result of which is that the trees are now all what can be wished. On a west wall, however, we have some trees of a great age, which till the dry summers we have had of late were always healthy, but which last year were as badly affected with leaf-fungus as any I ever saw. This was particularly the case where some beds of preserving grow it in their hedges. They have an idea that it is baneful to corn. I believe that Sir J. Banks and others supposed that the Æcidium berberidis fungus infesting this shrub generated the dust which gave rise to the Puccinia, which is called "rust" when it appears on growing corn; and so the Barberry has in agricultural districts acquired a bad reputation. No farmer in Hants or Sussex likes to cultivate it. I was much amused once when at a farmhouse by seeing the fowls stand on tiptoe to pick the fruit of one of these shrubs on the lawn, and when they had cleared the lower branches hop high from the ground to reach others. The lady called it "the Pipperidge bush," but said she must cut it down, as they were going to grow Wheat in the field next the house the following year. *Helen E. Watney.*

Arums in Flower in July.—Most of our Arums are standing round a tank of water, and have had a liberal supply. The result—they are blooming freely,



Fig. 12.—Pernettya ciliaris.

Strawberries stood near and helped to rob the soil of its moisture, and where no doubt strawy manure had been used before planting. Anyhow an examination of the border soon showed where the mischief lay; owing to press of work we have not yet been able to break up the ground and give them a little fresh loam, but as soon as we can do this I am confident that the leaves will, after a season or so, assume a healthy look, and be free from all warty excresences. Young trees on the same wall that have been recently transplanted in fresh soil have their foliage without spots, although they are directly between those already alluded to; and it is evident, therefore, that if the fungi were propagated and spread by means of spores falling about or carried by the wind, that these trees would not have escaped. *J. S.* [The Pear-leaves were affected with a minute mite, not a fungus. Eds.]

Berberis *v.* Wheat.—If the Berberis Darwinii bears the same character as the Berberis vulgaris it will be long before the farmers can be induced to but, like Mr. Shirley Hibberd's, the flowers are much smaller than those produced in winter, spring, or summer under glass. I do not, however, attribute this to weakness but to heat. Try to grow an Arum under glass in a temperature of 85° or 90°, and note the result. Leaves and flowers would be as small as they are now in the open air. The Arum, in fact, does not like hard forcing, and the flowers and leaves are the finest in a temperature of from 45° to 55°. Such has at least been my experience. *Apropos* of those smaller summer flowers it may be added that they are more useful for decorative purposes than the finer ones. It needs tall, somewhat massive vases to do justice, that is, form a suitable base for fine flowers of this grandest of all our old common plants for choice decorative effects. Arums with their own or Caladium leaves are perfect; Fern leaves are altogether out of place. Such long and rather narrow-leaved Caladiums as picturatum and Belleymei are admirably adapted for association with the flowers of the Calla. One of the novelties of the Parisian flower markets in the middle of June consisted of numbers of plants of the variegated-leaved variety flowering freely in 8-inch pots. I did not see any of the plain-leaved or common Calla in the markets, and it would appear as if the variegated sort, not very common in England, were chiefly used in France for summer flowering. The plants were fresh and healthy, as if they had just come into bloom, and the flowers were of the normal size, which is generally considerably smaller than the plain-leaved sort. The variegated variety is worth growing for its leaves alone, the white splashes and lines on the dark green ground being rich and striking. *D. T. Fish.*

Pernettya ciliaris [fig. 12].—We send you in a box per post two branchlets of this beautiful flowering shrub, which we think deserves to be given in your pages by the pencil of your artist. The beauty of its pure white bell-shaped flowers surpasses even that of the Lily of the Valley. It was in spring in full flower in one of our greenhouses, and some of the plants were a perfect mass of bloom. Though growing under glass it is quite hardy, the natural time for flowering being April and May; at any rate it would prove quite hardy against a wall. We believe it has not been often seen in flower—indeed, several nurserymen and gardeners have admitted to us that they never saw it flowered before, but we will be glad to hear from any of your correspondents, through your columns, how it behaves under their treatment. *R. & A. Morrison, The Nurseries, Elgin, N.B.* [Pernettya ciliaris of Don, D.C. *Prod.* vii., 587, seems to have dropped out of cultivation. It is a native of Mexico, and was figured in the fruiting state in the *Journal of the Horticultural Society*, vi., 268. It was originally introduced by Messrs. Veitch, and was found by them to be hardy at their nurseries at Combe Wood, where possibly it may still be found. Eds.]

Flower Sermons.—Flower sermons, inaugurated, I believe, by the universally popular Dean Stanley, are becoming more general each season. I lately had the pleasure of listening to one, delivered to children in the Congregational Church, Anerley, by the Rev. J. Halsey. A preliminary circular begged all attending the service to bring flowers with them, which were the same evening forwarded to the nurses of St. Thomas' Hospital for distribution among the patients. The text chosen for the occasion was the trite one—"All flesh is grass," but the similes and figures drawn from it were fresh and interesting, and well comprehended, if the intelligent expressions of the children's faces were a true index to their minds. As an instance of the vast difference to be found in plants of the same species two grasses were exhibited—a very long Bamboo-cane and a handful of the grasses growing close to the church. The individual bouquets were not, I must confess, put together with much taste or artistic discrimination, quantity and brilliant hues appeared most sought after, but the centre of the church around the pulpit was most chastely arranged. Raised on a semi-circular stand the plants were placed in tiers, colour being provided by Roses and scarlet Pelargoniums only, while elegance and grace, coolness, and repose were found in the ever refreshing masses of green foliage. Cycads, Palms, Indiarubber plants, and Ferns formed a basis of operations, out of which was raised a floral decoration at once rich, pleasing, and appropriate. The very name of sermon is apt to impress us with an idea of a dry lecture, a verbal castigation for our faults to which we would rather not listen; the very notion appals young children, but to disabuse their minds of such a prejudice it is only necessary to let the first discourse they hear from the pulpit be a flower sermon, then instead of avoiding they will desire to go to church; their belief in a beneficent Creator must be greater when they have seen and studied, if only for a time, the glory of His works. *T. S. J.*

The Duke of Buccleuch Grape.—How often will "Amateur" have to reiterate his wonderful story about this Grape to convince your readers that with him it has proved a veritable success? I have noted the nearly self-same statement from him three or four times within the past twelvemonths, and I venture to say he might continue till Doomsday without being any nearer the mark if he can furnish no better evidence than he has done in the past. What a pity such an illustrious name requires to be bolstered up by such miserable reports. It has been planted with him for five years, and during that time he only records a product of seven bunches with "berries equal to Black Hamburghs in size and plumpness." I need hardly say he has only chronicled a most significant failure. It is lucky for "Amateur" that he is an amateur, and thus has only his own whims and fancies to please, because no gardener who has either to keep up a supply for family use or make a livelihood from it, could afford to grow Grapes upon his principle. It so happens that I have charge of a vinery which was planted in the spring of 1873. I am this season taking eight bunches from most of the rods, last year I took six, and in the previous years just what I thought was in proportion to the age and

strength of the Vines, yet they are every year improving in vigour and appearance. When planting this house I got a fruiting cane of the Duke, but it produced nothing and grew little. The following year I inarched it upon Burchard's Prince, a rank-growing variety, but although the connection was complete it refused to grow when severed from the parent plant. I have still a plant in a pot which I struck from an eye, but it can scarcely be said to "live—it only exists." I have watched most attentively the progress of this discussion since its commencement, but had not intended to take any part therein, and have only been goaded on to it by "Amateur's" persistence. Just let me say one word about the Madresfield Court Grape. It must be very soothing to the mind of the raiser to find it rising so much in general estimation after all the obloquy that has been cast upon it since its introduction. I planted it five years ago in the house I have just noticed as a fruiting cane, when it promised so well I retained it in its place, and ever since I have reason to rejoice I did so. I have eight as fine bunches upon it as need be wished for; they are just at the trying period, and it may be too soon to "holler," but past experience leads me to expect it will pull through most creditably, as I have never been annoyed with split berries since the first year, when some of them went wrong. I see "Subscriber" in enquiry column seeking a preventive to this. My reply is to crop heavier than most other sorts (there is never any scarcity of bunches showing upon this Vine), and water none after it begins to show the least tinge of colour. *Scotia.*

Glaux maritima.—Will you kindly name the enclosed plant; it grows on the sea-shore, and is used in infusion by the country people as a remedy for eruptions or irritation of the skin. They call it "Scurvy of the sea," but I cannot find any such name in my books on plants, whether garden or wild. *Guernsey.* [The plant is Glaux maritima, but we are not aware of its "virtues." Eds.]

Crowning the Rosiere.—During summer, in all, or almost all the villages of France, a *fête* somewhat resembling in character the old English celebration of May-day is still popular; it is called the "Crowning of the Rosière," and is in effect the placing of a wreath of Roses upon the head of some young girl chosen, not, as we may infer from Tennyson's poems was the case in England, for her youth and beauty, but for her virtues. Nor is the reward merely flattering, it is substantial as well—the fair Rosière is the queen of a day, who bears away, not only the temporary crown of flowers but also a large purse: this latter being as a rule the gift of the lord of the manor. In different districts different customs prevail; but the rule appears to be, that she who combines the greatest number of virtues shall be the recipient of the crown awarded, generally by the municipal council and always publicly. In one place La Rosière must not marry for twelvemonths after her coronation, in others she has to choose a husband the moment the ceremony is over. Last week two of these interesting ceremonies took place in the environs of Paris. At Montreuil the fair Rosière, after being crowned, makes choice of a husband; it is scarcely necessary to say she finds but little difficulty in this; she is then accompanied by her *fiancé*, and proceeds to the Mairie, where the civil marriage is performed, after which she is led to the church, where the religious ceremony is enacted, and the bride is presented by the Mayor with the purse, the gift of a farmer who first bestowed it in 1852. At Enghien the purse founded by the Marquis de la Coussaye contains 1329 francs; it is this year awarded to Mdlle. Maria Prévost, god-daughter of the Préfect of the Seine-et-Oise, who in full official costume had the pleasure of presenting the reward. Every village is of course *en fête* for the occasion, and flowers and ribbons, with all the other *et cæteras* of village decoration, are employed with that regard to artistic taste and profusion so characteristic of the people of France. *T. S. J.*

The Late Rose Show at the Crystal Palace.—In reply to the charges contained in your report of the National Rose Society exhibition held at the Crystal Palace on June 29, we beg to state (1) That we are in no way answerable for the reception which any member of the Press (according to your account) met with at the hands of the Crystal Palace authorities, one of us having a week before spoken to the secretary, and been assured that they would be admitted, as on their own Rose Show, without any difficulty. (2.) That every member who had paid his subscription received his tickets—the instructions being given by the executive committee to the hon. treasurer that they were not to be sent unless it was paid. In the case of the gentleman alluded to, we have a letter now before us from him, dated July 6, asking about the accounts, so that clearly he has not paid. [We should have thought the fact of his being the donor of a special prize would have entitled him to some consideration. Eds.] (3.) That the subject of re-admission was taken into consideration, and the Crystal Palace authorities asked to sanction it; their reply was, it was the rule of the Palace not to re-admit without repayment, and that they could not break through it; and the only relaxation of the rule we could obtain was to get tickets for the assistants of exhibitors to return at half-past 5 o'clock, and these when applied for were granted. We have only to add that all the reporters of the gardening papers do not seem to have met with the difficulty yours did. [Three out of four representatives of the gardening journals, and the gentleman who represented the French *Journal des Roses*, experienced the inconveniences that our reporter complained of. Eds.] *H. Honywood D'Ombrain, Edward Mawley, Hon. Secs.*

Birds in the Belfry: Between Two Fires.—Had the genial writer at p. 7 left out the sparrow, I, as a practical cultivator, responsible for the continuous supply of a largish family, would have held my peace. It is hard, however, to do so when the sparrow is included amid the gardener's list of friends. He has no enemy, exclaims "T. G.," but the cat. Indeed! Does the writer mean to say that we, who sorely against our wills are compelled to kill the sparrow to save our Peas, have cat-like cruel natures? I enclose you a fair sample of the sparrow's doings among our Peas. And that is how he would serve the lot if not kept in check. "No enemy but the cat," what about the cooks, were these shells sent in instead of juicy green Peas? These rhapsodies on birds are worse than the most extravagant rhapsodies on Roses. The latter harm no one much, and give enthusiasts much pleasure. The former often do much harm to a most deserving class of men—gentlemen's gardeners. The praise of birds not seldom brings serious trouble and blame to them. Not seldom gardeners are placed between two fires; one is sentiment, the other fact. And these two are as opposite as the master and mistress I first served. The former was determined that his vineries should grow nothing but Grapes, his Peach-houses nothing but Peaches. Some semi-mad doctor had persuaded him that the exhalations and excretions of all other plants were poison to these two, his favourites: hence his stringent orders for their exclusion. The latter, his sister, was equally determined that vineries and Peach-houses should be furnished with flower plants; hence boxes of bulbs and seeds from the Cape, India, Australia, and gifts of plants from Land's End to John o' Groats, poured in, and the contest was fierce and strong until the houses were crammed. Only the initiated can imagine what a potent power sentiment has in the management of most gardens. That sentiment often takes a bird direction; when it does, the order to destroy no birds goes forth in truly Mede and Persian law fashion. Meanwhile, few things are more prosaic or matter-of-fact than the demands on private gardens; everything must be had in plenty in its season, from the Pine-apple in the stove to the humblest herb and fruit: hungry birds meanwhile must be fed, as they must not be removed. The result is, every crop is injured, not a few wholly destroyed; and the gardener, failing through no fault of his to supply the wants of the family, first loses character, and finally place. And so ends not a few bird rhapsodies. I admire the writer's sentiment—it is very genial, gossiping, pleasing; only let me beg of him to keep his sparrows in the belfry. The more of them there, if built in, all the better—the fewer in the garden; and I should be glad to supply him with a thousand, and the blackbirds and thrushes to keep the sparrows company, or to furnish the owl's kitchen and larder abundantly. Our fruit crops and vegetables would feel the benefit of their speedy disestablishment from their gardens, in which one's life almost becomes intolerable in dry weather through the maintenance of a perpetual warfare with feathered friends and foes. Swifts, owls, starlings, are all very well, though the latter play terrible havoc with thatched buildings, and their terrible chatter in the early morning is no joke to tired and weary men, who want to sleep at least till 5 A.M.; but sparrows in the garden in any considerable numbers are quite unbearable, and blackbirds and thrushes in scores, hundreds, thousands, drive gardeners to despair, if not actual madness. Net them out! Sheer sentiment. Unless you have nets of steel wire it is hopeless. As well attempt to sweep the ocean waves from covering the shingle with a birch-broom, as effectually protect the crops of the garden from flying hosts of hungry birds with the ordinary nettings employed for those purposes. Nets at a penny or so a square yard are simply a mockery, a delusion, and a snare. *D. T. Fish.*

Lime Trees.—One of the most pleasing features in and around the district of Dulwich, Norwood, &c., are the splendid specimens of Lime trees, at present (July 15) in full flower. Always beautiful, the Lime is exceptionally so when in full bloom, the air is loaded with the delicious odour exhaled from the myriad pendent pale green bunches of flowers which hang beneath the leaves and almost hide the ample foliage from an upward glance. One remarkable feature in reference to these trees is the total absence of bees: I could not catch the drowsy hum of these busy workers about any one specimen—a fact the more noteworthy as I retain a vivid recollection of a North-country village where the ancient churchyard was rendered umbrageous by some magnificent Lime trees, whose countless blossoms were the resort of such a number of bees that their soothing hum was perfectly audible during service, and seemed to have a most somnolescent effect, if I may judge by the number of persons who slept peacefully through the delivery of the gentle admonitions of the genial Rector. *T. S. J.*

Reports of Societies.

Torbay Horticultural: *July* 2.—Nothing can be more out of place at a flower show than a pitiless wet day, a thick rain falling out of low heavy clouds without intermission; but this was, unfortunately, the accompaniment of the above exhibition. It was the more to be regretted because it was a really good show, comprising some features of unusual merit and many of great interest. Towards evening the weather cleared a little, but too late to convert a disaster into a success. The tents were pitched in the grounds of Apsley House, the residence of the Rev. W. B. Davies, which is almost in the heart of the town. There were four tents in all, the largest being filled with plants. If the contents here could have been arranged with a little taste and judgment this tent would have been an excellent show in itself. Foremost was a splendid collection of eighteen stove and greenhouse plants, staged by Messrs. Lucombe, Pince & Co., nurserymen, Exeter, in the class for nurserymen, and to which the 1st prize was awarded. This comprised the following flowering plants:—Allamanda Hendersoni, A. nobilis, A. grandiflora, Ixora Colei and I. Dixiana, Dipladenia amabilis, Dasylirion gracile, Darwinia tulipifera, and Eucharis amazonica. Of foliaged plants Croton Disraeli, a splendid piece; C. Johannis, very fine; C. volutus, a great novelty, but somewhat too formal in appearance to make a good exhibition plant; Cycas revoluta, Maranta illustris, Geonoma Seemanni, Gleichenia dicarpa, Nepenthes phyllamphora, and Dicksonia squarrosa; 2d, Mr. W. B. Smale, Torquay Nurseries. In the class for twelve stove and greenhouse plants open to amateurs there was a very keen competition, the 1st prize going to G. Tanner, Esq., Paignton (Mr. Burridge, gr.), who had a good lot, consisting of Dipladenia amabilis, Allamanda nobilis, A. Hendersoni, Vinca oculata, Erica Candolleana, Croton interruptus, Latania borbonica, Caladium Veitchii, very fine; Croton variegatus, very good; C. Weismanni, and Alocasia macrorhiza variegata; 2d, T. Perkins, Esq., Exeter (Mr. Prowse, gr.). There were several smaller classes for stove and greenhouse plants, but while they materially helped the show they did not contain subjects calling for special remark. In the class for nine Coleus, competing for a silver cup given by C. Richardson, Esq., Madame Singer, Paignton (Mr. Ormstone, gr.), staged a group of plants that perhaps had never before been excelled for size and superb finish; they were rare examples of high-class cultivation, grown in bush shape, averaging 4 to 5 feet through, and 4 feet in height. 2d, G. Tanner, Esq., Paignton, with some remarkably good plants. Another striking feature was the tuberous-rooted Begonias, which were represented by large and extremely well grown and flowered plants, making admirable exhibition subjects. A. R. Hunt, Esq., was 1st, and the Misses Carew 2d. Vesuvius appears to be an excellent exhibition variety. The six Achimenes in class 9, from W. Gillon, Esq., Torquay, were so admirably done that they were specially Highly Commended by the judges, in addition to receiving the 1st prize. They were robust without being drawn, clean and fresh, well coloured in the matter of varieties, and grandly flowered. Our gardening friends in the West of England are able to turn out some things in rare style. It is impossible to give full details in a limited space; suffice it to say that Balsams, Fuchsias, Pelargoniums of all kinds (the variegated varieties well done), Caladiums, exotic and hardy Ferns, &c., were numerous and generally good. Roses are always a feature at Torquay, and some good prizes brought an excellent display. Messrs. Curtis, Sandford & Co., nurserymen, Torquay, were 1st with seventy-two varieties, staging some capital flowers; 2d, Mr. Geo. Cooling, Bath. Messrs. Curtis & Co. were also 1st with forty-eight varieties; three trusses of each, and the same number one truss of each; Mr. Cooling being 1st with twenty-four varieties, three trusses of each. In several minor classes these well-known firms gained prizes. In the amateurs' classes the leading prize was a silver cup for forty-eight varieties, one truss of each, which was won by Thomas Jowitt, Esq., the Old Weir, Hereford, who staged some superb flowers. Mr. Jowitt was also 1st in several other classes; and Messrs. Beechey, Peppin, Meade, Tomlinson, and others were well to the fore. The show of fruit was not large, but, on the whole, creditable to the neighbourhood. The best six dishes came from H. For-

tescue, Esq. The best white and black Grapes came from Madame Singer. In the classes for vegetables, the best collections of twelve and six varieties came from Madame Singer, very good lots indeed. Collections of wild flowers were a very pleasing feature, and many other subjects were equally good.

Wimbledon and District Horticultural: *July 2 and* 3.—The annual exhibition of this Society was held at Wimbledon House, the residence Sir W. Peeke, Bart., M.P., whose well-kept garden and greenhouses were opened to the public, who largely availed themselves of the privilege accorded. Stove and greenhouse plants were shown in mixed collections of flowering and fine-leaved subjects. For six Mr. Smith, gr. to J. C. Joad, Esq., Oakfield, Wimbledon, stood 1st, his best plants being Cattleya Warneri, nicely flowered; and Clerodendron Balfourianum; Mr. Moorman, gr. to the Misses Christy, was 2d, showing, amongst others, a very fine and well-bloomed specimen of Bougainvillea glabra, and an equally well done Statice profusa. For four stove and greenhouse plants, Mr. Bentley, gr. to Sir T. Gabriel, Wimbledon, was 1st, and Mr. J. Lyne 2d: both exhibing medium sized specimens. Ferns were forthcoming in fresh, healthy condition, and consisted principally of comparatively small-growing species. Mr. Bentley was 1st with pretty evenly grown plants, the best of which were Davallia Mooreana, Adiantuum trapeziforme, and A. farleyense; Mr. Smith was 2d. For four Ferns Mr. Lyne was 1st, showing in his group a beautiful specimen of Polypodium appendiculatum, one of the handsomest of small growing Ferns, and a fine Todea pellucida; Mr. D. Bridger, gr. to F. B. Thomas, Esq., was a very good 2d.

Fuchsias were better done than they are now usually met with. Mr. W. Stratton, gr. to Miss Forbes, was 1st with well-flowered examples; and Mr. Lyne 2d, with a nicely-flowered lot.

For six miscellaneous plants, in or out of flower, in 9-inch pots, Mr. Smith came in 1st, showing the useful decorative Palm, Rhapis flabelliformis, Pandanus Veitchii, Kalosanthes coccinea, and Aerides odoratum; 2d, Mr. Lyne. Gloxinias were better grown than most plants in the show. Mr. Lyne's 1st prize lot were beautifully flowered and as these plants should be, with stout, thick, short leathery leaves, in which case the blooms will almost invariably be found standing well above the foliage, and on stalks strong enough to support them, so different from the weak flagging examples too often exhibited. In the class for a group of eighteen foliage and flowering plants Mr. Smith was 1st, showing a nicely grown group, comprising Palms, Dracænas, Caladiums, Crotons, and Pandanus; 2d, Mr. Lyne, who also exhibited a well-grown lot. Mr. Lyne took 1st with half a dozen double Pelargoniums, much better flowered than these plants generally are. Zonal Pelargoniums were nicely shown, the plants not trained in the ordinary formal shape, not very large but well bloomed, Mr. Lyne showed the best. Mr. Stratton was 1st with a well-managed half-dozen Lycopodiums, and Mr. Curtis, gr. to W. Barlow, Esq., Allerton Grange, Wimbledon, 2d. For a single specimen plant in flower, Mr. Smith was 1st with a very good example of Anthurium Scherzerianum, bearing some thirty well developed spathes. In the corresponding class for a single fine-foliage plant Mr. Smith was 1st, showing a finely coloured Dracæna Baptistii, one of the best of all the large-leaved kinds; Mr. Bridges came in 2d with a healthy young plant of Livistona rotundifolia.

Roses were well but not extensively shown: for twenty-four Mr. Moorman came in 1st, and Mr. Clark 2d. In another class for twenty-four Mr. Moorman was likewise 1st, and Mr. Kendall 2d; and for twelve varieties W. Scott, Esq., was a good 1st, with the best stand of flowers in the exhibition.

Button-hole flowers were quite a feature, there being fifteen competitors for the special prizes offered for six. They were shown on large black cards, and so arranged were seen to the best advantage. Miss Parsons, Wimbledon, was 1st, Mr. Lyne 2d, and Miss A. Parsons 3d.

Fruit was forthcoming in fair condition. In division I. Mr. Davies, gr. to the Rev. G. Porter, was 1st, and Mr. Fanning, gr. to Madame Digby, Roehampton, 2d. In another class for six dishes Mr. Davis was also 1st and Mr. Fanning 2d. For three bunches black Grapes, Mr. Bentley 1st and Mr. Davis 2d. Mr. Fanning came in 1st for six Peaches, and also for six Nectarines. Mr. Mayes showed a good dish of Black Circassian Cherries, that took the 1st prize; and Mr. Cole was 1st for Strawberries with James Veitch, large and fine in appearance.

Messrs. Veitch, of Chelsea; Jackson, of Kingston; Rollisson & Sons, Tooting; and D. S. Thomson, Wimbledon, each exhibited groups of new and rare plants, that contributed much to the effect of the show.

A separate tent was devoted to the productions of cottagers, who at Wimbledon meet with more encouragement than usual. The display was alike satisfactory to the committee and creditable to the exhibitors. The vegetables, hardy fruit and flowers, were superior to those ordinarily met with in such competitions.

Norfolk and Norwich Horticultural: *July* 3.—This Society held its annual summer exhibition in Catton Park (the seat of S. Gurney Buxton, Esq.), a delightful place, situated some two and a half miles from Norwich. The beautiful pleasure grounds and most of the glass erections were thrown open to the public. The show was held in the park opposite the east front of the mansion, three tents being called into use. The first was devoted to Roses and other cut flowers, the Roses alone occupying the central table, which ran the entire length of the tent. The flowers were in very good form, and the different classes were well contested. The prize of £5 given by the President (E. K. Harvey, Esq.) for the best forty-eight single bloom, distinct, was won by Mr. Cant, of Colchester. Mr. W. Nichol, gr. to T. H. Powell, Esq., of Drinkstone Park, Bury St. Edmunds, was 2d; and Miss Penrice, of Witton, 3d. For thirty-six single blooms: 1st, Mr. Nichol; 2d, Miss Penrice; 3d, Mr. T. Rose, of Melton. For twenty-four single blooms Miss Penrice was 1st, and G. Holmes, Esq., of Brook, 2d, an extra prize going to Mr. Nichol. For twelve varieties the Rev. F. W. Jex-Blake, of Swanton, was a good 1st. In a class for two blooms, one to be red or pink and the other white or yellow, Miss Penrice took the 1st prize with Niphetos and Alfred Colomb; Mr. T. Rose the 2d with Duc de Montpensier and Madame Lacharme; and H. Bullard, Esq., Sheriff of Norwich, 3d, with John Stuart Mill and Maréchal Niel. On a table placed against one side of the tent were the cut flowers of other subjects than Roses. In the class for twelve bunches of show Pelargoniums the Rev. C. Fellowes, of Shottesham, took the 1st prize with a splendid lot, the bunches as well as the individual flowers being very large and handsome. For the same number of Zonals Mr. Fellowes also came in 1st, as well as for Sweet Williams and Pinks. For twelve bunches of cut flowers, a bunch of a sort, J. B. Petre, Esq., Westwick House (gr., Mr. J. Davison), was 1st with some really good things cut from the stove. H. Trevor, Esq., St. Giles's Road (gr., Mr. G. Woodhouse), was 2d., and the Rev. C. Fellowes, 3d. A prize was offered for the best arranged group of flowers for the drawing-room table, and here H. Trevor, Esq., came in 1st with a very nicely arranged lot in a glass stand. Another of the tents was devoted to pot plants. For nine exotic Ferns, J. B. Coaks, Esq. (gr., Mr. J. Powley), of Thorpe Hamlet, was 1st with a most even lot of fresh, clean, and well-grown specimens, consisting of Adiantum trapeziforme, A. tenerum, A. formosum, A. farleyense, A. cuneatum, A. cardiochlæna, A. gracillimum, Gymnogramma ochracea, and Adiantum concinnum latum; 2d, Mrs. Steward, Saxlingham Hall. For British Ferns, J. B. Coaks, Esq. (gr., Mr. J. Powley), was 1st again with good plants, but not the equals of the exotics in size; 2d, H. Trevor, Esq. (gr., Mr. G. Woodhouse); 3d, the Rev. J. J. Lubbock. For six Caladiums, Mr. Trevor was 1st with grandly grown plants of well-known sorts. For six Coleuses, Mrs. E. Steward, Saxlingham Hall (gr., Mr. J. Catton), was 1st with a nice compact lot. Mrs. Steward also took the 1st prize for Balsams. The third tent was occupied with fruits and vegetables, and a good display was made. For three bunches of black Grapes, Mr. Allan (gr. to Lord Suffield, Gunton Park) was most deservedly 1st with large bunches of Black Hamburgh with good-sized berries, even in form and perfect in colour and bloom. For white Grapes the Rev. H. J. Muskett was 1st with Muscat of Alexandria. Only one Pine was shown, and to this, exhibited by H. Bullard, Esq., the Sheriff of Norwich (gr., Mr. Sandford), the 2d prize was awarded. There were several Melons shown, and Mr. Back was 1st with Hero of Bath, Mr. Allan, of Gunton, taking the 2d. For a dish of Peaches the Marchioness of Lothian, Blickling Hall (gr., Mr. H. Oclee), was 1st with good examples of Royal George. Lord Heniker, of Thornham Hall (gr., Mr. Perkins), was 2d with the same kind; and W. Birbeck, Esq., of Thorpe (gr., Mr. P. Wright), was 3d with Early Rivers. For Nectarines, Mr. Allan, of Gunton, was 1st with Hunt's Tawny, very good; 2d prize went to Mr. H. Oclee, of Blickling Hall; and the 3d to J. Grey, Esq., Catton House. For Strawberries, twenty-four berries, there was a spirited competition: G. Holmes, Esq., of Brook, was 1st; Mr. Norgage, gr. to Admiral Corbet, of Horstead Hall, 2d; and G. H. Christie, Esq., 3d. For a collection of Strawberries of four varieties, eighteen berries of each, Mr. Holmes was again 1st, Mr. Allan 2d, and W. Birbeck, Esq. (gr., Mr. Wright), 3d. For a collection of fruit, six dishes, Mr. Allan was again to the fore with a nice lot, consisting of two bunches of black Grapes, good Violette Hâtive Peaches, Brown Turkey Figs, Hunt's Tawny Nectarines, President Strawberries, and Austin's Incomparable Melon. The 2d prize went to the Sheriff of Norwich. There was a capital lot of vegetables. prizes being given for single dishes of Peas, French and Broad Beans, Cabbages, Cauliflowers, Lettuces, Carrots, Turnips, and Onions, and also for Cucumbers. For a collection of vegetables, J. B. Petre, Esq., Westwick House (gr., Mr. J. Davison), was 1st. This collection consisted of Cauliflowers, Carrots, Peas, French Beans and Potatos. Mr. Perkins, of Thornham, was 2d, with Cauliflowers, Mushrooms, Peas, Potatos, and Globe Artichokes. The whole of the tables in this tent were well filled, and the productions staged much scrutinised by the gardeners of the neighbourhood, who mustered strongly in the afternoon. (*From a Correspondent.*)

Bitterne Horticultural: *July* 3.—The annual exhibition of this small but prosperous society took place at Shales, Bitterne, the residence of Vice-Admiral Coote, C.B., and was one of the best the Society has yet held. One could wish there had been more competition in some of the classes; but the neighbourhood is perhaps hardly populous enough to admit of this. Groups of nine plants, and the class for six stove and greenhouse plants were the leading features, and in both Mrs. Hazelfoot, Moor Hill (Mr. Blandford, gr.), was 1st, having in the former class nicely grown examples of Dicksonia antarctica, Allamanda grandiflora, Dendrobium nobile, Alocasia metallica, Adiantum pedatum, and Caladium Bellemeyi; and in the latter class Eucharis amazonica, Clerodendron squamatum, Rhynchospermum jasminoides, Justicia rosea, and Mussænda frondosa. In the class for nine plants, Captain Andrew, R.N., and Mrs. Burrell-Ayre were equal 2d.

The best six exotic Ferns came from Captain Andrew, Mrs. Ayre being 2d. Mrs. Hazelfoot had the best four, Captain Andrew coming in 2d. Gloxinias and Achimenes were fresh and pretty, and so were Pelargoniums of all kinds; and the nine variegated Pelargoniums staged by Mrs. Hazelfoot were admirably grown by Mr. Blandford, and decidedly the best we have seen this season.

The Petunias, Fuchsias, and Achimenes from Mrs. Hazelfoot were remarkably good.

The best twelve bunches of cut flowers came from W. S. Gillett, Esq., Mrs. Hoare and Mrs. Wilson, being equal 2d. The best twelve Roses came from Mr. Jackson, Captain Fitzgerald and C. Purrett, Esq., being equal 2d. Fruit was somewhat limited in extent but vegetables were good: gardeners, cottagers and amateurs all showing well in their respective classes. Table decorations always excite much interest among the ladies of the neighbourhood, the best single piece a chaste and pretty design being furnished by Madame Blanche. The best button-hole bouquets came from Miss Coote. Bouquets of wild flowers furnished by the school children were decidedly good, some of them arranged with considerable taste.

The only exhibitor in the nurseryman's class for twenty-four plants was Mr. J. Kingsbury, Bevois Valley Nursery, Sulhampton. Mr. Kingsbury also had some new plants, among them a very promising pale blue Ageratum of his own raising, likely to be very useful for bedding purposes. Some seedling Petunias and Pelargoniums were also of a promising character.

Highgate Horticultural: *July* 4.—There are few of the many societies round the metropolis that hold a position equal to this, for the simple fact that we know of no other that can with favourable weather secure such a numerous attendance of the public, the result being that the Society is not hampered for want of means, like many that have to struggle on from year to year under financial difficulties. Then, again, there are a number of the wealthy residents who give handsome special prizes for various subjects; and as is always the case, the competition for prizes of this description excite more interest both with exhibitors and the public generally than the prizes offered by the Society. The show was held at Holly Lodge, the well-known residence of the Baroness Burdett-Coutts, which was no slight attraction to the surrounding residents of this fast-increasing neighbourhood, and who availed themselves of the privilege. We understand that considerably over £200 was taken at the gates. The President, Colonel Wilkinson's, prize for twelve plants, six flowering and six foliage, was awarded to Mr. E. Ayling (gr. to S. Cuming, Esq.), in whose collection were well-grown examples of Dendrobium Pierardi latifolia, D. thrysiflorum, bearing nine large spikes; Thunia Marshalliæ, Aerides odoratum, and Eucharis amazonica, associated with Palms and Ferns; Mr. Sheen, gr. to E. Brook Esq., was 2d. For the special prize given by S. Cuming, Esq., for twenty plants in or out of flower, Mr. Sheen was 1st with a nice group of Palms, Crotons, Ferns, Alocasias, and Marantas; 2d, Mr. Clarke, gr. to Sir S. H. Waterlow, who had in his collection a good specimen of the old Erythrina Crista-galli, Erica obbata and E. Shannoni. Palms and Ferns: For the prizes given by E. Brooke, Esq., for six Palms, Mr. Ayling was well 1st, with a very fine half dozen, in which were Hyophorbe indica, Cocos Weddelliana, and Latania borbonica; 2d, Mr. Sheen. Six foliage plants: These were well shown,

Mr. Ayling again taking the lead; 2d, Mr. Brandrick, gr. to R. H. Prance, Esq. For six Ferns Mr. Sheen was 1st; 2d, Mr. Taylor, gr. to J. H. Gent, Esq. In the class for six Orchids Mr. Ayling was 1st with a very neatly flowered lot, including Dendrobium Falconeri, D. suavissimum, Anguloa Clowesii, and the white-flowered Cypripedium niveum. Mr. Brandrick, who was 2d, showed a large-flowered Sobralia macrantha, and the singular Angræcum caudatum. Mr. Ayling also took the 1st prize with a beautiful box of twelve varieties of cut flowers, mostly consisting of Orchids. Roses, for so near London, were nicely shown.

Fruit was fairly represented in quantity and generally in good condition. Mr. Birse, gr. to J. H. Lermitte, Esq., was 1st for six dishes, showing Black Hamburgh and Buckland Sweetwater Grapes, a good dish of Royal George Peaches, Violette Hâtive Nectarines and Strawberries, and a Melon. Three bunches Black Hamburgh Grapes: equal 1st, Mr. Birse and Mr. Clarke. Three bunches white Grapes: 1st, Mr. Brandrick; 2d, Mr. Clarke. Six Peaches: 1st, Mr. Reeves, gr. to Mrs. Heal, with Stirling Castle in fine condition. Six Nectarines: 1st, Mr. Birse, showing Violette Hâtive well coloured. Mr. Sparkes, gr. to J. W. Jeakes, Esq., staged half-a-dozen nice Pines, not for competition. Mr. Brooke's prizes for fruit and vegetables combined: 1st, Mr. Birse, with a very good collection; Mr. Clarke, 2d, also exhibiting a meritorious lot.

Cottagers' productions receive at Highgate, from the Baroness Burdett-Coutts and others, very great encouragement, and the quantity of well grown culinary vegetables, hardy fruit and flowers exhibited is an evidence of what may be accomplished at so short a distance from London even in an ungenial season like the present has been.

Tunbridge Wells Horticultural: *July* 5.—This society is proverbially lucky in the matter of weather, and a fine day is its invariable heritage. As usual the show took place in the grounds adjoining the Calverley Hotel, while the cut flowers and fruits were in the Public Hall, through which the visitors pass to the grounds. The exhibition at Tunbridge Wells is always rich in two strong features, viz., fruit and table decorations. Both were admirably shown on this occasion. In the class for black Grapes, three bunches of Black Hamburghs were generally shown, and some splendid examples were staged—there being some fourteen competitors. The best—and they were very fine—came from Sir Julian Goldsmid, Bart., M.P., Somerhill Park (Mr. T. Hopgood, gr.); R. Leigh, Esq., Maidstone (Mr. C. Haycock, gr.), being 2d; and C. Reilly, Esq., Nevill Park (W. Scammell, gr.), 3d. Muscat of Alexandria had the lead in the class for white Grapes, the best three bunches being staged by T. Holman, Esq., East Hoathley (Mr. H. Blundell, gr.); Lord De Lisle, Penshurst (Mr. T. Bridger, gr.), being 2d. Foster's Seedling and Golden Champion were well shown, the latter a little unripe. In the class for three varieties of Grapes, exclusive of Black Hamburgh, the best three bunches came from Bayham, the residence of the Marchioness Camden (Mr. W. Johnston, gr.), and consisted of Duke of Buccleuch—very fine; Buckland Sweetwater and Auvergne Frontignan—all good examples; 2d, H. B. Mildmay, Esq., Sevenoaks (Mr. Burt, gr.), with Foster's Seedling, Buckland Sweetwater, and Black Prince. The best collection of fruit for quality and arrangement came from Mr. T. Hopgood, and consisted of a Pine-apple, black Grapes, Peaches, Strawberries, Raspberries, &c., all in capital condition; 2d, J. Deacon, Esq., Mabledon Park (Mr. A. Henderson, gr.), with some good fruit nicely arranged. Pines were represented by some good Queens, and Peaches were remarkably good, the 1st prize dish of Crimson Galande, from H. Brenchley, Esq., Staplehurst (Mr. T. Bashford, gr.), were wonderful fruit. Noblesse came 2d, a fine dish coming from Mr. Fennell. In the class for Nectarines Mr. Bashford had a very fine dish of Stanwick Elruge, which gained the 1st prize; J. Norris, Esq., Bletchingly, coming in 2d with Elruge. Melons, Strawberries, Cherries, and Cucumbers were also numerously and well shown.

Not only are table decorations numerously shown at Tunbridge Wells, but the quality is very high, and a remarkably keen competition always ensues in the classes. They are most elegantly and lightly set up, gracefully conceived, and executed with fine taste. The best three pieces came from Mrs. W. Seale, Sevenoaks, set up in the fine style characteristic of this lady's work; Mrs. Bishop, Croydon, being 2d, and Miss Fennell, Fairlawn Gardens, 3d. The best single piece came from Mr. J. Bolton, and was exquisitely set up; 2d, Mrs. W. Seale; Miss Blanche Charlton being 3d, and Miss Rachel Cox, Redleaf, 4th: all were very good. The epergnes of wild flowers commanded general admiration, so tastefully were they arranged. Miss Pankhurst, Tunbridge, was 1st; Mr. F. A. Seale, Sevenoaks, 2d; and Mr. J. Bolton 3d. The best collection of wild flowers, properly arranged and named, came from Miss Isabella Cox, Redleaf. Hand bouquets and button-holes were numerously shown.

In the classes for cut Roses Messrs. Mitchell & Sons, Piltdown Nurseries, were 1st, forty-eight varieties, three blooms of each; Mr. G. W. Piper, Uckfield, being 2d. In the class for twenty-four varieties, three trusses of each, Messrs. T. Bunyard & Son, Maidstone, came in 1st, and Messrs. Mitchell & Son 2d. In the amateurs' classes the most successful exhibitors were Captain Christy, Messrs. F. Warde, J. Ridout, J. Allan, and others. The class for eighteen varieties of stove and greenhouse plants, cut blooms, proved a very interesting one, and brought together some excellent things—Messrs. Bolton, Johnstone, and Burt taking the prizes in the order of their names. In the plant tents a certain thinness was apparent, for there was a lack of the material usually seen there, and had not Mr. W. Balchin come up from Brighton there would have been serious gaps. The best group of nine stove and greenhouse plants came from Mr. Balchin; 2d, J. J. Barron, Esq., Langton (Mr. J. McLean, gr.). The same exhibitors also came in 1st and 2d with eight foliaged plants.

Coleus, generally a great feature at Tunbridge Wells, were wanting on this occasion; perhaps the season had not proved favourable to their development. Caladiums were very good, the best coming from Mr. W. Johnstone, and the same exhibitor had the best six exotic Ferns. Mr. Balchin had the best eight exotic Ferns. Fuchsias were in force, but not so good as we think they ought to be shown; and Pelargoniums of all kinds were rather stale. Lycopods, as usual, were very fine; and Achimenes were good also. One class at Tunbridge Wells causes great interest among local exhibitors, namely, that for a group of miscellaneous plants occupying a space 9 feet by 6 feet. Four prizes were offered, and the best and most tastefully arranged group was adjudged to be that from the Rev. R. V. Kinleside, Sunbury House (Mr. F. Newman, gr.); 2d, Mr. G. Fennell; 3d, Mr. A. Bashford; 4th, Mr. G. Goldsmith. Vegetables were numerous and very good. Messrs. Veitch & Sons, Chelsea, and Mr. B. S. Williams, Holloway, sent down from London fine groups of new and rare plants, which proved a great treat to the visitors and were eagerly scanned by them. The arrangements were, as usual, of an excellent character, both for exhibitors and judges.

Southgate Horticultural: *July* 6.—This exhibition was held in the grounds of Broomfield Park, the residence of R. D. M. Littler, Esq., J.P. The show collectively was quite equal to former displays in respect to quality, but not quite so extensive as on some former occasions. The cottagers' exhibits from their gardens and allotments, arranged in a tent to themselves, were as usual here an important feature, creditable alike to the promoters and the exhibitors. The gentlemen's gardeners of the surrounding neighbourhood, assisted by the nurserymen of the district, had a fine display of Roses, filling the whole of one side of a large tent. Messrs. Paul & Son, the Old Nurseries, Cheshunt, staged some magnificent flowers; Messrs. Paul & Son, Waltham Cross; Messrs. W. Cutbush & Son, Highgate and Barnet; and Mr. W. Rumsey, also exhibited largely. Mr. B. S. Williams and Messrs. Cutbush also exhibited good collections of new and rare plants. Stove and greenhouse flowering plants: These were shown in very nice condition. Mr. Graver, gr. to J. Walker, Esq., Arnos Grove, Southgate, took the 1st prize with half-a-dozen, his best being Anthurium Scherzerianum, Allamanda Chelsoni, and a large well-flowered example of Stanhopea tigrina; Mr. Osborn, gr. to J. A. Mappin, Esq., Southgate House, was 2d.

Six fine foliage plants: These also were well done. Mr. Hughes, gr. to Mrs. Adams, Enfield, was awarded 1st, having in a nice group well grown specimens of Areca Vershaffeltii, and Croton majesticus. Six exotic Ferns: Mr. Osborn came in 1st easily, showing amongst others beautiful specimens of Neottopteris australasica and Davallia Mooreana. Mr. Graver took 1st with the highest coloured half-dozen Coleus we recollect to have seen—not large plants, but dense and full of foliage. Mr. Graver was also 1st for six Cockscombs, with dwarf, well grown plants of his fine strain.

Cut flowers.—Amateurs' Roses were well shown in a good competition. Mr. Graver took 1st for twenty-four, and Mr. Duffield, gr. to H. K. Mayor, Esq., Winchmore Hill, 2d. Mr. Trebble, gr. to J. Miles, Esq., was 1st for twelve with the best competing stand in the exhibition. Twelve Rose-buds: Mr. Pullen, gr. to — Smith, Esq., Colney Hatch, 1st, for a handsome dozen, in which the Tea varieties were most numerous.

Miscellaneous cut flowers are always a feature at Southgate. For forty varieties, hardy and exotic, Mr. Graver was easily 1st, exhibiting a fine collection of mixed stove, greenhouse and outdoor plants. For twenty varieties, all hardy, and twenty exotic and hardy, Mr. Hughes was 1st.

Fruit.—Mr. Ravenhill, gr. to Alderman Sidney, was 1st for three bunches of black Grapes, Mr. Pullen 2d. Three bunches of white Grapes: Mr. Pullen 1st, with Muscat of Alexandria, a little deficient in colour; Mr. Reed, gr. to R. D. M. Litler, Esq., 2d, showing Foster's Seedling. Three dishes of Strawberries.—These, as generally the case here, were very fine, Mr. Graver having splendid examples of Dr. Hogg, Premier, and President; Mr. Trebble was 2d, with fruit little inferior. Green-flesh Melon: 1st, Mr. Graver; 2d, Mr. Osborn. Scarlet-flesh Melon: 1st, Mr. Hughes; 2d, T. Mann, Esq. Collection of hardy fruit: 1st, Mr. Graver, showing, amongst others, splendid Cherries and Strawberries. An extra prize was deservedly awarded to Mr. Ravenshill for a beautiful dish of Royal George Peaches.

Ealing, Acton, and Hanwell Horticultural: *July* 10.—Perhaps for the last time in the course of a history that is horticulturally famous, Ealing Park was on the 10th inst. the scene of a large flower show and the rendezvous of a brilliant company. Mr. J. S. Budgett, so long the tenant of this delightful spot, and during that time a munificent supporter of the local society, will shortly quit it for a new home; and it is feared that, as was so humorously expressed at the special luncheon—over which the Right Hon. S. H. Walpole presided, and where the owner, Sir Trevor Lawrence, and Mr. Budgett were guests—the charming park would presently be converted into a garden in which were grown only those plants that were watered with ground rents. In other words the destiny of the place would seem to be that of a "magnificent and truly delightful building site," as it may perhaps figure in some auctioneer's announcement. The grounds being thrown open to visitors there were few that did not avail themselves of the chance once more to inspect the beautiful trees with which the place abounds, admire the grandly coloured group of Golden Queen Hollies at the end of the lawn, and to be enraptured with the splendid Deodar glade, one of the most beautiful groups of these fine Conifers to be found in the kingdom. Whatever may befall the outer grounds, for old association sake and still more for its inherent beauties, it is earnestly to be desired that these enclosed pleasure grounds may be spared from desecration by the modern Goths and Vandals, the brick and mortar-stucco-plaster-run-up-speculation builders of the present day.

Of the show itself it is pleasant to be enabled to write in high praise of the quantity of the exhibits and the general good quality, and the excellence of the arrangements for conducting the exhibition. Three large tents were used to hold the various classes. One contained groups and classes of large plants placed upon the ground; a second was filled with smaller plants, table decorations, cut Roses, and other flowers, fruits, and vegtables; and a third was almost exclusively filled with cottagers' productions—a marvellous feature at Ealing at all times, and more so than ever this year. When it is stated that about twenty entered for each class of six dishes of vegetables, eighteen for four sorts, and about twenty-five for three kinds, it will be understood that the competition all through the other classes was excessive; and this, although the customary prizes for Potatos were held over to the autumn show. The two great competitors in the leading open plant classes were Mr. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, and Mr. Edwards, Mr. Budgett's gardener. With these, nearly all through the show, it was "Greek meeting Greek," or perhaps we may be permitted in these days of national patriotism to pitch that antiquated classic illustration to the dogs, and say that it was "Briton meeting Briton," with varying success. In Ferns and foliage plants Mr. Hudson was exceptionally strong, having in his 1st prize group of the former a centre plant of Dicksonia antarctica of fine proportions, immense Davallia Mooreana and bullata, a large Adiantum cardiochlæna, a fine farleyense, and a good specimen Thamnopteris nidus. Mr. Edwards had a capital lot of plants. For six fine-foliage there was a close run, Mr. Hudson having a centre plant in a noble specimen Areca lutescens, about 12 feet in height; Alocasia metallica and Lowii, each 5 feet through; and superbly leaved Cycas circinalis, and Croton pictus and variegatus. Mr. Edwards took 2d place with a centre plant of Areca Baueri, and round it Phœnix reclinata, a grand Pandanus Veitchii, Alocasia Lowii, Dracæna Youngii, and Cycas revoluta. In the class for single specimen plants in flower Messrs. Hudson and Edwards were placed equal 1st with fine specimens of Dipladenia amabilis and Allamanda Henderson.

An enumeration of all the awards in the plant classes here is impossible, therefore we must be content with mention of the groups shown not for competition—one sent by Mr. Kinghorn, of Richmond, and occupying a prominent place in the plant tent, being specially admired. Mr. Roberts, gr. to Baron Rothschild, of Gunnersbury Park, sent a charming and effective group of Orchids, Ferns, Dracænas, and other valuable decorative plants. Mr. Pestridge, of Boston Road Nursery, Brentford, had a large group

of his richly coloured bronze and tricolor Pelargoniums, with respect to the culture of which something was recently said in these pages. Mr. Pestridge states that the richest hues, however, are secured in spring and autumn. Mr. G. Weedon, of Ealing, exhibited a nice group of bedding plants, which included some very richly coloured blue Lobelias of a fine type. Mr. R. Dean staged a miscellaneous collection that included several of the newest Fuchsias, some Carnations in pots, including the pure white kind, Susan Askey; several varieties of Campanula turbinata, and fine examples of cut Sweet Williams and white Stocks. The cut Roses shown by the trade were a telling feature, and, as usual, attracted great attention. In the class open to the kingdom for thirty-six kinds in three trusses Mr. Charles Turner, of Slough, was 1st with a beautiful lot of blooms that included several of his most recently sent out kinds. Mr. Piper, of Uckfield, Sussex, was 2d with fairly good flowers. Perhaps the finest lot staged were those sent by Mr. Cannon, manager of Messrs. Charles Lee & Sons, Ealing Nursery, for amongst them were flowers that would have taken a 1st place in any exhibition. Messrs. Cutbush & Sons, of Highgate, also staged a fine lot of flowers. The local competition was great, as indeed was the case in most classes.

Fruit generally was not a strong section, but some was excellent. The 1st prize collection of six kinds, sent by Mr. Edwards, was well worth the position gained. It consisted of good black Grapes, Melon, Pine, Peaches, Cherries, and Strawberries. Mr. Hudson took the 1st place for a collection of vegetables, all of good quality. M. P. M'Kinlay, of Beckenham, sent from his garden dishes of Woodstock Kidney, Beckenham Kidney, International, and the new American kind, Beauty of Hebron, all fine handsome samples. Some dishes of International, shown both by gardeners and cottagers, were by far the best Potatos in the various classes. In table decorations Mrs. Hudson was placed 1st with one of her customary displays of decorative taste. Classes for amateurs, single-handed gardeners and cottagers were numerous in addition to those that were open to all-comers in the district, but of course in these the best gardeners were the strongest competitors. The attendance of visitors was in excess of the usual members, and the gate-takings all the more satisfactory. The weather was delightful, and throughout the exhibition was a complete success, for which much is due to the efforts put forth by Mr. R. Dean, the secretary of the Society.

Woodbridge Horticultural: *July* 11.—This Society held its annual meeting in the Abbey grounds, and was highly favoured in the weather, although the morning looked threatening and slight showers fell. The flower show is always a source of attraction to the people of Woodbridge and its vicinity, who make quite a gala day of it, and it is therefore not to be wondered at that this Society is a flourishing one. Another secret of its success is in having an influential committee, and an honorary secretary who is full of zeal and energy in hunting up fresh subscribers and exhibitors, most of whom he imbues with much of the same spirit he possesses himself. A Society so constituted and worked is bound to succeed, especially if it happens to be located in a town like Woodbridge, where there are so many noblemen's and gentlemen's seats with good gardens, and so many amateurs in the neighbourhood whose ruling passion is a love of horticulture. The *fête*, always an interesting one, was doubly so this year owing to the Veitch Memorial prize of £5 and medal being offered for three stove and greenhouse plants. The medal was carried off by E. Packard, Esq., of Berkfield Lodge, Ipswich (Mr. A. Payne, gr.), but he was run very closely indeed by the collection from Lord Rendlesham (Mr. Mill, gr.), who had a magnificent Stephanotis floribunda and a well-bloomed specimen of Anthurium Scherzerianum, the weak point being an Allamanda Schotti poorly flowered. The three in the winning lot consisted of a finely-managed Trachelospermum jasminoides, a grand Allamanda Hendersoni in perfect condition, and a good plant of Dipladenia amabilis, and, taken together, these had what slight difference there was in point of merit. The other collections of stove and greenhouse plants were well represented, the special prize for the best six, offered by Sir Richard Wallace, being won by Messrs. Gilbert & Son, St. Margaret's Nursery, Ipswich; and the 2d by R. Jones, Esq., of Woodbridge (Mr. Gunn, gr.); the 3d going to J. P. Fitzgerald, Esq., of Boulge Hall (Mr. King, gr.). For the best stove or greenhouse plant the 1st prize was carried off by E. Packard, Esq., and the 2d by Messrs. Gilbert & Son. Stove and greenhouse Ferns were fairly represented, the best four coming from the last-named firm, and the 2d from Lord Rendlesham, who had a nice Adiantum farleyense and a good specimen of Davallia Mooreana, a fine exhibition Fern, and thoroughly deserving cultivation even in the most choice collection. Lord Rendlesham, who has a splendid collection of Orchids, carried all before him in these classes, the exhibits in which are always a special treat to visitors at the Woodbridge Show. One great feature in the exhibition was the collection of stove and greenhouse plants in not larger than 8-inch pots, for which prizes there were a great many entries, most of the lots containing very meritorious productions—just such a class of plants as are needed in most establishments for general decorative purposes, and therefore the right thing to encourage. Quite as much skill is required in the management of these to have them in good condition for special occasions, as for those of more elephantine proportions, and it is therefore to be hoped that we shall see more of such at horticultural shows in future. The premier award for these went to E. Packard, Esq., the 2d to Lord Rendlesham, for a collection but little inferior; and the 3d to J. Limmer, Esq., of Woodside, Ipswich (Mr. Latter, gr.), for a nice clean lot. For the special prize offered by E. Packard, Esq., for six fine-foliaged plants, Messrs. Gilbert & Son were 1st, and J. P. Fitzgerald, Esq., 2d. Fuchsias were wonderfully well done, the whole of them being fine handsome pyramids, clean and fresh, and laden with bloom from top to bottom. A collection of Gloxinias contributed by J. Limmer, Esq. (Mr. Latter, gr.), from seed raised from Veitch's strain, were much admired, owing to their fine colours and the great substance and size of the flowers, they being almost as large as Allamandas. Other exhibits in the plant department were too numerous to particularise. The Roses had such crowds of admirers that it was difficult to approach them after visitors were admitted. Mr. Cant as usual was to the fore, with a magnificent twenty-four, among which Alfred Colomb, François Levet, Baroness de Rothschild, Black Prince and Princess Beatrice, figured most conspicuously. Captain Powell, of Drinkstone (Mr. Nichol, gr.), was 2d in this class with a splendid lot of flowers, but, with so many to pick from, a nurseryman stands in a much better position for winning than any amateur, although, on this occasion, Mr. Cant had two champions to contend with who have frequently carried off high honours at the metropolitan shows; Mr. Rushmere, gr. to Sir C. Rowley of Tendring, being 3d. In the class for twelve, Captain Powell (Mr. Nichol, gr.), was a good 1st, having, among others, a superb bloom of Reynolds Hole, which is one of the finest dark Roses in existence. The same exhibitor was 1st for six, the best bloom among which was Leopold I. In Teas, Mr. Cant, of Rose growing fame, came in 1st with a fine lot, and Mr. Rushmere 2d. Herbaceous cut flowers, which are now most deservedly coming more into notice, were well shown by Messrs. Gilbert & Son, of St. Margaret's Nursery, Ipswich, who, as usual in East Suffolk, had the best collection. Fruit, considering the season, was well represented, the collection shown by the Duke of Hamilton (Mr. Irvine, gr.) being highly meritorious, as were also those in the same class contributed by Lord Waveney (Mr. Fisher, gr.) and Lady North (Mr. Tebenham, gr.), who were placed in the order in which their names stand. The special prize for Grapes, two bunches of black and two of white, was carried off by Lord Waveney, who had fine Hamburgh and Muscat of Alexandria, the latter only wanting a little more colour to render them perfect. In the class for black Grapes, Lord Rendlesham (Mr. Mill, gr.) was quite unapproachable, he having three magnificent bunches of Hamburgh well coloured and finished. Equal 2ds were awarded to Viscount Holmsdale, of Glevering (Mr. Coppin, gr.) and Lord Waveney, who both showed excellent examples of this favourite Grape. In the class for whites, Lord Waveney was 1st with Muscats, and Lady North 2d with Foster's Seedling well coloured. For the heaviest two bunches Lord Rendlesham was again 1st with Hamburgh, large both in bunch and berry, and well coloured. Melons, of which there were a great many shown, were chiefly confined to Golden Perfection, the Duke of Hamilton being 1st, as also for a collection of Strawberries. The white and red Currants were something unusual for size, and looked in that respect more like Grapes, being fine both in bunch and berry. One thing more to be commended in the Woodbridge show, is the encouragement afforded to cottagers, whose productions here are such that any kitchen gardener might be proud of them. (*From a Correspondent.*)

Stevenage Horticultural: *July* 12.—This proved one of the best exhibitions the Society has held for several years, and it took place as usual in the Public Hall at Stevenage. It is pre-eminently a cottagers' show, supplemented with the productions of gardeners and amateurs who also compete for prizes in their sections. Some of the best-grown *bonâ fide* window plants it is our lot to see are found at Stevenage. In the classes for plants, the best window specimens were double Petunias, Fuchsias, among which was a good specimen of F. fulgens; Pelargoniums, the show class and doubles being well shown; and herbaceous Calceolarias, of a brighter, praiseworthy character, grown by George Totman in a cottage window. Bunches of cut flowers were rather lumpy, but some nice collections of wild flowers, arranged with taste, were of a very pleasing character. The best came from Martha Gillams, and they were set up skilfully and well in a homely epergne.

Hardy fruits, with the exception of Cherries, were largely shown; there were not less than twenty-one dishes of Black Currants, all remarkably good. Red and white Currants were not so numerous, but all good. Vegetables were very fine, especially Peas and Broad Beans; and baskets of vegetables were of a highly praiseworthy character. Mr. George Dunn, the hon. secretary of the Society since its establishment, bears emphatic testimony to the good the Society has wrought in Stevenage and the surrounding villages, and states that the produce as now shown marks a surprising advance over that staged at the earlier shows of the Society. In the other departments the principal exhibitors were J. B. Denton, Esq., Stevenage; Colonel Wilkinson, Chesfield; the Rev. J. E. Pryor, Pennington; Colonel Metcalfe, C.B., Aston; the Rev. F. Jenyns, Knebworth; the Rev. J. O. Seager, G. Salmon, Esq.; the Rev. W. Jowitt, and Mr. J. W. Smith, Stevenage. Plants were somewhat weakly shown, but fruit and vegetables were remarkably good. The prizes were not large, for the funds of the Society are but small, and the leading work is to encourage gardening among the cottagers as much as possible.

Enfield Horticultural: *July* 13.—This Society had a small but pretty show in the grounds of Chase Side House, Enfield, on Saturday last.

The collection of foliage and flowering plants was tolerably good. Mr. Hughes, gr. to Mr. Adams, took 1st for six Ferns with fair examples; the 2d falling to Mr. Farrow, gr. to G. Batters, Esq., with smaller examples. Mr. Hughes also had the highest award for six plants with Crotons, Crinums, Alocasias, &c.; six foliage plants also gaining Mr. Hughes a prize. Half-a-dozen fair Begonias came from Mr. Tong, gr. to G. S. Law, Esq.—Mr. Lowe, gr. to J. Collins, Esq., being placed equal 1st, and Mr. Cornish 2d. Mr. Hughes was also fortunate with eight Balsams, with fair examples; the prize for four Balsams falling to Mr. Shaw, gr. to P. Twells, Esq., with larger plants. Six fair Cockscombs came from Mr. Farrow. Pelargoniums were shown by Mr. Farrow, Mr. Lowe, Mr. Shaw, Mr. Cornish, &c. Mr. Hughes had a 1st for four stove or greenhouse plants, Mr. Lowe taking 2d: the specimens not being extraordinary.

For a group of miscellaneous plants, Mr. Tong, gr. to G. S. Law, Esq., was placed 1st with some good specimens. Mr. Tong was also 1st for six Achimenes, having well-bloomed plants. Six nicely done Fuchsias gained Mr. Lowe another 1st prize.

The extra prize offered by G. S. Foley, Esq., was also gained by Mr. Hughes with some very fair examples. An extra prize was also offered by F. G. and J. H. Adams, Esqs., for a group of plants, and this prize was also taken by Mr. Hughes, who appeared to have matters pretty much his own way. Among the groups exhibited for the above prize was one by Mr. J. Shaw, who was awarded an extra, as was also Mr. Rance.

Messrs. Cutbush & Son, Highgate, and Mr. B. S. Williams had pretty little groups of plants in the show. Gloxinias and cut flowers were a moderate show. Roses were a tolerably good show—Messrs. W. Paul & Son, Waltham Cross, having a stand of some ninety-six sorts, not for competition, which were Highly Commended. Mr. W. Rumsey, of Joyning's Nursery, Waltham Cross, who was also Commended, had some very fine blooms. Messrs. Paul & Son, Cheshunt, also had a very good stand. Half-a-dozen very pretty hanging baskets were contributed by Mr. Cornish and Mr. Shaw, who were awarded 1st and 2d respectively.

Vegetables were a very moderate show; wild flowers, grasses, &c., by the children, were interesting. A few Carnations and Picotees were also exhibited. Fruit was a moderate show, some fairly good Grapes, Pines, Peaches, and Strawberries being exhibited, but, like the vegetables, they did not call for individual comment.

Obituary.

BARTHÉLEMY DU MORTIER, Count of the Holy Roman Empire, Minister of State, member of numerous learned societies at home and abroad—such, in brief, is the inscription on the obituary notice which has just reached us of Belgium's leading botanist. M. Du Mortier died on the 9th inst., at Tournai, in his eighty-second year. It is but the other day that the good old man received the touching homage of his friends and colleagues, grateful to him for what he had done for botany, and sensible of his high personal qualities. Du Mortier of late years was better known as a politician than a botanist, and managed to win the respect of all parties for his honesty of purpose and courteous manner. As a Minister he was enabled to do excellent service in promoting the organisation

of the Botanic Garden at Brussels, with its herbaria, museums, and library, and to the last he preserved his interest in an institution of which he may be regarded in the light of the founder.



Natural History.

Blind-worm, or Slow-worm (Anguis fragilis).—Well do I recollect in my school-days with what especial dread I looked upon this harmless reptile; the villagers all around told me frightful tales of the fearful deaths which had taken place—of course, years ago—through the sting of this snake; and when we chanced to meet with one, strange to say, they were generally found in a Clover field at the base of the hills, and would turn up when it was being mown. This field was an unpleasant one to mow with the scythe, on account of the uneven nature of the ground; so, to clear up the difficulty, they mowed it in a circle. At last a small patch only was left standing, just in the centre of the meadow; in this a few hares, partridges, rabbits, and, amongst the rest, one or two blind-worms were generally discovered. If one of the "fearsum snakes" wriggled out beside the men, the scythe was flung down in haste, and not unfrequently a scream and a run was the result. If the blind-worm crawled over the scythe blade, it was cleaned with great care before being used again. However, although this superstitious feeling existed amongst these ignorant labourers, yet I never heard any one say the cattle would take any harm from eating the Clover. This latter idea has, in recent years, sometimes puzzled me. Mr. Wood, I find, bears me out, for he states as follows:—"They impute to the blind-worm qualities which even the cobra, the rattlesnake, or the puff-adder do not possess, and which the combined powers of these deadly reptiles could not equal. It is thought to be saturated with venom, and to exude poison indiscriminately from every part of its body. According to their conception it bites the cattle, especially when they are lying down, and altogether it affords a notable instance of the strange errors into which men will fall, especially when there is an unfavourable opinion to be expressed."

Nature keeps up an even balance. If we were dependent upon birds alone to keep down slugs, worms, snails, and injurious insects generally, they would multiply too rapidly; but when birds have sought their roosting places, and the shades of evening are drawing on apace, then our friend the blind-worm creeps out of his concealment and keeps up the constant war; so by night and day alike they are destroyed, and prevented from doing much mischief. There are thousands of tiny snails so small as to be scarcely detected; probably these would escape the eye of our larger song-birds who feed upon them, but the young blind-worm follows these dainty morsels along the blades of grass most perseveringly; it is thought it subsists almost exclusively upon the young snails and slugs. To see this army to advantage, go out in a clear though moist evening, with the aid of a lantern turn up the undersides of the leaves of plants, and every one not acquainted with this must be astonished.

Vipers and snakes devour frogs, mice, &c., but our blind-worm refuses these, and, so far as I have been able to learn from actual observation in captivity, it appears to prefer slugs to all other kinds of food. It has a very interesting manner when catching its prey—if I may be allowed to use this term; it takes them invariably in one position—elevating its head slowly over the spot where the slug is detected, it suddenly seizes it by the middle of the body, somewhat as a dog fastens a rat; it holds it in this position for a minute or more, then, turning slowly, it swallows it head foremost. Again, unlike snakes, it seems to dread water, and carefully avoids marshy spots, selecting as its favourite haunts dry hilly or sandy places.

The blind-worm has a general resemblance to snakes, and this is all that can be said against it, for it certainly possesses no fangs, and has not even the power to inflict an injury; in anger, when more than usually tormented in captivity, it will bite the finger if held near it, though it can scarcely be felt. Unlike the true snakes, which have smooth skins, it has a scaly body; but it casts its skin annually, like many other reptiles.

The specific name, "fragilis," first given by Linnæus, is very expressive of a peculiar habit; if it is alarmed, or suddenly surprised, and prevented from making its escape, it will become perfectly rigid by a forcible contraction of all the muscles of its body; in this condition, which is supposed to be a manifestation of anger—though we can scarcely believe this theory—it will, by a slight blow, or by attempting to bend it, break into two portions; the tail part will begin to wriggle about, and whilst we are intent upon watching its antics, the head quietly takes its departure to some place of safety. No doubt its local name, "blind-worm," is derived from an idea of its being sightless. The eyes are very minute, but it makes good use of them while hunting for supper.

The general colour of this reptile is brownish yellow, with a pearly lustre; a darker line is seen down the back; the under-side is blue-black, with white reticulations. It produces the young alive, about midsummer; generally about a dozen, seldom less, are found at each birth.

According to our peculiarities, one has one hobby, another a widely different one. Very few seem fond of keeping reptiles; but we know of no hobby which yields so much pleasure and amusement as a few pet lizards and blind-worms; the chief drawback is, they are summer pets—we can seldom draw them out of their winter's sleep; charm we ever so much, and tempt with the choicest morsel, in the shape of a few white slugs, still they are deaf to all our entreaties. If they are brought to a warm room, which enlivens them only for a few minutes, it seems to us great cruelty, for they quickly creep away again to their drowsy state. The gardener has no friend equal to the slow-worm for clearing his beds of the slimy snail family: let us regard it, not with dread, but look upon it in future as one of the links in Nature's great chain, which cannot be broken without our suffering injury. *R.*

The Weather.

State of the Weather at Blackheath, London,
For the Week ending Wednesday, July 17, 1878

Month and Day	Barometer: Mean Reading Reduced to Sea Level	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest	Temperature of the Air: Lowest	Temperature of the Air: Range	Temperature of the Air: Mean for Day	Temperature of the Air: Departure of Mean from Average of 18 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity, Sat. = 1000	Wind: Average Direction	Rainfall
July	In.	In.	°	°	°	°	°	°			In.
11	29.70	−0.12	67.3	54.0	13.2	59.1	−3.2	52.5	79	S.W.: WNW	0.00
12	29.72	−0.10	66.0	55.0	11.0	59.4	−3.0	51.5	75	W.	0.01
13	29.81	−0.01	74.2	53.6	20.6	60.8	−1.7	51.9	72	NNE: N	0.00
14	29.92	+0.11	72.2	53.0	19.2	60.7	−1.9	53.3	77	NNW.: N.	0.00
15	30.03	+0.21	70.0	54.2	15.8	60.3	−2.4	55.2	84	N.W.	0.00
16	30.10	+0.29	74.9	52.1	22.8	62.0	−0.7	57.1	84	N.	0.00
17	30.12	+0.31	81.6	54.0	27.6	66.2	+3.5	59.9	80	N.W.	0.00
Mean	29.91	+0.10	72.3	53.8	18.5	61.2	−1.3	54.5	79	N.: N.W.	sum 0.01

July 11.—Fine, but very cloudy. Cool. Overcast at night.
— 12.—A dull day. Cool. Occasional drops of rain after 5 P.M.
— 13.—A very fine bright day. Clear.
— 14.—A fine bright day, partially cloudy till evening, then clear.
— 15.—A dull day, very cloudy. Sunshine at times. Overcast at night.
— 16.—A fine day, partially cloudy. Warmer.
— 17.—A very fine bright warm day.

London: *Barometer.*—During the week ending Saturday, July 13, in the vicinity of the metropolis the reading of the barometer at the level of the sea increased from 30.01 inches at the beginning of the week to 30.02 inches by the morning of the 7th, decreased to 39.98 inches by the evening of the same day, increased to 30.16 inches by the evening of the 8th, decreased to 29.88 inches by the afternoon of the 11th, and increased to 30.04 inches by the end of the week. The mean reading for the week at sea level was 29.98 inches, being the same as that of the preceding week, and 0.02 inch below the average.

Temperature.—The highest temperature of the air observed by day varied from 76° on the 7th to 66° on the 12th; the mean for the week was 71½°. The lowest temperatures of the air observed by night varied from 51½° on the 9th, to 56¾° on the 7th; the mean for the week was 54⅜°. The mean daily range of temperature in the week was 17°, the greatest range in the day being 22½° on the 9th, and the least 11°, on the 12th.

The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—July 7, 63°.6, + 1°.8; 8th, 62°.5, + 0°.5; 9th, 61°.4, − 0°.7; 10th, 60°.3, − 1°.9; 11th, 59°.1, − 3°.2; 12th, 59°.4, − 3°.; 13th, 60°.8, − 1°.7. The mean temperature of the air for the week was 61°, being 1°.2 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 147° on the 13th, 137½° on the 8th, and 136½° on the 9th; on the 12th the reading did not rise above 100°. The lowest readings of a thermometer on grass with its bulb exposed to the sky were 47½° on the 8th and 9th, and 48⅜° on the 10th; the mean of the seven low readings was 49½°.

Wind.—The direction of the wind was variable, and its strength moderate.

The weather during the week was fine and dry, though dull and cool; the sky very cloudy.

Rain.—A little fell on the 9th and 12th; the amount measured was 0.04 inch only.

England: *Temperature.*—The highest temperatures of the air observed by day were 76½° at Eccles, 76½° at Cambridge, and 76° at both Blackheath and Leeds; the highest temperature of the air at Liverpool was 64½°, and at Plymouth and Leicester was 71½°; the mean value from all stations was 73°. The lowest temperatures of the air observed by night were 41° at Eccles, 44⅜° at Sheffield, and 45° at Nottingham; the lowest temperature of the air at Plymouth, Truro, and Norwich was 53°; the mean value from all stations was 48½°. The range of temperature in the week was the greatest at Eccles, 35½, and the least at Liverpool, 12°; the mean range from all stations was 24½°.

The mean of the seven high day temperatures was the highest at Cambridge, 71⅜°, Blackheath, 71½°, and Brighton, 71½°; and the lowest at Liverpol, 62⅜°, and Wolverhampton, 66°; the general mean from all stations was 68°. The mean of the seven low night temperatures was the lowest at Eccles, 48¾°, Nottingham 50¼°, and Leicester and Wolverhampton, both 51½°; and the highest at Truro, 56½°, and Plymouth 56°; the mean from all stations was 53¾°. The mean daily range of temperature was the least at Liverpool, 8⅜°, and the greatest at Cambridge, 19½°; the mean daily range from all stations was 14⅜°.

The mean temperature of the air for the week from all stations was 58⅜°, being 3° higher than the value for the corresponding week in 1877. The highest was 61° at Blackheath and Brighton, and the lowest 55⅜° at Leicester.

Rain.—Rain fell generally on one or two days during the week. At Truro 0.86 inch fell, and at Plymouth 0.76 inch fell, whilst in the midland and eastern counties about one-tenth of an inch was measured. At Leicester and Leeds no rain fell; the average fall over the country was 0.18 inch.

The weather during the week was fine, but dull and cool, and the sky generally very cloudy.

Scotland: *Temperature.*—The highest temperatures of the air varied from 72° at Edinburgh and Dundee to 68° at Aberdeen and Greenock; the mean from all stations was 70°. The lowest temperatures of the air varied from 45° at Dundee to 50° at both Aberdeen and Greenock; the mean value from all stations was 48½°. The mean range of temperature from all stations was 21⅜°.

The mean temperature of the air for the week from all stations was 58⅜°, being the same as that of England, and 1⅜° higher than the value for the corresponding week in 1877. The highest was 60° at both Edinburgh and Dundee, and the lowest was 57° at Greenock.

Rain.—At Dundee and Greenock about two-tenths of an inch fell, at Leith only four-hundredths of an inch was measured; the average fall over the country was one-tenth of an inch.

Dublin.—The highest temperature of the air was 75½°, the lowest 40⅜°, the range 34⅜°, the mean 60°, and the fall of rain 0.04 inch.

James Glaisher.

Variorum.

THE MINISTRY OF FLOWERS.—Flower missions grow almost as rapidly as the flowers themselves. There are depôts everywhere. Busy hands gather in the country these "stars that in earth's firmament do shine," and transport them to the city, where they are soon scatteréd amongst hospitals and workhouses, courts and alleys, cellars and garrets. These united ministers open doors and hearts closed to the garrulous human tongue, and are the means of bringing to light misery, which, but for them, would lie concealed in the dark corners of the earth. The bearer of the sweet freight of flowers is soon surrounded by ragged children craving a blossom, and is led by them into scenes of sin, shame, penury, or suffering, such as neither pen nor pencil could paint. Appended to each nosegay is a text of Scripture, distinctly printed and illuminated, and together they not unfrequently become evangelists to many who would listen to no other Gospel teaching. It is touching to see the wan face brighten and the dull eye glisten as these heaven-sent ministers appear. It is hopeful, if sad, to watch the sin-soiled start and weep at sight of a Primrose or Violet, recalling the early home and purity of childhood; and it is affecting to know that the carefully designed texts are treasured, and even framed, when the fragrance of the flowers has departed. Some, given to foreigners in their own language, have been forwarded to their native country in proof of the tender care of the stranger. Thus, this "nature which is beautiful and dumb," wakes up the springtide of hope in many a despairing soul. It is accompanied by Christian love and sympathy, and so is the pioneer of aid temporal and spiritual, when such aid is as unexpected as needed. There could scarcely be a more graceful or a more pleasing occupation for the young than to roam the mead and woodland in search of these treasures, and then to arrange and despatch them to their contemporaries in the great city, ready to receive and distribute them. Hundreds of thousands of nosegays are thus culled and utilised during Flora's bountiful reign. May they be multiplied, until every wayworn pilgrim learns to say with Longfellow—

"In all places, then, and in all seasons,
Flowers expand their light and soul-like wings,
Teaching us, by most persuasive reasons,
How akin they are to human things."

The Quiver.

THE OAKS OF FONTAINEBLEAU.—One of the four finest Oaks of Fontainebleau is to be seen at Bas-Bréau, close to Barbison. This tree is called sometimes "le Briarée," its older and more significant name, and sometimes the "Bouquet de l'Empereur." Many of the trees in Fontainebleau forest are remarkable for the multiplication, so to speak, of their stems; for the forks of the upward-springing branches are, in some instances, so near the ground that it is difficult, if not impossible, to say which is the true trunk of the tree. Thus, the strange-looking Oak at Nid de l'Aigle has no fewer than ten such pseudo-trunks, with scarcely any perceptible difference of size among them. You will see this wonderful tree in the course of a beautiful drive, commencing from Fontainebleau with the road named after Louis Philippe, which rises on a hill-side bordered by black Pines. After a noiseless journey this way and that, the maze being unravelled for you by M. Denecourt's red and blue marks on the tree-trunks, you come to a rocky region, and are then compelled to climb a rough winding path, in order that you may view the Salamander. You not only see this monstrous petrefaction, but many shapes besides, in which you may trace a fanciful resemblance to almost any and everything you please; and you will notice here also that some of the Oaks are more like those of English growth, being stunted in height, ample of circumference, and much gnarled and knotted. Lizards and innocent green snakes, against whose life a churlish ignorance sets its cruel face, move in the carpet of brown leaves that the vanishing years have strewn. *Picturesque Europe.*

FRESH AIR.—Fresh air is an element upon which everybody professes to set a high value; yet we frequently meet with people who, by dint of greenbazing the doors, sand-bagging the windows, stuffing up unused chimneys, pertinaciously closing the windows of a railway-carriage during a two hours' journey in July, and other similar expedients, endeavour to exclude the pure breath of heaven as they would so much choke-damp or sewage fumes. In these days of scientific progress it is surprising that so much ignorance exists on the subject of ventilation; for, while the terms "oxygen" and "carbonic acid" are familiar to anybody, most of us are still in the dark as to the best means to be adopted for securing the one and getting rid of the other. Those who take so much trouble in stopping up every crevice, to prevent, as they say, the ingress of "draughts," never dream that they are at the same time taking every precaution against the escape of poisonous gases, the inhalation of which must ultimately produce a train of disorders, the mere catalogue of which would fill a page of a large-sized medical treatise. Ventilation, as it is understood by such persons, includes amongst its happy effects cold in the head, sore throat, toothache, and tic-douloureux, all of which may certainly be produced by draughts; but this is not ventilation. Much of this misconception is due to the ignorance of builders, who appear to think that ventilation is altogether out of their line, and consequently make no provision for it. In large public buidings—as schools, churches, and clubs—some attempt is usually made to keep the contained air pure; but in ordinary dwelling-houses there is nothing for it but to open the windows, at the risk of entailing upon delicate or non-acclimatised inmates the painful disorders just alluded to. *Science for All.*

Enquiries.

He that questioneth much shall learn much.—BACON.

BOLTING CAULIFOWERS.—One half of my crop is bolting into bloom as soon as they are ready to cut; the heads are also small, and not like former crops. Have I got bad seed, or is the culture likely to be at fault? Can any intelligent practical man give me an explanation? *B. B.*

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

CARNATION: *H. M. Hewett, Chesterfield.* Crimson bizarre: first-rate in every respect—marking, colour, quality, form of petal, texture, and smoothness. A most desirable variety, something between J. D. Hextall and Captain Stott, but quite dissimilar. What is it to be called?—*Charles Buckland, Chesterfield.* Neither of the flowers sent have any pretension to first-class excellence. The rose-flake is far behind the best of the present day.—*No Name or Advice, post mark, Wakefield.* Six blooms: four scarlet-flakes—Nos. 16, 29, 39, and 40; one crimson bizarre, No. 2; and one purple-flake, No. 45. Had been packed with dry cotton-wool, and consequently were too much collapsed to admit of a critical opinion on their merits. Judging from the remains, all are worth further trial, though neither indicated any advance upon the best existing varieties. *E. S. D.—C. B. Saunders.* Very good border flowers, but nothing more, various in colour. We know of few subjects more interesting than a bed of seedlings of Carnations and Picotees, and they are specially good as town flowers.

CELERY: *W. White.* The trench should be well dressed with good rotted dung before planting. Subsequently there is nothing better for the plants than well diluted household or stable sewage.

CUCUMBERS: *F. Ford.* The Cucumbers are suffering from an attack of the too well-known Cucumber disease, of the origin or cause of which no satisfactory explanation has yet been given. We know of no cure for it, and can only recommend you to adopt the preventive measure of using entirely fresh soil, and a change of seed.—*J. C.* Your seedling, which you propose to call Telephone, is not one we can commend. It is too thick, has too long a "handle," and is too dull in colour to be a taking variety.

FUCHSIAS: *J. M. S.* We think it a clear case of sun scorching while the leaves were covered with water or condensed moisture.

FUNGUS: *S. R., Leyton.* The name of the fungus is Polyporus squamosus, not the soft and delicious "oyster," but the pachydermatous "saddle-flap."

HEATHS: *A Novice.* Keep them in a light airy house, on a bed of ashes if possible, until the end of July or beginning of August, and then stand them outside exposed to the sun, until about the middle of September, the bed of ashes on which they are placed being sufficiently deep to exclude worms from the pots.

INSECTS: *C. R.* The insect fastened on your Potato leaf is the pupa of a ladybird (Coccinella) which has fed upon aphides. The hole in the leaf was made by some other insect, or by some other cause. *J. O. W.*

LANDSCAPE GARDENING: *An Old Subscriber.* Your question is much too vague for us or any of our correspondents to answer satisfactorily. Consult some local landscape gardener, who has a knowledge of trees.

MANGOES: *J. Hart, Jamaica.* We regret to say that the fruit arrived in a rotten condition, in fact, in a state of fermentation. Could you not pack them in powdered charcoal, or cork dust, with a few holes in the lid?

NAMES OF PLANTS: *C. M. W.* 5, Phyllocactus crenatus; 6, P. grandis; 7, P. phyllanthoides.—*J. A. G.* Please send another specimen.—*Mrs. Brooke.* Pyrus torminalis, the wild Service tree.—*X.* Senebiera coronopus and Nasturtium sylvestre.—*A Subscriber.* Diplacus glutinosus.—*S. Ray.* Begonia semperflorens.—*G. Fairgubar.* Tradescantia virginica.—*K. & F.* 1, Deschampsia cæspitosa var. littoralis; 2, Bromus arvensis; 3, Triticum repens var. Leersianum; 4, Apera spica-venti; 5, Juncus lamprocarpus; 6, Triticum caninum.—*P. A. S.* Lilium testaceum.—*See and Say Nothing.* The Orchid is Aerides suavissimum; 4, is probably Veronica spicata. The others are too scrappy to name. Send better specimens.—*J. C.* Trachilium cœruleum.—*J. B.* 1, Euphrasia officinalis; 2, Filago germanica; 3, Hypericum pulchrum; 4, H. humifusum; 5, one of the many forms of Hieraceum sylvaticum; 6, Rhinanthus Crista-galli.—*D. G. D.* 1, Torenia Fournieri; 2, Cornus mas, var. variegata; 3, Cephalotaxus drupacea; 5, Taxus baccata. The others we are unable to determine without flowers.—*H. E. Watney.* Valeriana officinalis.—*Tourist, Guernsey.* 1, Euphorbia Paralias; 2, Sedum album; 3, Lycium barbarum.—*W. W. A.* Clerodendron fragrans flore-pleno.

ONCIDIUM ROSTRANS: *E. Morse.* It was described by Professor Reichenbach in our number for June 12, 1875, p. 748.

PEACH PRUNING: *H. C.* We do not know all the circumstances, but the principle is bad.

PLUM TREE AND FERNERY: *Crux.* Yes, it will kill the tree eventually if you do not take precautions to prevent the earth from covering the stem. Enclose it with tiles.

TEA LEAVES: *A. Knowles.* Practically of no manurial value.

TECOMA JASMINOIDES: *W. W. A.* No wonder you fail to bloom this in your Orchid-house. The place is too hot for it. It is an Australian plant, and makes a first-rate greenhouse climber. The Bignonia and Stephanotis probably fail to flower for want of rest, and most assuredly that is the case with Bougainvillea.

VIOLA: *W. W. P.* The pieces received are attacked by a fungus peculiar to the Viola, Æcidium violæ. We would advise you to hoe the plants up and burn them.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

ERRATUM: In our report of the Royal Botanical Society's Show, at p. 58, we inadvertently wrote Messrs. Cranston & Mayos, instead of Messrs. Cranston & Co.

CATALOGUES RECEIVED.—J. Vander Swaelman (The Lily Nursery, Gendbrugge, Ghent, Belgium), Special Trade List of Plants and Bulbs.

COMMUNICATIONS RECEIVED.—J. O.—W. E.—R. H. & Co.—E. Orpet (yes).—W. D. P.—J. W. L.—H. G. R.—James Backhouse & Son.—Sir T. L.—L. & B.—W. C.—T. W.—C. M.—J. U.—A. S. K.—A. K., Warsaw (many thanks).—Nether.—Young Gardener.—G. H.—R. C. H. B. F.—G. M.—J. M.—N. E. B.—J. F. J.—W. B. H.—D. T. F.

Markets.

COVENT GARDEN, July 18.

Heavy supplies of soft fruit have reached us during the week, and prices have been good, but show signs of a downward tendency. Grapes are in bad demand, and have experienced a considerable fall. Peaches and Nectarines still meet with a ready sale. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Begonias, per doz.	6 0–12 0	Hydrangea, per doz	12 0–24 0
Bouvardias, do	12 0–24 0	Lilium eximium, doz.	18 0–36 0
Calceolarias, p. doz.	6 0–18 0	Mignonette, per doz.	3 0– 9 0
Campanula, per doz.	6 0–12 0	Musk, per dozen	2 0– 6 0
Coleus, per dozen	3 0– 9 0	Myrtles, per doz.	6 0–12 0
Crassula, per dozen	12 0–36 0	Palms in variety, each	2 6–21 0
Cyperus, do.	6 0–12 0	Pelargoniums, per dozen	6 0–24 0
Dracæna terminalis	30 0–60 0	— scarlets, zonal, per dozen	4 0– 9 0
— viridis, per doz.	18 0–24 0	Petunias, per dozen	4 0–12 0
Erica, in var., doz.	12 0–36 0	Rhodanthes, p. doz.	6 0–12 0
Euonymus, var., doz.	6 0–24 0	Roses, per dozen	18 0–60 0
Ferns, in var., doz.	4 0–18 0	— Fairy, per doz.	9 0–12 0
Ficus elastica, each	2 6–15 0		
Foliage Plants, various, each	2 0–10 6		
Fuchsias, per dozen	4 0–18 0		

CUT FLOWERS.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 blooms	0 6– 1 0	Myosotis, 12 bun.	3 0– 6 0
Arum Lily, per doz.	3 0–12 0	Pelargoniums, 12 spr.	0 9– 2 0
Bouvardias, per bun.	1 0– 4 0	— zonal, 12 sprays	0 4– 1 0
Calceolaria, 12 bun.	9 0–18 0	Phlox, 12 bunches	6 0–12 0
Campanula, 12 bun.	6 0– 9 0	Pinks, var., 12 bun.	4 0– 9 0
Carnations, 12 bunch.	4 0–12 0	Primula, double, per bunch	1 0– 2 0
Cornflower, 12 bun.	3 0– 6 0	Pyrethrum, 12 bun.	3 0– 6 0
Eschscholtzia, 12 bun	2 0– 6 0	Roses (indoor), doz.	1 6–12 0
Eucharis, per doz.	6 0–12 0	— (outdoor), 12 bun.	4 0–12 0
Gardenias, 12 blms.	3 0– 9 0	Moss), 12 bunch.	6 0–18 0
Gladioli, various, 12 spikes	1 6– 4 0	Stephanotis, 12 sp.	3 0– 9 0
Heliotropes, 12 sp.	0 6– 1 0	Stocks, 12 bunches	4 0– 9 0
Jasmine, 12 bunches	6 0–12 0	Sweet Peas, 12 bun.	2 0– 6 0
Mignonette, 12 bun.	3 0– 6 0	Sweet Sultan, 12 bun.	6 0– 9 0
		Tropæolum, 12 bun.	1 0– 4 0

FRUIT.

	s. d. s. d.		s. d. s. d.
Apricots, per dozen	1 6– 3 0	Melons, each	3 0– 8 0
Cherries, per lb.	0 6– 1 6	Oranges, per 100	6 0–12 0
Figs, per dozen	4 0–10 0	Peaches, per dozen	4 0–18 0
Grapes, per lb.	1 0– 6 0	Pine-apples, per lb.	2 0– 8 0
Lemons, per 100	4 0–12 0	Strawberries, per lb.	0 6– 3 0

VEGETABLES.

	s. d. s. d.		s. d. s. d.
Artichokes, English Globe, doz.	.. 2 0– 4 0	Herbs, per bunch	.. 0 2– 0 4
Aubergines, p. doz.	3 0– ..	Horse Radish, p bun.	4 0– ..
Beans, French, per lb.	.. .. 0 9– ..	Lettuces, Cos, Eng., per score	.. 1 6– 2 6
— broad, per bush.	3 0– ..	Mint, green bunch	0 4– 0 6
Beet, per doz.	.. 1 0– 2 0	Onions, young, bun.	0 4– 0 6
Cabbages, per doz.	.. 1 0– 2 0	Parsley, per bunch	0 4– ..
Carrots, per bunch	.. 0 4– 0 6	Peas, green, per qr.	1 6– 2 0
Cauliflowers, per doz.	4 0– 6 0	Radishes, per bunch	0 1– 0 3
Celery, per bundle	.. 1 6– 2 0	— Spanish, doz.	.. 1 0– ..
Chilis, per 100	.. 5 0– ..	— New Jersey, doz.	2 0– ..
Cucumbers, each	.. 0 4– 1 6	Shallots, per lb.	.. 0 6– ..
Endive, per doz.	.. 1 0– 2 0	Spinach, per bushel	2 0– 3 0
Endive, Batav. dozen	1 6– ..	Tomatos, per dozen	2 6– 3 0
Garlic, per lb.	.. 0 6– ..	Turnips, new, p. bun.	0 6– ..

Potatos:—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

SEEDS.

LONDON: *July* 17.—The seed market to-day, as might have been expected, was thinly attended, and the business doing was in very narrow compass. Red Clover is for the moment quite neglected, the stocks of yearling seed left on hand being too limited to admit of speculation. With regard to Trefoil, no disposition to purchase the same has yet developed itself: in view of the large quantity promised from abroad, the opinions of buyers here, as to the prices which should prevail, are naturally pitched in a low key. The samples of new English Trifolium coming forward exhibit good quality, superior to the general run of French. There is no supply at present to hand from France—the quotations current there being several shillings per cwt. above those which content the English growers. New home-grown Rape seed now offers freely; and the rates accepted show a substantial decline from those recently current for 1877 seed. The new crop of Rye in Essex is now being marketed. Of large blue Peas the stock seems about exhausted, and the prospects of the new crop are said to be poor. Hemp and Canary seed move off slowly on former terms. Feeding Linseed keeps firm with small offerings. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the best that could be said as regards Wheat was that there was a steady market at Friday's advance of 1*s.* per quarter on Russian and American qualities. Barley was quiet at about late rates. Malt was unchanged. Oats were in moderate request, at an improvement of about 6*d.* per quarter, and there was more doing in Maize, at in some instances 1*s.* per quarter more money. Beans, Peas, and flour were quiet but firm, quotations remaining the same in each case.—On Thursday English Wheat was not so well held, and as regards foreign the Monday's prices were with some difficulty supported. Barley had a downward tendency, and the firmness of the market for Oats was not altogether maintained. Maize was in moderate request at the late improvement. Beans and Peas were steady, and no change was quoted in the value of flour.—Average prices of corn for the week ending July 13:—Wheat, 44*s.* 8*d.*; Barley, 39*s.* 10*d.*; Oats, 26*s.* 4*d.* For the corresponding period last year:—Wheat, 62*s.* 3*d.*; Barley, 34*s.* 7*d.*; Oats, 28*s.* 10*d.*

CATTLE.

At the Metropolitan market on Monday there was a large supply of beasts, including about the same number of American as last week; the quality of both foreign and British was very good. Prices were lower on the average, and to effect a clearance rather lower than we quote had to be submitted to. There was a fair demand for sheep at about late rates. Trade was dull for lambs, and late quotations were barely supported. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.*, and 5*s.* 4*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.*; lambs, 7*s.* 4*d.* to 8*s.*; pigs, 4*s.* to 4*s.* 10*d.*—On Thursday trade was dull. Beasts sold slowly, and were rather weaker than on Monday. For sheep the demand was inactive at about late rates. Lambs were quieter, and calves and pigs were disposed of at Monday's quotations.

HAY.

Tuesday's Whitechapel report states that there was a fair supply of fodder on offer. Trade was good, at the extreme prices of Saturday. Prime Clover 100*s.* to 140*s.*; inferior, 85*s.* to 95*s.*; prime meadow hay, 90*s.* to 106*s.*; inferior, 70*s.* to 85*s.*; straw, 42*s.* to 57*s.* per load.—For the moderate supply offering on Thursday a steady demand prevailed, at unaltered prices.—Cumberland Market quotations:—Superior old meadow hay, 105*s.* to 116*s.*; inferior, 86*s.* to 95*s.*; new hay, 70*s.* to 95*s.*; superior old Clover, 132*s.* to 140*s.*; inferior, 110*s.* to 120*s.*; new Clover, 84*s.* to 100*s.*; and straw, 54*s.* to 60*s.* per load.

POTATOS.

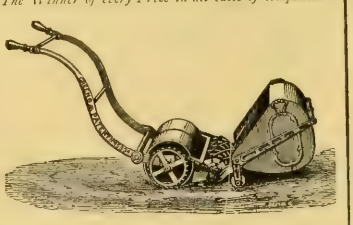
The Borough and Spitalfields reports state that there are good supplies of the various descriptions of Potatos, and trade remains very slow. Regents, 120*s.* to 160*s.*; Essex Rose, 90*s.* to 110*s.*; kidneys, 125*s.* to 140*s.*; Shaws, 80*s.* to 100*s.*; Jersey kidneys, 140*s.* to 180*s.*; ditto, round, 100*s.* to 120*s.*; Guernsey kidneys, 140*s.* to 180*s.*; ditto, round, 100*s.* to 130*s.*; Cherbourg round, 90*s.* to 110*s.*; ditto, kidneys, 100*s.* to 150*s.* per ton; Dutch round, 1*s.* 6*d.* to 2*s.* 9*d.* per bushel.—The imports into London last week were upon a very trifling scale. They consisted of 6421 baskets from Rotterdam, 356 packages Boulogne, 225 bags 35 bales Dunkirk, 100 bags Hamburg, and 125 Antwerp.

GREAT REDUCTION IN THE PRICE OF

GREEN'S PATENT "SILENS MESSOR,"

Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1878.

The Winner of every Prize in all cases of competition.



To cut 6 inches	Price	£1 15 0
Can be worked by a Lady.		
To cut 8 inches	"	2 10 0
Can be worked by a Lady.		
To cut 10 inches	"	3 10 0
Can be worked by a strong Youth.		
To cut 12 inches	"	4 10 0
Can be worked by a Man.		
To cut 14 inches	"	5 10 0
Can be worked by a Man.		
To cut 16 inches	"	6 10 0
This can be worked by one Man on an even lawn.		
To cut 18 inches	"	7 10 0
Can be worked by Man and Boy.		
To cut 20 inches	"	8 0 0
Can be worked by Man and Boy.		
To cut 22 inches	"	8 10 0
If made stronger, suitable for Donkey, 30*s.* extra.		
To cut 24 inches	"	9 0 0
If made stronger, suitable for Donkey, 30*s.* extra.		

Prices of Donkey, Pony, and Horse Machines on application.

☞ Carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

The superiority of our Machines over these of all other makers is universally acknowledged. They will Cut either Long or Short Grass, Bents, &c., wet or dry.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

These Advantages no other Lawn Mowers possess.

Every Lawn Mower sent out is warranted to give entire satisfaction, otherwise it may be returned at once, free of cost to the purchaser.

The largest stock of Mowers kept in London, and including all sizes from 6 to 48 inches, is to be seen at our London Establishment, 54 and 55, Blackfriars Road, where purchasers can select out of several hundred Machines, and have their orders executed the same day they are received.

N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an efficient staff of Workmen is kept at both places.

GREEN'S PATENT ROLLERS

For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.

SUITABLE FOR HAND OR HORSE POWER.



They can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or from the Manufacturers,

THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS;

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

*** Carriage paid to all the principal Railway Stations in the United Kingdom.

Descriptive Illustrated Price List Free on Application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck.

BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21*s.* per ton.

Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5*s.* 6*d.*; 5 bags, 25*s.*; 12 bags, 50*s.*

Fresh SPHAGNUM, 10*s.* 6*d.* per bag.

WALKER AND CO., Farnborough Station, Hants.

PEAT SOIL, PEAT SOIL.—Brown Fibrous, good quality, for Orchids, Pot Plants, Ferns, &c., £6 6*s.* per truck. Black, good quality, for American Plants, Rhododendrons, Azaleas, Heaths, &c., 17*s.* per ton, or 6-ton truck for £4 10. Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Cash with order. Sample sack, 5*s.* 6*d.*, or four sacks, 20*s.*

HOLDER AND SON, Crown Nurseries, Reading.

COCOA-NUT FIBRE REFUSE.

As supplied by M. H. Bentote to the Queen, Prince of Wales, Emperor of Germany, Messrs. Carter & Co., Veitch & Sons, Wills Bull, Daniels, Ewing, &c.

3d. per bush.; 100 for 20s.; truck (loose, 250 bush.), **30s.**

4 bushel bags 4d. each.

LIGHT BROWN FIBROUS PEAT.—5*s.* 6*d.* per sack, 5 sacks 25*s.*, 12 for 45*s.*

BLACK FIBROUS PEAT.—5*s.* per sack, 5 sacks 22*s.*, 12 for 40*s.* Sacks 4*d.* each.

COARSE SILVER SAND.—1*s.* 9*d.* per bushel, 15*s.* half ton, 26*s.* per ton, in 1 cwt. bags 4*d.* each.

YELLOW FIBROUS LOAM.—1*s.* per bushel, 13*s.* half ton, 23*s.* per ton.

LEAF MOULD.—1*s.* per bushel, 13*s.* half ton, 23*s.* per ton, in 1 cwt. bags 4*d.* each.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack. All kinds of MANURES, GARDEN STICKS, TOBACCO CLOTH and PAPER, and every GARDEN REQUISITE.

Write for free PRICE LIST. Goods free to rail.

Post-office Orders payable at King Street, Covent Garden, W.C. Cheques crossed London and County Bank, Covent Garden, W.C.

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(Three Minutes from Covent Garden Market.)

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FOR ALL CROPS.

Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 acres of Land.

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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.

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SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1*s.* 6*d.*, 2*s.* 6*d.* and 5*s.* per bottle. May be obtained through all Seedsmen, or direct from

JOHN SCOTT, The Royal Seed Stores, Yeovil.

The Orchardist, by J. Scott, price 3*s.* 6*d.*, the best work in the English language on Fruit Trees and their Cultivation.

KREPIN.—A new patented liquid for Garden, Field, House, and Stable use, for the immediate destruction of all kinds of Insects, Eggs, Larvæ, without injury to Plants, Fruits, or Animals. Approved of and recommended by the German Ministry of Agriculture, and other high authorities on the Continent.

Sold in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 10*s.* each. Extra for Vaporisers, 1*s.* 3*d.* and 3*s.* 6*d.* May be obtained through all respectable Nurserymen and Seedsmen. Chief Depôt—

H AND F. BUNTEN, 116, Queen Victoria Street, E.C.

ELLIOTT'S NEW SHADING FOR GLASS HOUSES, "SUMMER CLOUD," is applied in a manner similar to ordinary paint, and can be highly recommended for its Pleasing Appearance, the Healthful and Beautiful Effect it has on all Plants grown under it, the ease with which it can be applied, and for its great economy.

Manufactured solely by H. ELLIOTT, Seedsman, Braywick, Maidenhead, Berks, and Sold in Canisters at 1*s.* 6*d.*, 2*s.* 6*d.*, 5*s.*, and 10*s.* each.

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NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.

TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide 6*d.* per yard, or 50 yards 20*s.*

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide 1*s.* per yard: ½-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard.

TIFFANY, 6*s.* 6*d.* and 7*s.* 6*d.* per piece of 20 yards.

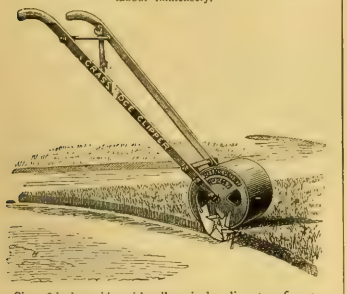
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GREEN'S PATENT GRASS EDGE CLIPPER,

Specially Designed for

Cutting the Overhanging Grass on the Edges of Walks, Borders, Flower Beds, &c.

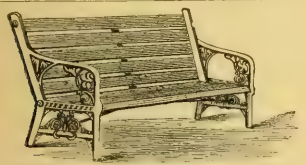
It is simple in construction, is easily worked, and reduces labour immensely.



Size—8 inches wide, with roller 9 inches diameter, £1 10s.

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Garden Seats, Awnings and Tents, Rustic Tables, Chairs, and Flower Stands, Lawn Mowers, Garden Rollers, Water Barrows, Wheelbarrows, Garden Tools, Fancy Wirework, Birdcages, Hammocks, and all kinds of Garden Furniture at lowest marked prices. *Catalogues post-free.*

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KENT PEATS or LOAM supplied at lowest rates in any quantities.

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SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists. Strongly recommended in the *Gardener*, and by many first-class Gardeners. Has an established reputation for efficacy.

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Protect Fruit Trees from Frost and Birds.

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STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck-loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

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Manufacturers of New and Improved

POULTRY FENCES.



This fence is a much stronger description of fencing than the lattice panels with loose standards, and is more portable, being made in lengths 6 feet long with double pronged feet. A run or pen can be formed of any length or shape without extra cost; it is easily fixed or removed; the gate can be placed in any part of the fence.

PRICES:—

6 feet high, including all necessary Bolts and Nuts .. .. 5s. per yard.

Doorway complete, 2 feet wide, including Standards and Arched Stay . .. .. 13s. 6d. each.

Angle-iron Pillars for Corners, with Cast Ornaments .. .. 3s. each.

Carriage paid on orders of 40s. value. Orders executed on receipt.

NEW POULTRY LIST, with Illustrations, on application.

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HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.

The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof in indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

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"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

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A large variety of sizes, 15-oz., 12s. 6d.; 21-oz., 16s. 6d. per 100 feet. Large sizes, in Cases, for Cutting up—15-oz. 4ths, 30s.; 3ds, 40s. per 300 feet;—21-oz. 4ths, 30s.; 3ds., 40s. per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

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B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. & 21-oz.



KEEP OUT THE FROST, DRIVE OUT THE DAMP, and WARM YOUR GREENHOUSES or other Places, by MEE'S PATENT PORTABLE COMBINATION HOT-WATER APPARATUS.

Price, with packages, £4 10s.

F. AND J. MEE, Hot-water Engineers and Patent Boiler Makers, 11, Wood Street, Liverpool.

PARIS EXHIBITION.

FOR PORTMANTEAUS, TRUNKS, *BAGS and HAT CASES,*

GO TO

RILEY & CO., 283, Strand (opposite Norfolk Street).

Also the TOURIST COMPANION. Store Prices.

BUNYARD'S NETTINGS,

for Garden use: 2 yards wide 2d., and 4 yards wide 4d. per yard.

BUNYARD'S SHADING,

35 inches 4d., and 72 inches 6d. per yard; ditto Cotton, 60 inches, 4d., 5d., and 8d. per yard.

BUNYARD'S LAWN TENNIS NETS,

White and Tanned.

BUNYARD'S MARQUEES,

Ready in Stock.

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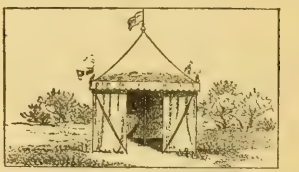
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Square, Round, French, Canopy, and all other Shapes in Stock.

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Are the Cheapest and Best.



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BRANCHES AT { 4, Hart Street, Mark Lane, E.C.
{ 10, Week Street, Maidstone, Kent.

Illustrated Price Lists and Samples Post-free.

C A L I C O.

24 inches wide, 100 yards for 10s.

For Shading Greenhouses, Seed Beds, and for Butter Cloths and Dusters. Delivered on rails at Burnley.

Post-office Order to accompany each Order, payable to W. E. KAY, Manufacturer, Burnley.



BAYLISS, JONES & BAYLISS,

Patentees and Manufacturers of Wrought Iron

CONTINUOUS BAR FENCING,

Iron Hurdles, Strained Wire Fencing,

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SCALE OF CHARGES FOR ADVERTISING.

Head Line charged as two.

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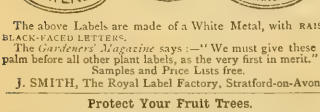
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7. Shakespeare on the Cession of Cyprus (profusely illustrated).
8. The Queen's Proctor intervening.
9. Newmarket July.
10. What will they say at the Polling Booth.
11. The World on Wheels.
12. The Chat of the Fair.
13. The Fashions of the Fair.
14. Upon Living and Growing Old.
15. Mr. Lawson's Concert.
16. A Satire.
17. Turning over Fresh Leaves.

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The Medical Profession for over Forty Years have approved of this pure solution as the Best Remedy for

ACIDITY OF THE STOMACH, HEARTBURN, HEADACHE, GOUT, AND INDIGESTION,

and as the safest Aperient for Delicate Constitutions, Ladies, Children and Infants.

DINNEFORD'S MAGNESIA.

E. LAZENBY AND SON'S PICKLES, SAUCES, and CONDIMENTS.—E. LAZENBY AND SON, sole proprietors of the celebrated recipes, and manufacturers of the pickles, sauces, and condiments so long and favourably distinguished by the name, beg to remind the public that every article prepared by them is guaranteed as entirely unadulterated.—99, Wigmore Street, Cavendish Square (late 6, Edward Street, Portman Square), and 18, Trinity Street, London, S.E.

HARVEY'S SAUCE.—CAUTION.—The admirers of this celebrated sauce are particularly requested to observe that each bottle prepared by E. LAZENBY AND SON bears the label, used so many years, signed "*Elizabeth Lazenby.*"

HEALTH or SICKNESS.—It has been often and truly asserted, that want of forethought ruins thousands and kills hundreds; surely in the matter of personal suffering remedial means should always be available. Nothing preserves the health so well as an occasional alterative, when the heat is oppressive and the nerves are unstrung. Holloway's Pills act admirably on the stomach, liver, and kidneys, and so thoroughly purify the blood that they are most efficient in warding off nausea, fever, diarrhœa, dysentery, and other maladies always rife throughout our summers. All who have the laudable desire of maintaining their own and their families' health, cannot do better than trust to Holloway's Pills, which cool, regulate, and strengthen the system.

CARSONS' PAINT.

PATRONISED BY

HER MAJESTY THE QUEEN. H.R.H. THE PRINCE OF WALES. H.R.H. THE DUKE OF EDINBURGH.

The British Government. The Indian Government. The Colonial Government.
10,000 of the Nobility, Gentry, and Clergy. Railway and Canal Companies. Collieries, Ironmasters, &c.

IS EXTENSIVELY USED FOR ALL KINDS OF

OUTDOOR WORK.

IT IS SPECIALLY APPLICABLE TO

WOOD, IRON, BRICK, STONE, and COMPO.

Sold in all Colours. 1 Cwt. and Oil Mixture Free to all Stations. Prices, Patterns, and Testimonials Free.

OILS and VARNISHES of EVERY DESCRIPTION.

WALTER CARSON & SONS,

LA BELLE SAUVAGE YARD, LUDGATE HILL, LONDON, E.C.; 21, BACHELOR'S WALK, DUBLIN.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH,

MANUFACTURERS of PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.

DESCRIPTIVE LISTS Free by Post. Orders amounting to 40s. Carriage Paid.

36-GALLON SWING WATER BARROW.



The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

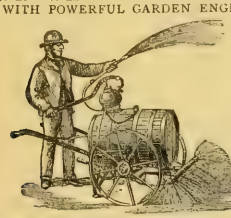
Cash prices. Carriage paid to any Station in England.

Price	£2 10 0
Ditto, with two tubs	3 8 0
Spreader and Valve	extra 0 15 0
Garden Engine and fitting for tub ..	2 7 0
18-Gallon Barrow, with Galvanised Tank	2 2 0
30-Gallon ,, ,,	2 12 0

THE HAMBURGH FIRST PRIZE

LAWN WATERING MACHINE,

WITH POWERFUL GARDEN ENGINE.



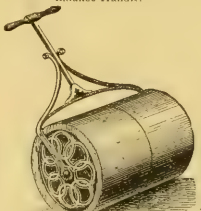
Cash Prices. Carriage paid to any station in England.

Complete (36 gallons)	£6 10 0
If without Pump	3 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLLER, Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by 18 in. diam.		..	£1	17 6
20 ,,	20 ,,	..	2	5 0
22 ,,	22 ,,	..	2	12 6
24 ,,	24 ,,	..	3	5 0

DOUBLE-CYLINDER.

18 in. long by 16 in. diam.		..	£2	5 0
20 ,,	18 ,,	..	2	12 6
22 ,,	20 ,,	..	3	5 0
24 ,,	22 ,,	..	3	15 0
26 ,,	24 ,,	..	4	5 0

PORTABLE PUMP.



For Liquid Manure or Water.

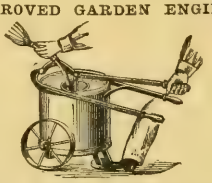
With stand ..	£2 5 0
10 feet of India-rubber Suction Pipe, with Clip and Strainer ..	1 10 0

Powerful Garden and Conservatory Engine.

Can be used with a pail or Water-barrow. £2 2s.



IMPROVED GARDEN ENGINE.



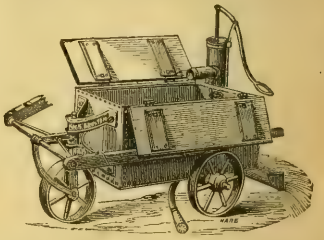
A first class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices. Carriage paid to any Station in England.

15 gallons, £3 10s. | 20 gallons, £4 | 25 gallons, £4 10s.

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£10	10	0
,, 200 ,, ...	12	10	0
,, 250 ,, ...	14	10	0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	3	15	0
Spreaders .. .. each	0	15	0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.

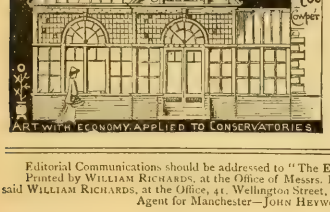


With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

To hold 60 gallons with one tank ..	£6 0 0
,, 100 ,, ... ,, ..	8 0 0
Valve and Spreader for ditto	1 5 0

Goods amounting to 40s. sent carriage free to any of the principal Railway Stations in England. Cash or reference respectfully requested with transmission of all first orders.



T. H. P. DENNIS & CO.

MANSION HOUSE BUILDINGS,

QUEEN VICTORIA STREET, LONDON, E.C.,

CONSERVATORY AND GREENHOUSE BUILDERS,

AND

HOT-WATER ENGINEERS.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

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Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

BRACKLEY AGRICULTURAL and HORTICULTURAL SOCIETY.
The ANNUAL FLOWER SHOW of this Society will be held on TUESDAY, August 6, 1878, by Mr. Weston's kind permission, in the picturesque grounds at the rear of the College Chapel, Brackley. The magnificent Band of Her Majesty's Coldstream Guards has been engaged for the occasion. Schedules and all information will be afforded upon application to the Hon. Secs.,
R. J. AND A. H. RUSSEL, Brackley.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY OF MANCHESTER.
SPECIAL EXHIBITION for COTTAGERS on SATURDAY, August 3.
Schedules of Prizes may be obtained from
BRUCE FINDLAY, Curator and Secretary,
Royal Botanic Gardens, Manchester.

MAIDENHEAD HORTICULTURAL SOCIETY.
The FIRST FLOWER SHOW will be held on THURSDAY, August 29, in the Hamblettonian Hall, Maidenhead.
Admission 2s. 6d. from 1 until 4 o'Clock, and 1s. from 4 until 7 o'Clock. Tickets may be had of the Treasurer, Mr. H. H. DURRANT; the Secretary; or at Mr. HODGE'S Library.
Entries close August 22, except for Cottagers, who can enter any time before the day of Show.
Schedule and Rules may be had of
Mr. H. J. MOUNT, Honorary Secretary.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—SPECIAL NOTICE.
At the AUTUMN SHOW in the WAVERLEY MARKET, EDINBURGH, on WEDNESDAY, September 11, the following SPECIAL PRIZES will be given, in addition to those in the Printed Schedule:—
For a Basket of Black Grapes, not less than 12 lb. in weight.—£5, £3, £2.
For a Basket of White Grapes, not less than 12 lb. in weight.—£5, £3, £2.
For the finest Table of Plants, 20 feet by 5 feet (for Gardeners and Amateurs).—£5, £4, £3, £2.
For three Palms, not less than 6 feet high.—£3, £2, £1.
For two Tree Ferns, not less than 4 feet stem.—£3, £2, £1.
For three Heaths in Flower.—£3, £1, 10s.
For two Pots Vallota purpurea.—£1, 10s.
FOR NURSERYMEN.
For three Palms, not less than 6 feet high.—£3, £2, £1.
For two Tree Ferns, not less than 4 feet stem.—£3, £2, £1.
The Shows of the Society are open to all Exhibitors, whether members of the Society or not.
JOHN STEWART, Hon. Sec.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches. Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

TO BE SOLD, a great bargain, TWENTY-THREE Specimen STOVE PLANTS, the property of a gentleman in Yorkshire. All particulars on application to JAMES DICKSON AND SONS, Newton Nurseries, Chester.

Our New
ARCHANGEL MATS
Have just arrived. Lowest prices on application.
C. J. BLACKITH AND CO.,
Cox's Quay, Lower Thames Street, London, E.C.

B. MALLER, LEWISHAM, has to offer for cash 3000 GREVILLEA ROBUSTA in 48-pots at 75s. per 100. Less number than 50, 12s. per dozen.

Healthy Plants in Pots of
LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

ROSES.—Visitors to the Nurseries are invited to inspect our extensive Collection of ROSES, which are now in magnificent bloom.
CRANSTON'S Nurseries, King's Acre, Hereford.

True Native Scotch Fir Seed.
R. AND A. MORRISON, NURSERYMEN, Elgin, are taking in Orders for the above for spring delivery. Price on application.

To the Trade.
STANDARD ROSES.
JNO. JEFFERIES AND SONS offer extra fine Standard ROSES, and will be pleased to quote Special Prices for delivery in Autumn.
JNO. JEFFERIES AND SONS, Royal Nurseries, Cirencester.

Venus' Fly-Trap.
DIONÆA MUSCIPULA.—Nice plants with good traps, of this interesting Fly-catcher, 30s per dozen.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

To the Trade.—New Roses of 1878.
GEO. COOLING begs to offer extra fine plants of thirty-two of the best varieties of the above, with plenty of buds for immediate working. List and price on application. The Nurseries, Bath.

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING
GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

Genuine Garden Seeds.
WM. CUTBUSH AND SON have for many years held some of the finest stocks of Seeds in the Trade, and they believe that no House can possibly supply better quality.
CATALOGUES post-free on application.
Highgate, London, N., and Barnet, N.

Vines—Vines—Vines.
J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

To the Trade.
RAPE SEED and WHITE MUSTARD.
H. AND F. SHARPE have fine samples of the above-named Seeds, suitable for sowing purposes. Prices, &c., may be had on application.
Seed Growing Establishment, Wisbech.

Cliunthus Dampieri Seed.
TO THE TRADE.
HURST AND SON beg to offer New Seed of CLIANTHUS DAMPIERI, in fine condition. Price on application.
6, Leadenhall Street, London, E.C.

Dutch Bulbs, First Quality Only.
C. G. VAN TUBERGEN'S Wholesale CATALOGUE of Hyacinths, Tulips, &c., will be forwarded free to the Trade on application to
Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.
C. G. VAN TUBERGEN, Nurseryman, Haarlem, Holland.

Cabbage Plants.
FOR SALE, a quantity of good strong Enfield Market Cabbage Plants on rail, at 2s. 6d. per 1000, can now be supplied by
J. WOOBERRY, Washington, Pulborough, Sussex.

STRAWBERRY PLANTS.—Strong and well rooted Runners can be had of the following sorts:—James Veitch, Sir Joseph Paxton, Eleanor, and British Queen. The fruit from the British Queen have been pronounced the finest in the market. Price List on application to
A. WHITEHEAD, Oakwood, Chislehurst.

New Cineraria Seed.
F. AND A. SMITH can now supply New Seed, saved from their unrivalled collection, in 1s., 2s. 6d., and 5s. packets. Price by weight to the Trade on application. Also Seedling Plants at 10s. per 100, or 1s. 3d. per dozen, post-free.
West Dulwich, S.E.

PEACHES.—Six extra large bearing standard trained on 6 feet stems, principally early sorts, and two STANDARD TRAINED APRICOTS on 6-feet stems, extra sized bearing trees. Those having such will please send particulars to
RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

For Autumn Exportation.
J. VANDER SWAELMEN'S ENGLISH TRADE CATALOGUE is now ready, containing the most commercial Plants and Bulbs. Free on application.
The Lily Nursery, Ghent, Belgium.

New Plant Catalogue.
HEATH AND SON beg to announce their New Illustrated CATALOGUE of ORCHIDS, FERNS, STOVE PLANTS, &c., is now ready, and will be forwarded, gratis and post-free, to all applicants.
HEATH AND SON, Nurserymen, &c., Cheltenham.

Hyacinths, Tulips, and other Dutch Bulbs.
BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of
Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

To Amateur Strawberry Growers.
RUNNERS, strong and well-rooted, are now ready, from H. D. Thury, President, Sir J. Paxton, and B. Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants post-free, 12s.
Manual on Strawberry Culture, 6d.
W. LOVELL, Strawberry Grower, Weaverthorpe, York.

To the Trade.
LILIUM AURATUM, 12s. per dozen, extra fine; HYACINTHS, White Roman; JONQUILS, double; NARCISS, paper-white and double Roman; ANEMONE FULGENS, SNOWDROPS, double and single; BEGONIA FROEBELI, double white NARCISS. Prices low, quality extra.
F. SANDER AND CO., Seed Growers, St. Albans.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

Decorative Pelargoniums.
F. AND A. SMITH are now distributing their new varieties of the above, which are strongly recommended for their bright, diverse, and original colours, dwarf robust habits, rendering the use of sticks and tying in a great many instances unnecessary. They have obtained much commendation and several awards, and will give general satisfaction. Lists with terms on application.
West Dulwich, S.E.

STRAWBERRY PLANTS.—100,000 Vicomtesse Héricart de Thury (Garibaldi), now ready for shifting into 6-inch pots, and all the best proved Covent Garden kinds. Special quotations for large quantities. Catalogue, with valuable information, post free.
H. CANNELL, F.R.H.S., Swanley, Kent.

B. MALLER has yet to offer 200 GREVILLEA ROBUSTA, fine, in 48-pots; 75s. per 100, 12s. per doz.
The Nurseries, Lee and Lewisham.

To the Trade.
NEW ENGLISH SOWING RAPESEED.
H. AND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.
Seed Growing Establishment, Wisbech.

Strawberries.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE PRICED CATALOGUE of the above is Now Ready, and will be sent post-free on application.
Highgate, London, N., and Barnet, Herts.

Superb Double Hollyhocks.
WILLIAM CHATER begs to announce that he has a fine collection of the above now in bloom, including all the New and Choice varieties in cultivation. An inspection of the same is respectfully invited on any day with the exception of Sunday. Frequent trains to Saffron Walden Station. Nurseries, Saffron Walden.

ORCHIDS.—A small private collection for sale cheap, including Den. Wardianum, Cervantesi, Syringothursus, thyrsiflorum, Iamsianum, Paxtoni; Odon. Alexandræ, nebulosum, cirrhosum, triumphans, grande; Cœlogyne cristata, Calanthe, Masdevallia, &c.
H. I. METCALF, Hailey Lane, Hertford.

CALCEOLARIA, superb selection, magnificent colours, beautifully marked.
CINERARIA, of splendid colours and large flowers.
PRIMULA, from exhibition plants.
The above are raised by the best growers in the kingdom. Packets 1s. and 2s. 6d. Supply limited, cannot serve the Trade.
C. R. FREEMAN, Economic Seedsman, Norwich.

PEAT.—The West Moors Horticultural Peat Supply.—C. R. HOLLOWAY, Christchurch, Hants—Brown, Fibrous, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turves and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s., five bags, 21s.; 12 bags, 40s. Some also, of good quality at 13s. 6d. per four tons and upwards.

SALES BY AUCTION.

Imported and Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 1, at half-past 12 o'Clock precisely, Forty Plants of Dendrobium Dalbertisii (Reich. fils). This new Dendrobe has recently been introduced from New Guinea; also a quantity of recently imported plants of Lycaste Skinneri, Dendrobium formosum giganteum, D. cretaceum, D. bigibbum, D. barbatulum, D. Johannis, Saccolabium retusum, &c.; and a Collection of Established Orchids, comprising many rare and valuable sorts; a Collection of Orchids and Palms from Belgium, including 20 Colax jugosus, 34 Masdevallias, including Bonplandi, Harryana, myrostigma, Houtteana, tovarcacea, civilis, 20 Cattleya Harrisoniæ, 20 Cocos Weddeliana, 4 Liparis elegantissima, 2 Restrepia antennifera fusca, 500 Seedling Plants of Cineraria "Champion," and 500 Primula sinensis, &c.

On view the morning of Sale, and Catalogues had.

South Norwood.

Eight minutes' walk from Norwood Junction.

MESSRS. PROTHEROE AND MORRIS are instructed by Mrs. Hubbard (who is leaving the neighbourhood), to SELL by AUCTION on the Premises, Lyndhurst Lodge, White Horse Lane, on TUESDAY, July 30, at 11 o'Clock precisely, the whole of the STOVE and GREENHOUSE PLANTS, including 100 large double Camellias in fine condition, from 2 feet to 10 feet in height, comprising alba plena, Lowii, Elezria, fimbriata, imbricata rubra, and other well-known varieties; pyramidal-trained Azalea indica; 7 nearly new 1*l.*, 2*l.*, and 3 light BOXES; 4-feet 1-horse IRON FIELD ROLLER; 24-inch LAWN MOWER; GARDEN ROLLER; 2 Gentlemen's RIDING SADDLES; 2 sets Plated HARNESS, complete; small Stack of HAY and effects.

On view the day prior, and Catalogues had of Mr. J. CLACEY, the Gardener, on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

The Nursery, Ampthill Sq., Hampstead Road, N.W.

Important Sale of Ornamental Foliage Plants, Ferns, &c.—

Mr. Robert Green begs to announce that owing to continued ill-health he intends considerably curtailing his business at the end of the present season, and entirely discontinuing the Furnishing Department. He is therefore instructed

MESSRS. PROTHEROE AND MORRIS to SELL by AUCTION, on WEDNESDAY next, July 31, at 12 o'Clock sharp, in consequence of the great number of lots, the whole of the large stock of ORNAMENTAL FOLIAGE PLANTS, FERNS, &c., at his London Nursery or Depôt as above, consisting of large specimen Palms, Dracænas, Tree Ferns, Ficus, Pandanus, Cordylines, Curculigos, Phopalas, Musas, &c.; also an immense number of smaller Plants of the above; together with about 7,000 Hardy Greenhouse Ferns, in 48's and 60's; 1,000 established British Ferns, in 48's; 3,000 Ficus repens, Tradescantia, and Isolepis, in 48's and 60's; a small collection of Orchids; 200 feet Hot-water Piping; 30 loads Mould; Pots, &c.

On view the day prior to the Sale. Catalogues may be had on the Premises; at Mr. Green's West End Establishment, 28, Crawford Street, W.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B.—The Nursery is about 5 minutes' walk from Gower Street and Euston Stations. Omnibuses and Trains from all parts of London pass the square.

Auction Mart, Tokenhouse Yard, near the Bank of England.

IMPORTANT SALE of a celebrated collection of ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 19, at 12 for half-past 12 o'Clock precisely, a magnificent COLLECTION of ESTABLISHED ORCHIDS in the best possible health, including several handsome specimen Cypripediums, Saccolabiums, Vandas, Cattleyas, &c.; also fine plants of Odontoglossum vexillarium and Rœzlii, Masdevallia, Harryana, Lindenii and coccinea, Lælia purpurata magnalis, flava autumnalis, albida and anceps, Cattleya gigas, eldorado, Mendelii, superba and marginata, Dendrochilum, filiforme, Oncidium concolor, pratexatum, Marshallii, dasytle, cheirophorum, and other rare varieties; Cymbidium eburneum, C. Mastersii, Cypripedium, Parishii, Sedenii, Stoneii, Harisii, Odontoglossum Alexandræ, pulchellum, magus, Leopardium grande and Phalænopsis, Pescutorea, cerina, Pleione, humilis, maculata, Saccolabium, amplum, retusum, Blumei, curvifolium, præmorsum, guttatum, Sobralia, macrantha, Sophronites, coccinea and grandiflora, Vanda cœrulea, tricolor formosa, Parishii suavis, and undlata, Paphinia cristata, Millonius, Lycaste Skinneri, Opidendron, vitellianum majus, Dendrobium, Ainsworthii, Cambridgeanum chrysosis, Devonianum, Falconeri, heterocarpum, nobile, Schroderii thyrsiflorum, and Wardianum.

On view morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

TO BE DISPOSED OF, a small NURSERY and JOBBING CONNECTION. Apply to Mr. CLINGO, 2, Swiss Terrace, Belsize Road, N.W.

To Nurserymen, Florists, Gardeners, and Others.

FOR DISPOSAL (in consequence of family bereavement), a very compact and convenient FLORIST'S BUSINESS, in a fast increasing neighbourhood, two miles from Covent Garden, consisting of a good Eight-roomed Dwelling-house, Six Glass-houses heated with Hot Water, Potting-sheds, &c., commanding Front to Main Road, and doing a good Jobbing and Cut Flower Trade, &c., which may be extensively increased. Long Lease, and moderate Rent. Immediate possession can be had.

For further particulars apply to F. W. A., Swiss Nursery, Loughborough Road, Brixton.

To Market Gardeners.

TO BE LET, and LEASE DISPOSED OF, 78 Acres of First-class LAND, as a Market Garden, with 38 Acres of rich Grazing MARSHES, situate in Barking, Essex, 9 miles from London. A desirable newly built RESI-DENCE and every necessary Out-building.

THOMPSON, Dagenham, Essex.

Isle of Wight, near Carisbrooke.

TO BE LET, by the Year or on Lease, a good FAMILY RESIDENCE in perfect condition, with large Conservatory, extensive ornamental Grounds, two large Tennis and one Croquet Lawn, large Kitchen Garden, south Fruit Wall, an Orchard, and fine Run for Poultry, three-stall Stable and Coach-house.

Apply, personally or by letter, to the owner, Millbrook House, near Newport, Isle of Wight.

To Market Gardeners and Others.

TO LET on Lease from Michaelmas next, about 60 Acres of ARABLE LAND, adjoining Buckden Station, Huntingdonshire, two hours from London. Soil suitable for a Market Garden. A Cottage on the ground, and usual Farm Premises. Address

Rev. H. M. ROXBY, Buckden Vicarage, Huntingdon.

TO BE LET, on Long LEASE, a NURSERY, with Large Double Fronted Shop, Dwelling House, Greenhouse, Garden at back; likewise a Nursery Ground with Stock-in-Trade; delightfully situated for a first-rate trade. Apply by letter,

E.C., P.O. 177, New Cross Road, Hatcham, S.E.

To the Trade.

NEW TURNIP SEEDS FOR PRESENT SOWING.

H. AND F. SHARPE have just harvested the following varieties of TURNIP SEEDS suitable for present sowing, viz. :—

Stratton Green Round	Pomeranean White Globe
Devonshire Grey Stone	Lincolnshire Red Round
Sutton's Mammoth Purple Top	White Stone or Stubble

They are ready for immediate delivery. Prices may be had on application.

Seed Growing Establishment, Wisbech.

To Market Gardeners.

(To be sent out in the Autumn.)

MARÉCHAL NIEL, grafted on Brier roots, 4000 fine plants, fit for pot culture, at £2 16*s.* per 100, £26 per 1000.

VIOLA, Belle de Chatenay, fine, in good transplanted young plants, at £1 5*s.* per 100, and £10 per 1000. Other varieties of Viola, such as Marie Louise, Parma, Czar, do. white flower, for disposal in large quantities.

As many orders last season could not be supplied, as the Stocks run out, orders must be sent immediately, to

L. PAILLET, Nurseryman, Chatenay by Sceaux near Paris, France; or to his Agents, Messrs. SILBERRAD AND SONS, 15, Harp Lane, Great Tower Street, London, E.C., where CATALOGUES and Trade Lists may be had on application.

TO BE SOLD, or EXCHANGED for small Stove or Greenhouse Plants, Ferns, or Roses, the following fine Specimen Plants, all in perfect health and forming part of a famed Collection:—Cyathea dealbata, 3 feet stem; Dicksonia antarctica, young plant, 20 fronds; 2 splendid basket Ferns, Gomphlebium subauriculatum, very fine Lemon tree, 8 feet high, in fruit; pair of Orange trees, 5 feet by 4 feet, well furnished; Croton pictum, 6 feet high; 2 plants of Australian Flax, 6 feet high; very fine Rhododendron Veitchii, 5 feet by 4 feet; R. Edgworthii, same size, well furnished; 3 Pitcher-plants, including Nepenthes Hookerii, 12 fine plants of Yucca variegata, and other plants.

Particulars on application to TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

SPECIAL OFFER to the TRADE of HARDY BULBS and FLOWER ROOTS.

Camassia esculenta, 20*s.* per 100.	Narcissus biflorus, 4*s.* per 100.
Colchicum autumnale, fl. pl., 25*s.* per 100.	,, odorus (Campernel Jonquil), 4*s.* per 100.
Delphinium nudicaule, 17*s.* per 100.	,, poeticus, fl. pl., 5*s.* per 100.
Dielytra spectabilis, strong plants, 25*s.* per 100.	,, Tazetta aureus (Grand Soleil d'Or), 9*s.* per 100.
Erythronium dens-canis, fl. roseo, 7*s.* per 100.	,, telamonius, fl. pl., 7*s.* per 100.
Hemerocallis fulva, 12*s.* per 100.	Orchis maculata, home grown, 10*s.* per 100.
Iris cristata, 17*s.* per 100.	Ornithogalum splendens, 3*s.* per 100.
,, germanica, the best named varieties, 13*s.* per 100.	Platycodon grandiflorum, fl. cœruleo (Campanula grandiflora), 17*s.* per 100.
,, pumila azurea, 17*s.* per 100.	Polygonatum multiflorum (Convallaria multiflora), 9*s.* per 100
Lilium bulbiferum, 42*s.* per 100.	Saxifraga granulata, fl. pl., 34*s.* per 100.
,, Martagon, 20*s.* per 100.	Scilla hyacinthoides cœrulea, 5*s.* per 100.
,, tigrinum, 5*s.* per 100.	,, patula albida, 7*s.* per 100.
,, ,, fl. pl., 6*s.* per 100.	,, patula atro-cœrulea, 7*s.* per 100.
,, ,, splendens, 84*s.* per 100.	Smilacina bifolia (Convallaria), 9*s.* per 100.
,, umbellatum atro-sanguineum, 20*s.* per 100.	Spiræa filipendula, fl. pl., 9*s.* per 100.
,, ,, grandiflorum, 25*s.* per 100.	Triteleia uniflora, 3*s.* per 100.
,, ,, speciosum superbum, 34*s.* per 100.	
Muscari botryoides, 4*s.* per 100.	
Muscari comosum monstrosum, 5*s.* per 100.	

FLOWER ROOTS for COLD FRAMES.

Canarina campanula, 34*s.* per 100.	Cyclamen persicum, fl. roseo, 25*s.* to 67*s.* per 100.

All grown in pots.

HARDY PERENNIALS.

Spiræa Aruncus, 25*s.* per 100.	Spiræa japonica (Hoteia), 14*s.* per 100, £5 17*s.* per 1000.
Spiræa palmata, 84*s.* per 100.	

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK,

Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

£25. PRIZE FOR GARDEN PRODUCE

FREEMAN'S ALL HEART CABBAGE, 1*s.* per ounce, 10*s.* per lb. One of the most compact and best selected stocks of Cabbages grown.

FREEMAN'S INCOMPARABLE SPRING CABBAGE, 1*s.* per ounce, 10*s.* per lb. A splendid exhibition variety, tender, melting, and delicious flavour.

FREEMAN'S MONSTROUS ITALIAN ONION, 1*s.* 6*d.* per ounce, 12*s.* per lb. The largest and best flavoured Onion in cultivation.

FREEMAN'S GIANT ROCCA ONION, 1*s.* per ounce, 10*s.* per lb.

The above Prize will be given in one sum to the Grower of the best Specimens of Garden Produce from Seed supplied by

C. R. FREEMAN, ECONOMIC SEEDSMAN, NORWICH.

RICHARD WALKER has to offer London Market CAULIFLOWER PLANTS, 6*s.* per 1000; Snow's Winter White BROCCOLI, 5*s.* per 1000; SAVOYS and BRUSSELS SPROUTS, 4*s.* per 1000; East Ham Plants, 3*s.* per 1000; Robinson's Drumhead, 2*s.* 6*d.* per 1000. Cash with orders.

Market Gardens, Biggleswade, Beds.

ORCHIDS.—Thousands of choice Orchids arriving this month from Brazil, West Indies, Colombia, Assam, &c., can be supplied in fine imported pieces on arrival, at 3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* A choice selection of Established and Semi-established plants, growing freely and in good health, also kept in stock. Orchid growers are respectfully requested to make an early application to the

NEW PLANT AND BULB COMPANY, Lion Walk, Colchester, in order to secure the best pieces.

N.B.—The Brazilian Orchids are to hand, in fine condition.

To the Trade Only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN AND FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE for 1878-79, first part (332A), is Now Ready, and may be had free on pre-paid application by Nurserymen, Florists, and Seedsmen. The Catalogue contains complete collections of Hyacinths, Tulips, Crocus, Narcissus, Fritillarias, Ranunculus, Anemones, Lilies, Iris, Gladiolus, Pæonies, Amaryllis, &c. The second part of this Catalogue (333C), containing a complete list of miscellaneous Bulbous and Tuberous-rooted Plants, will be sent out beginning of August.

Four Choice and Handsome Orchids.

MR. WILLIAM BULL offers:—

AERIDES FIELDINGII (FOXBRUSH),
DENDROBIUM BIGIBBUM,
CYMBIDIUM EBURNEUM,
CŒLOGYNE BARBATA,

at the extremely low price of 10*s.* 6*d.* each.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Onion Seeds (Naples), Warranted.

SIGNOR SABATA IMPROTA, in order to put a stop to the unfair competition, now offers his four kinds of Seeds at 4*s.* per kil 1gram (2lbs. 3¼ ozs.). All are highly prized, and are in great request in England. No. 1, the Marzatica. No. 2, the Maggiola. No. 3, the Mezzatempo. No. 4, the Agostina. All these Onions are sweet, juicy, and wholesome, and are much valued for cooking and hygienic purposes.

By writing at once to SIGNOR SABATO IMPROTA, 321, Piazza del Mercato, Naples, any quantity can be arranged for, and at any time.

CAULIFLOWER SEEDS from 6*s.* to 8*s.*

Price LISTS on application.

RICHARD SMITH WORCESTER.

ROSES, choice Tea-Scented and Noisette, in great variety.

ROSES, Hybrid Perpetual, strong, for forcing.

ROSES, New, for 1878.

CLEMATIS JACKMANNI and many other sorts for bedding and climbing.

Bedding Plants, strong and healthy; Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.

Descriptive priced LISTS free on application.

RICHARD SMITH AND CO., Nurserymen, Worcester.

Special Cheap Trade Offer.

FERNS, PALMS, AZALEAS, CAMELLIAS, &c.

JOHN H. LEY,
ROYAL NURSERY, CROYDON,

Will be pleased to send (on application) a List of very cheap and good plants. Greenhouse Ferns especially fine, by the 100 or 1000, at less than a quarter of usual prices.

Also Special Retail LIST of New and Rare Plants, Cheap Ferns and Stove Plants, post-free to all applicants.

VINES—VINES—VINES.

A splendid lot of well hardened Canes, fit for immediate planting. All the most approved varieties. 7*s.* 6*d.* and 10*s.* 6*d.* each. Also

FIGS IN POTS,

Well set with Fruit, 5*s.* to 10*s.* 6*d.* each.

APPLY TO

OSBORN AND SONS,
THE FULHAM NURSERIES, LONDON, S.W.

RICHARD SMITH WORCESTER.

STRAWBERRIES.—Strong plants of the leading sorts can be supplied from the open ground after July 15, at 5*s.* per 100. See Descriptive FRUIT LIST, to be had on application.

RICHARD SMITH AND CO., Nurserymen, Worcester.

To the Trade.

SEEDLINGS, Good and Strong, of DRACÆNA AUSTRALIS, at 15*s.* per 100; ARALIA SIEBOLDII, at 5*s.* per 100; CHAMÆROPS EXCELSA, at 7*s.* per 100; ditto, in single pots, 4 and 5 leaves, at 15*s.*; AGAPANTHUS FL. ALBA, at 10*s.* per cwt.; RHUBARB, QUEEN VICTORIA, at 4*s.* per cwt. SEEMANN AND GOEPEL, The Nurseries, Wandsbeck, near Hamburg, Germany.

STRAWBERRIES.

MESSRS. JAMES VEITCH & SONS

Beg to announce that their DESCRIPTIVE PRICED LIST of the above is now ready, and will be sent free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

THE THAMES BANK IRON COMPANY

OLD BARGE WHARF,

UPPER GROUND STREET,

LONDON, S.E.,





Have the largest and most complete stock in the Trade; upwards of £20,000 worth to choose from.

HOT-WATER BOILERS, PIPES, and CONNECTIONS,

And all CASTINGS for HORTICULTURAL PURPOSES.

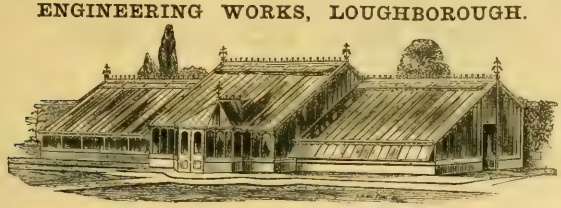
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(price Sixpence).

Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

MESSENGER & COMPANY,

MIDLAND HORTICULTURAL BUILDING & HOT-WATER ENGINEERING WORKS, LOUGHBOROUGH.





Horticultural Buildings erected on Messenger & Co.'s Patent Method of Construction are very strong, *most durable, light, elegant, amply ventilated, perfect efficiency* for intended purpose is *guaranteed*, are economical *in cost and maintenance;* combine the peculiar advantages of Wooden and of Iron Houses, without their disadvantages.

MESSENGER AND CO., from their long experience, and having large Works exclusively devoted to the Construction and Heating of Horticultural Buildings, are in a position to execute with despatch, in the best manner, the Orders with which they are entrusted. Only thoroughly well seasoned timber used.

The Plans of Landscape Gardeners, Architects, and Others carried out.

Plans and Estimates forwarded free on receipt of Particulars by Post. Estimates sent free of charge. Ladies and Gentlemen waited upon.

Illustrated CATALOGUES of GREENHOUSES, VINERIES, HEATING APPARATUS, &c., sent free on application. Richly Illustrated CATALOGUE of HORTICULTURAL BUILDINGS and HEATING APPARATUS (the Designs taken from Works executed by M. & Co.), post-free for thirty-three stamps. Gentlemen consulting this Catalogue have the advantage of inspecting designs whose efficiency has been tested by actual experience.

B. S. WILLIAMS'

NEW AND CHOICE

FLOWER SEEDS FOR 1878,

Post Free.

	Per packet—s.	d.
AURICULA, finest show varieties ...	1	6
„ Alpine, finest mixed	1	0
BEGONIA HYBRIDA, finest mixed ...	2	6



CALCEOLARIA, Williams' Superb Strain, per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice Strain .. per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5s., 3s. 6d., 2s. 6d. and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

SOLANUM HYBRIDUM, "Empress" (New) .. .. per packet 2 6

ILLUSTRATED GENERAL,

AND ALSO

NEW PLANT CATALOGUES,

Now ready, post-free to all applicants.

Victoria and Paradise Nurseries,

UPPER HOLLOWAY, LONDON, N.

SUTTON'S CHOICE VEGETABLE SEEDS,

FOR PRESENT SOWING.

CABBAGE.



Sutton's Imperial. The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use. Heads cone-shaped, very large, firm, and of mild flavour. *1s. per ounce.*

	Per oz.—*s. d.*
Enfield Market	.. 0 8
Nonpareil	.. 0 6
Early Dwarf York	.. 0 6
Red Pickling	1 6

ONION.—New Queen.

A valuable, new, and distinct variety, being the earliest of all Onions. Sown in March it comes to maturity in July, or sown in July it is fit for use the following autumn. It is of beautiful mild flavour, and strongly recommended.

Per packet, 1s.

The following varieties, sown in July and August, will come to a very large size during the following Spring and Summer:—

	Per oz.—*s. d.*
NEW GIANT ROCCA (the largest variety)	.. .. 1 3
LARGE EARLY RED ITALIAN	.. .. 1 3
LARGE EARLY WHITE ITALIAN	.. .. 1 3
GIANT LATE RED ITALIAN	.. .. 1 3
GIANT LATE WHITE ITALIAN	.. .. 1 3

SEEDS BY POST.

VEGETABLE SEEDS up to 12 ounces in weight sent by post with a charge of *4d.* for the 12 ounces, or *20s.* worth free to any Railway Station in England and Wales.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

OSBORN AND SONS'
GENERAL CATALOGUE

Of STOVE and GREENHOUSE PLANTS is now ready. It contains a Descriptive List of the leading Novelties, also of Azaleas, Camellias, &c. Post-free on application.

THE FULHAM NURSERIES, LONDON, S.W.



The Pine-apple Nursery, Maida Vale, LONDON, N.

E. G. HENDERSON AND SON can supply SEED of the following, quality of strains are the best that can be grown, at per packet :—

PRIMULA SINENSIS FIMBRIATA, mixed colours or separate, *2s. 6d.*
PRIMULA SINENSIS FIMBRIATA, double-flowered, white or mixed, *2s. 6d.* and *5s.*
PRIMULA SINENSIS FIMBRIATA, Maiden's Blush, new double, *2s. 6d.* and *5s.*
CINERARIA and CALCEOLARIA, each *2s. 6d.*
CYCLAMEN PERSICUM GRANDIFLORUM, *1s.* and *2s. 6d.*
PANSIES, best English and blotched flowers, each *1s. 6d.*
CARNATION and PICOTEE, each *2s 6d.*

HYACINTHS, TULIPS, CROCUS,
GLADIOLI, &c.

Our Revised LIST for 1878 is now ready, and will be handed to all Gardeners and Amateurs, post-free, on application to MESSRS. MERTENS AND CO., Forwarding Agents, 5, Billiter Square, London, E.C., or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS,
HERTS.

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

DENDROBIUM SUPERBIENS.

MR. WILLIAM BULL,

Having received an Importation from Torres Straits of this new and handsome DENDROBIUM, is now sending out good plants at Three and Four Guineas each.

An inspection of these is invited, as of many thousands of other choice ORCHIDS, which can be supplied at moderate prices, having been received from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago.

ESTABLISHMENT FOR NEW AND RARE PLANTS,
KING'S ROAD, CHELSEA, LONDON, S.W.

TWO GOLD MEDALS, PRESTON.

ROYAL HORTICULTURAL SOCIETY'S GRAND PROVINCIAL SHOW.

R. HALLIDAY & CO.

Beg to announce that they have been Awarded the ONLY GOLD MEDAL for Horticultural Buildings, and the ONLY GOLD MEDAL for Boilers, Valves, Heating Apparatus, &c., in competition with several of the oldest firms in the trade.

The following BUILDINGS, which obtained the GOLD MEDAL, are for SALE, and will be delivered, fixed, glazed, and painted, in any part of England at the prices enumerated below:—

TWO SPAN-ROOF HOUSES, each 25 feet long by 18 feet wide, folding doors at one end, finials and ornamental cresting along top: each £80.

ONE HALF-SPAN, 25 feet long by 12 feet wide, door at each end, ornamental finials and cresting along top: £50.

ONE LEAN-TO, 25 feet long by 15 feet wide, newly designed, door at each end, wrought-iron and wood combined; very strong, light, and durable: £70.

ONE LEAN-TO, 20 feet long by 12 feet wide, door at each end: £42 10s.

Exclusive of stages, heating, or brickwork.

These Buildings, it need scarcely be observed, are finished in the very best manner, and made of the best red Petersburg deal, glazed with 21-oz. English sheet glass, and have been painted four coats, and would be painted another coat after fixing. The front and roof sashes are fitted with our improved simultaneous-opening machinery, and doors with best brass bolt mortice locks.

N.B.—The above will be on Sale till Second Week in August, after which they will be taken to pieces and re-used in other work.

R. HALLIDAY & CO.,
HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS,
MIDDLETON, MANCHESTER, and 22, BARTON ARCADE, MANCHESTER.

FLORVITA.

THE LIFE OF FLOWERS.

For Stimulating and Quickening the Growth of Plants,
AND
Producing a Rapid and High Development of Blossom.

This valuable preparation is the result of several years' exhaustive trials, and it is scarcely possible to speak too confidently of it.

Plants of all descriptions (Ferns excepted), from the best known to the rarest and costliest, develope their blossom and foliage with extraordinary quickness and beauty when the "FLORVITA" is applied to them. So also with Fruits and Vegetables, which under this treatment reach perfection with great rapidity.

Exhibitors of Horticultural Specimens will find the "FLORVITA" invaluable.

"FLORVITA" contains all the elements essential to healthy growth combined in a carefully prepared form, rendering them most easy of assimilation, at once imparting fresh life, and supplying rich nourishment for the perfect development of plants, both in their blossom and foliage.

To ladies who take an interest in their flowers, both indoors and out, "FLORVITA" particularly recommends itself; for though chemically it represents a very highly concentrated fertiliser, it has not the appearance or character of what is known under the head of "Flower Manures," being a delicate pink powder, soluble in water, with a most agreeable bouquet.

Extract from Dr. Voelcker's Analytical Report, of June 7, 1878:–

"It (Florvita) contains nearly 11 per Cent. of Ammonia in the Salts of Ammonia, and about the same amount of Nitrogen which is present in these salts, in the shape of Nitrates. It moreover is rich in Soluble Phosphoric Acid, and embodies all the more valuable fertilising constituents of cultivated plants in a highly concentrated and readily available condition.

"The preparation is readily soluble in water, and perfectly free from all disagreeable smell, and it may be regarded as the concentrated essence of the most valuable manures, deprived of all the disagreeable smelling and useless products of partial decomposition which generally accompany ordinary manures.

"The facility with which it can be applied, and the small quantity required to produce a visible effect upon flowers, render it an elegant and efficacious substitute for liquid manure, guano-water, &c., for use in Greenhouses and in the Flower Garden."

DIRECTIONS FOR USE.

One teaspoonful of the Florvita to be added to each gallon of water used. The Plants should be watered with it once or twice a week.

PREPARED ONLY BY
PRENTICE BROS.,
Chemical Laboratory,
STOWMARKET.

Sold in 1s. and 2s. 6d. Bottles by all Florists and Seedsmen in the United Kingdom.

SUTTON'S
SUPERB STRAINS OF
FLORISTS' FLOWERS,
POST FREE.

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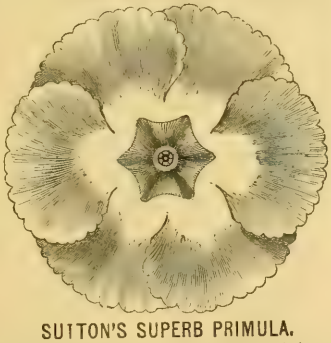
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SATURDAY, JULY 27, 1878.

HALL BARN.

THE town of Beaconsfield is widely known as having lent its name lately to the Premier, after it had been offered almost a century ago to Edmund Burke. The country has several times fixed its eyes with interest on this historic town. Burke resided here, Hampden exercised his trained bands here on the eve of the civil war, and Waller, the poet, lived here in his retirement at Hall Barn.

There have not been many such wealthy poets as Edmund Waller, a man of family, politician, poet, and M.P. for Wendover, which had previously returned John Hampden and afterwards honoured itself in the same way in the case of Burke. His wealth enabled Waller to enlarge his house, and indulge his taste in gardening.

Persons quitting the one wide street of Beaconsfield, through which the Oxford coaches rolled on their way to London, and intending to visit Hall Barn, will pass the church and large churchyard in the centre of the town, and travel less than half a mile alongside the park wall of the ancient domain of the Wallers. Conspicuous from the road are the tomb of the poet, and two large Walnut trees, one of which overshadows his monument. The Walnut is not common in churchyards, and these are connected with a curious piece of family history. The tree was chosen as the Waller crest after Agincourt, where the head of the family took the Duke of Orleans prisoner, and took afterwards as his crest the arms of Orleans hanging by a label in a Walnut tree with this motto to the device: *Hæc fructus virtutis.*

The poet seems to have regarded the service of the king as an hereditary duty, but in the years of his retirement at Hall Barn the king lost his head, and during several years it happened for the first and only time in English history that there was no king. The poet, therefore, paid his court to the Protector Cromwell till the sovereign's return from exile; he liked to keep his loyalty in the sun and air. Waller was a poor patriot, but an excellent gardener. On one side of his house he laid down a lawn and slope, formed a sheet of ornamental water, planted a shrubbery and grove, and snugly enclosed a paddock for his cow and pony. Besides laying-out the ground in this admirable manner he set some fences of Yew and Holly, which now shelter two wings of the house with two high vegetable walls of 20 feet, beneath which you may walk on gravel and catch the warm sunbeams even in the winter. He kept the south side of his house in seclusion, and opened two aspects to the park, preferring partial privacy to the all round view which introduces the whole country within the windows. Across the park is the tower of Beaconsfield Church, and beyond, on rising ground, are the groves of Butler's Court, the house for many years of Emund Burke.

When an open park surrounds a house, part of it should be planted out. Waller managed this by means of his Evergreen walls and a grove. It is a grove of many acres commencing beyond the lawn, and it forms a delightful shelter and retreat. After winding by obscure paths, darkened by shrubs and timber, you may perhaps desire more light and a longer view,

and the desire is gratified, for a summer-house stands before you with a vista opened through the wood. The greatest of blessings are the sun and life, and, when they have been excluded in the recesses of a woodland walk, it is pleasant meeting them again in vistas, where the sun lights up the smooth stems of the Beech trees, pierces their light foliage here and there and crosses the mossy path in bars of light, and where the feathered and other live stock of the grove appear in the shape of flustering blackbirds, pert squirrels, gay cock pheasants and their more demure looking hens.

On the south side of Waller's Grove the soil is poorer than next the lawn, and the wood is less heavily timbered. Seating yourself in a flint-built grotto you admire the park through a thin blind of foliage, and watch the handsome herd of Highland cattle. Then you walk on and find a substantial summer-house standing a short distance within the wood. Further on is another ornamental building, a dome set on pillars and sheltering a statue. Waller here leaned a little dangerously in the direction of architectural gardening. A Greek temple in an English wood is not what it ought to be in several respects. Some sort of building is needed here to mark the spot where several vistas meet, and Waller's Grecian temple, with its frescoed ceiling, open sides, and statue in the midst, is not by any means a bad imitation of Greek art. But we don't see any seat, and we want to sit down; the open sides of the little building admit a cutting draught, and they admit small birds too, which have settled on the upturned face of the allegorical personage here represented. The plaster requires washing.

Vistas open from this spot, which forms the nucleus of several telescopic views. One only desires here a seat and a suitable building. We should prefer substantial rockwork planted with Ferns and alpines, or a handsome obelisk.

There is a delightful walk round the wood and inside its fence, a grass terrace of velvet green protected from the park by a sunk fence, and bordered on the wood side with a bank of evergreens. It atones amply for the Grecian temple, and is English every inch of it. One can sit down here during a stroll, for some pretty summer-houses have been built among the evergreens, on the margin of this long and sheltered terrace. There are a few statues at salient points. An obelisk, with tools of husbandry and horticulture carved upon its base, stands conspicuously at an opening of vistas through the wood. It is tolerable, but every such obelisk should be a monolith. An ornament placed among trees and shrubs, which are perfect in their structure, should be perfect, too, of its kind.

The hurricane of 1839 overthrew 500 trees in the park at Hall Barn, and just such a hurricane is needed in many old parks which are at present overcrowded; but, unfortunately, a clean sweep was made of some Cedars of Lebanon which ought not to have been put down. The worst of hurricanes is, they don't discriminate.

Poets confer fame on places and on people. The high-born dame, Lady Dorothea Sidney, is held in memory as the "Sacharissa" of Waller's verse. Beaconsfield became a place of note as his residence. He had expressed a wish that he might die in Coleshill, a hamlet of Amersham, returning there to his birthplace like the stag to the lair where he was roused; but he died at Hall Barn. It is recorded on his tomb in graceful Latin that "he was of the poets of his time easily the prince; that when an octogenarian he did not abdicate the laurel he had won in his youth, and that his country's language owes to him the possible belief that, if the Muses should cease to speak Greek and Latin, they would love to talk in English."

Hall Barn was much enlarged by Sir Gore Ouseley, Bart., who obtained the estate by purchase of the Wallers in 1832. Mr. A. Morrison is the present owner. *H. Evershed.*

New Garden Plants.

ERIA SPHÆROCHILA, *Lindl.*; Id. *Contrib. Ind. Orch.* in *Journ. Proc. Linn. Soc.* 1858.

I have before me a splendid specimen, *comme il faudrait*, a living plant with three inflorescences, sent me by Mr. W. Bull, F.L.S., gathered a short while ago by Mr. Freeman and his 400 men in the Khasia Hills, at an elevation of 5000 feet. There are three stout bulbs, one fitting on the other, the junior being the break of the third and last joint of the elder stem. Those stems are not unlike those of Eria myristacæformis, much grooved and shining, 2 to 3 inches long, nearly 1 inch in circumference. The young flowering break is quite fresh. It has five rather broad nearly sessile leaves, the tops of which are injured by travelling. The inflorescence has nothing Erioid at all, so much that when extracting the very carefully packed plant I thought of some Pholidota, for the chin is scarcely to be remarked. The main rachis is puberulous. The linear lanceolate acuminate bracts are nearly as long as the velutinous stalked ovary. Flowers ochre-colour with some violet-purple margins of the lateral auricles of the lip; mentum, as stated before, nearly none; sepals lanceolate acuminate, rather narrow; petals much narrower; lip three-lobed; side lobes auriculiform, blunt, very small; middle lobe far greater, obovate, with an apiculus; two small rounded cells, one standing each side before the basilar auricles, anterior end; column genuine. Rostellum bidentate (!). Anther with the usual eight cells. Pollinarium genuine.

After this I only name the plant with certain doubts, though, thanks to Dr. Lindley, I have two typical specimens. My first disagreement is, that the leaves are sessile in Mr. Bull's plant when they are cuneate and far longer and narrower in those specimens which were collected by Drs. J. D. Hooker and T. Thomson. (No. 68.) Then the inflorescence is quite the same; but Dr. Lindley drew a dark border around the terminal part of the lip, no such border to the auriculæ. And Dr. Lindley found, what is very unusual in the genus, the anterior vein varicose. The colours are different in our plant from those described before, and no vestige of variety. My opinion is, that the leaves are not fully developed, and would perhaps finally have shown a cuneate base.

As to the varices of the lip, I must remark that I suspect the specimens were dried in the absence of the illustrious collector. The Hindus or Malays thought it far quicker work to boil both flowers and leafy stems neatly; that may account as well for their astuteness as for those changes of the flowers and the varices. I cannot think that such an extraordinary shape of the flowers, so very well represented by Dr. Lindley's sketch, would return in a second species in the same era. The flowers gave me a pelorioid impression, yet I have no direct claim and proof that they are such, unless it be the nearly absolute obliteration of the flowers' chin (mentum). *H. G. Rchb. f.*

MASDEVALLIA ABBREVIATA, *n. sp.**

Another member of the group of the Amandæ. I have had a day's work to go once more over all my types of the affinity of Masdevallia polysticta, melanopus, × anthodactyla, Lehmanni, tridens, caloptera, Gustavi, pachyura. This one is the ninth species, so much a connecting link between M. polysticta and melanopus that I often believed it to be a mule between these two. It has the full colours of M. polysticta, yet there are usually far fewer dots. There is even a nearly unspotted variety. The whole flower is far shorter, more gibbous underneath at its base, and those ciliæ and hairs, so very conspicuous in Masdevallia polysticta, are scarcely to be seen, or not at all present. Then the petals are more retuse, with a single apiculus, and very seldom acorned with a few lateral teeth (only seen once). The anterior part of the lip is hooded, as in genuine Masdevallia polysticta, and covered with three blunt ridges, yet it is usually far broader. I am not very sure whether it comes from M. Roezl, or perhaps from M. Bruchmüller, since none of wild specimens agree with it. I am rather more inclined to believe in its Roezlian origin. Masdevallia Amanda has the same long lateral sepals, which are charateristic of M. polysticta, and which I saw very judiciously represented in an elaborate drawing of this species prepared for the *Botanical Magazine* by Mrs. Dyer. *H. G. Rchb. f.*

CYMBIDIUM LEACHIANUM, *n. sp.*†

This is a novelty gathered in Formosa on the branch of a tree 30 feet from the ground by Mr. Arthur Corner. It has chartaceous linear lanceolate leaves, acute (apparently unequally bidentate at the withered top), of more than 2 feet in length and 1 inch broad, thicker than those of C. ensifolium, but far thinner than those of C. aloifolium. Thus it is easily distinguished from the group of the last, whose flowers it imitates a good deal. They stand in a loose raceme, and are just as large as those of that species, but rather distant. Sepals and petals ligulate, acute, whitish ochre colour with a brown line running nearly to the apex. The three-lobed lip is nearly totally brown except the whitish disc with two keels. The column is nearly totally dark purple. The anther is light yellowish white.

There is a copy of a Chinese drawing in Dr. Lindley's Herbarium of an obscure species called Cymbidium floribundum (see Lindl. *G. and Sp. O.*, sub Cymbidio. sinensi, p. 162). It represents leaves much like those of our plant, but shorter, and an upright raceme of thirty flowers with blunt spatulate sepals and petals of a certainly not very clean olivaceous brown colour and the lip three-lobed, blunt, purplish brown with yellow disc. Column with yellow border and brown middle line. It cannot be this.

Then our plant really stands very near our Cymbidium Dayanum, which appears to be a very rare plant. It is, however, well distinguished by its broader leaf, blunter sepals, and the very short middle lobe of the lip. The keels, too, are more velutinous on their anterior parts, and interrupted in this, while they are continuous and full of equal velvet in C. Dayanum. The caudicula is square in this, trapezoid in the new one.

I have to thank for very satisfactory materials Mr. Charles Leach, King's Road, Clapham Park; and the new species may bear the name of its possessor. *H. G. Rchb. f.*

ERIA CORNERI, *n. sp.**

This is a very interesting species, rather near Eria Griffithii (Eria pulchella, Grift.). It is decidedly distinct by its very curious glaucous pseudobulbs, which attain 2 inches in height, and are just obtusangulo-tetragonous. The leaves are petiolate oblong acute, apparently very thin, nervose, rather broad, reminding one of those of a Cirrhæa. The flowers are of a very pallid green, the lip white with a purplish middle lobe and purplish streaks over the side lobes. It is a very delicate flower, and when Mr. Day sent me the first inflorescence I was not very hopeful to come to an understanding, since the plant was not in the possession of this gentleman. I have, however, been assisted in a manner almost unique. Mr. Day began by sending me a coloured sketch and coloured analyses taken from the fresh inflorescence, October 31, 1871. Mr. Leach, the possessor, forwarded to Mr. Day for me a photograph of the flowering plant, and a living one, that gave evidence of those wonderful bulbs. I have to thank most cordially both those gentlemen for their kind assistance in describing this curious novelty, which was discovered in Formosa by Mr. Arthur Corner, and grown by Mr. Charles Leach, King's Road, Clapham Park. It is, of course, dedicated to Mr. Corner, its discoverer. *H. G. Rchb. f.*

THE ISLAND OF CYPRUS.

(Continued from p. 75.)

VEGETATION.

GENERALLY speaking the vegetation is of a monotonous character, presenting neither the pleasing contrasts of temperate northern regions nor the richness and brilliancy of the tropics. A grass carpet is wholly wanting, save in a few favoured mountain gorges in the south-west. Shrubs and tough herbaceous plants in great variety, belonging to the Compositæ, Gramineæ, Labiatæ, Boragineæ, Cistineæ, Euphorbiaceæ, Papilionaceæ, &c., form a loose network of vegetation. Prominent in this steppe vegetation, for it cannot be called pasture, are Stipa tortilis, Ægilops ovata, Æ. triuncialis, Jasonia sicula, Pulicaria arabica, Centaurea hyalolepis, C. solstitialis, Kentrophyllum

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* *Masdevallia abbreviata*, n. sp.—(Amandæ.) Foliis spatulatis obtusis; racemo pauciflore; bracteis cucullatis ovaria crispo-alata vulgo superantibus; perigonio abbreviato ante mentum obtusum constricto; sepalorum partibus latis brevissimis triangulis minutissime denticulatis, in caudas longiores extensis, intus calvis; tepalis cuneato-oblongis retusis cum apiculo medio, labelli laciniis lateralibus semioblongis elongatis, lamina antica infraposita oblonga lateribus replicatis, lineis tumidis ternis: columna gracilenta, androclinii cucullo serrulato. *H. G. Rchb. f.*

† *Cymbidium Leachianum*, n. sp.—Foliis lineari-acuminatis apice bidentiatis pergameneis; inflorescentia laxa pauciflora (porrecta?); spatha scariosa ligulata in basi; bracteis triangulis acuminatis valde brevibus; sepalis tepalisque lineari-ligulatis acutis; labello trilobo, lobis lateralibus angulatis, lobo medio porrecto triangulo brevi, carinis geminis a basi in basin lobi antici, dimidio antico magis velutinis, in carinulas angustiores excurrentibus; caudicula trapezoidea.—Sepala albido-ochracea, linea mediana atropurpurea. Labellum toto limbo atropurpureum, disco ochroleucum. Columna atropurpurea, buccis in basi antice ochroleucis.—Formosa. A. Corner. *H. G. Rchb. f.*

* *Eria Corneri*, n. sp.—(Hymeneria) pseudobulbis adultis cylindraceo-tetragonis, junioribus diphyllis; foliis cuneato-oblongis acutis papyraceis; racemo porrecto calvo pluriflore; bracteis minutissimis; floribus curvatis mento angulato bene conspicuo; sepalis ligulatis acutis; tepalis linearibus, subbrevioribus; labello trifido; lacinia media semi-elliptica acuta; laciniis lateralibus semi-ovatis antrorsum obtuse angulatis; carinis elevatis antrorsum undulatis ac ramentaceis ternis a basi ad apicem; columnæ semi-teretis. Flos stramineo-viridulus; labelli laciniæ laterales intus brunneo-purpureo punctilatæ; lacinia media omnino brunneo-purpurea. Ex Formosa misit dom. Arthur Corner, et coluit dom. Chas. Leach, King's Road, Clapham Park. *H. G. Rchb. f.*

syriacum, Picnomon Acarna, Notobasis syriaca, Salvia controversa, Calamintha cretica, Teucrium divaricatum, Echium elegans, Anchusa ægyptiaca, Onosma fruticosa, Helianthemum pulverulentum, H. obovatum, Fumana Spachii, Hypericum crispum, Euphorbia lanata, E. Cassia, Medicago denticulata, M. minima, Trifolium stellatum, T. striatum, T. tomentosum, Astragalus bæticus, Hedysarum spinosissimum, Onobrychis cristagalli, Alhagi Maurorum, Prosopis Stephaniana.

Associated with the foregoing are many bulbous and tuberous plants as well as some dwarf shrubs. The monocotyledonous bulbous plants are only visible above ground for a very short period, hence they escape the botanist who is not there at the exact time. But there are many dicotyledons with tuberous root-stocks, as Emex spinosus, Rumex tuberosus, R. bucephalophorus, Aristolochia hirta, A. sempervirens, Valeriana Dioscoridis, Ægyalophila pumila, A. cretica, Mandragora vernalis, Cyclamen hederæfolium, Bunium ferulæfolium, Cryptoceras rutæfolia, Geranium tuberosum, and so on. Tuberous Ranunculi especially are very numerous, thus, Ranunculus bullatus, R. chærophyllus, R. myriophyllus, R. millefoliatus, Vahl., R. cadmicus, R. asiaticus, Ficaria ranunculoides, and Pæonia corallina. Cichoraceæ are represented among others by Thrincia tuberosa, Scorzonera undulata, S. araneosa, Lactuca hispida, L. leucophæa, L. cretica, and Ætheorhiza bulbosa. Conspicuous in the dwarf bushy element is Poterium spinosum, which is spread over all the dry-hill (trachiotis of the natives) region of the island. And, on account of the poverty in wood, a welcome plant this is, as it affords fuel for heating ovens and kilns; and it is also used for hedges. Among other plants of this class are Thymelea hirsuta, Satureia Thymbra, Ononis antiquorum, &c.

A richer and more varied flora is presented by the southern slopes of the central mountains in the south-west. Prominent here are various Cisti, deliciously fragrant Labiatæ, &c. A gigantic variety of Ferula communis is one of the most characteristic productions of the dry-hill region, forming, where it occurs, the most striking feature in the landscape. It attains a height of 8 to 10 feet, with a correspondingly stout stem, and is a very beautiful object. The elegant foliage and large umbels of yellow flowers render it one of the most ornamental plants in the island. But its beauty is of short duration, as the heat of early summer hastens its flowering and fruiting, and the whole plant soon turns brown. A loose, deep, sandy soil suits it best, and it is a social plant covering considerable tracts, forming miniature forests. It is common near Larnaca, on conglomerate, and near Panteleimon. The stems are used for making chairs, &c., and the pith as tinder. The thick roots penetrate the soil to a depth of 6 feet, which accounts for the great vigour of the plant. It is the *anatriches* of the natives.

Very different from the "dry-hill" vegetation, and the richer herbaceous flora of the mountain slopes, is the thicket or underwood region. This commonly consists of Pistacia Lentiscus and Juniperus phœnicea, either separately or intermixed, forming an almost impenetrable growth. The Juniper is also useful in various ways, whereas the Pistacia is perfectly useless and seems only destined to crowd out anything better.

It is only here and there that other shrubs are found mixed with the foregoing, or occasionally appropriate the ground exclusively to themselves. Such are Ulex europæus, Quercus calliprinos, Myrtus communis, and Rhamnus oleoides. In the more elevated parts of the island only several other shrubs occur, as Ceratonia siliqua, Arbutus Andrachne, Anagyris fœtida, Styrax officinalis, Quercus alnifolia, and Acer creticum. The first-named is particularly abundant in some places as a shrub, clothing the hillsides at Machera. Single bushes are not seldom overrun by Tamus communis, Smilax aspera, and Asparagus verticillatus, or Clematis cirrhosa, Lonicera etrusca, and Teucrium creticum. On the banks of streams and other humid spots there are shrubberies of Tamarisk and Oleander. The latter, when in flower, is a bright ornament of the landscape, and has consequently found its way into the gardens of the town of Larnaca, where it attains the dimensions of a small tree. Though not so showy, the Tamarisk is far more graceful and elegant, and lends an indescribable charm to the brooks and rivulets on whose banks it flourishes. It is the favourite retreat of the nightingale. These shrubberies save many a lovely plant from destruction, giving shade to Serapias pseudocordigera, Aceras intacta, Orchis anatolica, Crepis Sieberi, Scutellaria Columnæ, Malcolmia Chia, &c.

Forests.

As already stated, some writers who profess to write for the public information have imagined forests of Pine, Beech, &c. Unfortunately, forests of any kind of tree are exceedingly limited in area, and chiefly confined to the inaccessible parts of the mountain chains; and as for the Beech, there is no record, we believe, of its ever having been found in the island.

Formerly, it is true, Cyprus was covered with forests, and was noted for its excellent timber; but according to Unger and Kotschy there is no doubt that then, as now, the forests consisted principally of Pine trees. From the sea-level up to 4000 feet Pinus maritima prevails, and above that altitude it is replaced by P. Laricio var. Poiretiana. Even now it is possible to trace the earlier distribution of these two Pines, and see that the Pine forests were only interrupted here and there by other trees. Although the work of devastation has been carried on very recklessly there still exist some beautiful though thin forests of P. maritima. Europhaca boetica flourishes only in the shade of this Pine, and Quercus alnifolia, Arbutus Andrachne, and Acer creticum are often associated with it as underwood, sometimes straying beyond, and forming independent copses. The forests of P. Laricio are nobler and undisturbed, because they are in less accessible situations. This Pine clothes the heights of Troodos, Adelphos, and Machera, and these alone. Few flowering plants flourish underneath the Pines. One of the most conspicuous is the beautiful Pæonia corallina, and Limodorum abortivum pushes forth from the decaying bed of Pine foliage. Juniperus fœtidissima is associated with the Pine on and near the summit of Troodos, to which also Berberis cretica penetrates. Only the two species of Pine named occur in the island. Cupressus horizontalis and Juniperus phœnicea are rapidly disappearing as forest trees, though the latter spreads as a shrub where the maritime Pine makes room for it. Quercus inermis and Q. Pfæffingeri var. cypria, the only arborescent species of Oak, are now quite rare as trees, and can never have had any considerable distribution in the island. Platanus orientalis and Alnus orientalis exist only by the side of the beds of streams; and Cratægus Aronia and Pistacia palæstina are rapidly disappearing, fine specimens being quite rare. The general character of the flora is quite Mediterranean, as distinguished from Syrian. One of the most noteworthy features in this is the prevalence of needle-leaved trees in Cyprus, whereas in Syria these are replaced by flat-leaved trees. A considerable proportion (4.2 per cent.) of the species are peculiar to the island, at least they have hitherto not been found elsewhere. Of these eleven are monocots and thirty-one dicots—two apetalæ, sixteen gamopetalæ, and thirteen polypetalæ. Amongst the most noteworthy are Quercus alnifolia, which represents Q. Ilex; Q. cypria, Ballota integrifolia, a spiny species; Pterocephalus cyprius, Salvia cypria, Galium suberosum, Ornithogalum pedicellare, Silene lævigata, Gladiolus triphyllus, Colchicum Troodi, Crocus cyprius, C. veneris, &c. The bulb flora, it may be repeated, is still very imperfectly known.

Total Number of Flowering Plants and Ferns.

Hitherto upwards of 1000 species of Phanerogamia have been collected in Cyprus—a considerable number, inasmuch as it reaches a fifteenth of the number found in the whole of the Mediterranean region. These 1000 species include 51 trees, 66 shrubs, 55 under-shrubs, 235 herbaceous perennials, 45 bulbous and 70 tuberous plants, 6 parasites and 472 annual plants. The 21 Amentaceæ are represented by 14 arboreous and 2 shrubby species; of the 8 Coniferæ, 6 are trees and 2 shrubs; 6 of the 14 Cistineæ are shrubby; the 5 species of Tamarisk are all shrubby; of the 10 Pomaceæ 5 are trees and 4 shrubs; the 5 Amygdaleæ are all trees; amongst 103 Papilionaceæ there are 2 arborescent and 3 shrubby species; the three Mimoseæ, two arborescent, and one shrubby, so that including the under-shrubs Cyprus possesses 172 woody plants, or half as many as the South of Europe. Of Ferns, eleven species have been discovered, whereof all except Gymnogramme leptophylla, Nothchlæna Marantæ, Cheilanthes fragrans, and Nephrodium pallidum, are natives of Britain.

Principal Natural Orders.

	Genera.	Species.
1. Compositæ	70	117
2. Papilionaceæ	32	103
3. Gramineæ	37	96
4. Labiatæ	25	53
5. Umbelliferæ	34	51
6. Cruciferæ	29	49
7. Caryophylleæ	13	44
8. Liliaceæ	13	39
9. Boragineæ	12	29
10. Ranunculaceæ	9	23
11. Scrophulariaceæ	9	20
12. Orchideæ	7	20
	290	614

THE EXTREME NORTH.*

After a relatively mild winter here in the far North [Norrbotten], we were able to begin spring work early, by the middle of May, although the lakes were still covered with thin ice. In ordinary seasons, the ice does not disappear before the middle or beginning of June. Usually we have eight to nine months of severe winter, the temperature falling to 40° C. [40° below Fahrenheit's zero, or 72° of frost] or lower, and only three to four months of summer, cold winds prevailing. Our readers may wonder how under such conditions gardening can be successful at all. But it often succeeds quite well, although sometimes, as last year, a sharp frost in August destroyed all prospect of any crops. When we consider, however, that the soil here consists almost entirely of sand, and that the sun scarcely disappears below the horizon in the month of June (without this all-wise provision of nature next to nothing would grow here), we can comprehend that the development of plants proceeds much more rapidly here than in the southern countries of Europe. As examples hereof, I will only mention the American Rose Potato, Sugar Peas, and common Peas, which in the unfavourable season of last year were ready for use seven weeks after sowing. Radishes on a tan bed were ready in eighteen to twenty-two days, indeed a sowing in May produced Radishes fit for eating in a fortnight.

Fortunately gardening is practised for the love of it by many prominent men who have come hither from the south of Sweden, whereas it is scarcely known to the natives, especially the lower class. Still we may hope that the newly-founded horticultural society for the province of Norrbotten will be able to show the benefits to be derived from careful cultivation. The Society's head gardener has the special task of visiting persons in any part of the province who may need his assistance, and he has been much in request during the short period that has elapsed since the formation of the society in 1877; but chiefly by the governing bodies and wealthier people for laying out small flower gardens around the houses.

Flower gardening must be regarded as the most popular branch, and flowers are produced here rivalling in colour and perfection of development those of southern climes. The passion for window gardening is universal, and even in the smallest hut one finds flowers. They are chiefly Roses, Carnations, Pelargoniums, Fuchsias, Oleanders, &c. Plants with ornamental foliage are still little known here. In the small gardens attached to most of the houses in the town Potatos are largely grown, and Sugar Peas, various roots and other vegetables on a smaller scale. Kohl-rabi is highly esteemed by the peasantry, and would probably displace the Potato altogether were it safe from the depredations of the youths, who are exceedingly fond of it, and of the Bird Cherry. Hitherto it has not been possible to punish this species of theft, but it is to be hoped that our now better conducted schools will convince the peasant and his offspring that even the appropriation of another person's Kohl Rabi is really robbery, and then this vegetable will be more extensively cultivated.

For the same reason the Bird Cherry, although a charming object amongst other trees, cannot be generally employed. We have indeed few trees that we can plant without risk of their being destroyed by autumn or winter frosts, and are obliged to limit ourselves to Birch, Mountain Ash, Ash, Bird Cherry,

* A Translation from *Der Deutsche Garten*, of a letter dated from Lulea, the capital of Norrbotten, Sweden, which lies in 65° 35' N. lat., not 60° 35' as inadvertently stated by our German contemporary.

Willow, Pines, and Firs. In particularly favoured situations we plant Populus laurifolia and Larch. We have, however, nearly 100 species and varieties of shrubs we can plant without risk of their being injured. Very few of the common berry-bearing shrubs are hardy in this climate, but I shall return to this subject in another letter. *Aug. Engberg.*

SEASONABLE HINTS ABOUT ROSES.

Buds and Stocks.

As the season of budding is now in full tide, a few hints upon its performance may not be out of place, especially for the benefit of amateurs. In the trade grounds, of course, there is little opportunity for the practice of details. Time with them, as in other matters of practical business, means money. The whole course of operations is carried out upon a regular system, under which, from dexterous manipulation, failures are few and of less importance than the delay which would be caused by special precautions against them. Yet even here it has often struck me there is room for more care in the choice of buds than is frequently exercised, as well as in their shape. It frequently happens that a tendency is manifested in certain varieties to run back, or deteriorate in truth of character. The writer has formerly had plants of Jules Margottin and others after a year or two completely alter in type, assuming a long wiry habit of growth, with small rosette-shaped flowers—a sort of sport, in fact, though not worth attempting to fix. It is probable that all such instances arise from the employment of inferior buds. More, this departure from normal types may have given rise to the idea—far from uncommon—that in time some varieties wear out, whereas bad buds would be found at the root of the complaint; or it may also be the use of inferior stocks for older varieties. In all cases, wherever a depreciation in quality of special sorts is found, it would be well to obtain a supply of fine and healthy buds from some other place. This leads to the expression of a notion that has sometimes struck the writer, that plants propagated year after year in the same place and soil, and from the same stock, may perhaps undergo some sort of deterioration similar to that which takes place in seeds under similar circumstances. Wherever circumstances will permit, it is an excellent plan to set apart a batch of plants especially for the supply of buds.

It cannot be too often and too earnestly impressed on budders to bring the incision—one slit only is the best—as near to the main stock as possible. It is even desirable to tuck that end of the shield which is nearest to the stock under its very bark if possible. The more this is attained the more thorough is the union, and the handsomer and more natural the position of the final head. In cutting out the shield, therefore, let that part which is nearest the main stock be as short as possible, more so than is commonly used; and where the cross incision is made the bud can be brought up flush to the barrel of the stock.

A New Stock for Maréchal Niel.

Like most other Roses, this popular favourite is best upon its own roots, only it takes so long to produce a plant of blooming size, and the exigences of trade demands require a more rapid mode of propagation. Perhaps there is no rose in cultivation which has been tried on so many different stocks, and on the whole with so little decided success. From the Manetti the interloper invariably takes its departure—or is expelled—after a brief sojourn. Upon the Briar it is a lottery whether it takes or not, though when it cordially unites therewith the product is usually a thrifty plant. Gloire de Dijon, Climbing Devoniensis, and the yellow Banksia have all been employed with more or less satisfaction. Some time ago it was said that Mr. J. Harrison had a special stock, called the Napoléon, which worked wonders when grafted or budded with this capricious beauty, but we have not lately heard much about it. Perhaps, however, the problem is in the way of solution at last. A few days ago at the Waltham Cross Nurseries we saw some remarkably vigorous and healthy plants (dwarfs) worked upon stocks of De la Grifferaie" (a variety of the Multiflora type little known or grown in the present day. This is a strong grower with climbing propensities and probably some constitutional affinities with the Maréchal, which are always to be sought for in such unions as interfere with the ordinary course of nature, and such budding is. There are no doubt many other of the older vigorous growing varieties and species, which might be experimented on with probably most valuable results; amongst these, such as Ayrshire Ruga, the Boursaults, Noisettes Augusta, Du Luxemburg, La Biche, in fine, any vigorous and rampant growers the cultivator may have at hand. The present season offers unlimited opportunities for experiments of this character, of which Rose amateurs in particular, who have usually abundance of time at their command, ought to avail themselves in the interests of their favourite pursuits. A somewhat unusual mode of budding Maréchal Niel recently fell under the writer's observation. The suckers on the Briars purchased for Stocks in November, had been cut off with morsels of fibrous root attached, wherever found; then potted in small pots, and treated like Manetti Stocks. At the proper time they were grafted and "potted on," and certainly had made splendid plants with rods 6 and 7 feet long when I saw them. These plants combined the advantages of the Manetti in closeness of the "work" to the soil, with the suitability of the Briar to the special variety on which we are remarking. In addition the stock and scion being more of an age, they consequently grow more equally together. *W. D. Prior.*

ESCALLONIA PHILIPPIANA.

This is one of the most desirable of hardy shrubs—for such it is at least in Messrs. Veitch's nursery at Combe Wood. The plant was described from Messrs. Veitch's specimens in these columns in 1873, p. 947. Its dense masses of white flowers have some resemblance to those of some of the Spiræas, but the botanical structure is quite different and the foliage of a richer green than in most Spiræas. We congratulate Messrs. Veitch on the introduction of so beautiful a shrub, which amply justifies our commendations. Fig. 13.

THE ROYAL GARDENS, KEW, 1877.*

The annual number of visitors to the Royal Gardens has during the past five years shown a disposition to fluctuate about an average of 670,000. Rising to nearly 700,000 in 1874, it sank in 1876 to a little below 600,000, while in 1877 it rose again to a number somewhat above the average, 687,972. As in the preceding year, the bank holiday in August (the 6th) brought the greatest number of visitors in any one day, nearly 58,000, while on two days in January and February it sank to a minimum of 24.

The vast crowds of persons who now come to Kew on public holidays are gradually becoming in one respect a matter of very serious anxiety. The plants of damp tropical climates, of which in such groups as Palms, Ferns, Aroids, &c., the collections in the Royal Gardens are unrivalled, require as essential conditions of their growth a humid atmosphere in buildings with necessarily contracted passages. When these are thronged with visitors, the doors, ordinarily jealously closed, must be kept wide open, and the air being maintained constantly in motion and laden with impalpable dust, soon loses its moisture and injures the beauty and vigour of the collections of plants in the most disheartening manner. I merely wish now to record my apprehension that it may eventually prove impossible to admit the public on exceptionally crowded days to visit certain of the collections, at any rate except in restricted numbers, which must be eventually exterminated in the process.

In the early part of last year it was brought to my knowledge by the residents on the Cumberland estate adjoining the Royal Gardens that the ground landlord proposed to erect a public-house at the corner of the Kew Gardens Road immediately opposite to the Cumberland Gate. The Richmond Road is here only 33 feet wide, and my experience in the case of the numerous houses of refreshment on Kew Green having shown me that, although well-conducted, the mere circumstances of their business cause on public holidays and frequented days a considerable concourse of vehicles and individuals, I felt it my duty to represent to the Board the great inconvenience which would ensue to the general public on their way to and from the Gardens and the railway station if such an erection were permitted. I was accordingly instructed to appear before the Richmond justices and oppose the licensing of the house on public grounds, the result being that the licence was refused.

During the past year the wall in the Richmond Road skirting the Royal Gardens has received an addition of 3 feet to its height between the Cumberland and Unicorn Gates. This addition has long been contemplated, as owing to the irregularities of the ground the wall in some places was only 5 feet in height on the Gardens' side, and had proved insufficient as a protection.

A proposal has been made, emanating in the first instance from the occupants and proprietors of the houses opposite, to remove the wall and substitute in its place an iron railing. This proposal I have felt it my duty to strenuously oppose. The Richmond Road is one of the great highways out of London, the traffic upon it is great, and, especially since the abolition of the toll on Kew Bridge, is increasing. The wall is not merely a most valuable and efficient screen against the driving and destructive easterly winds of spring, but it also checks the dust and litter of a great thoroughfare from being drifted into the Gardens. It has been judiciously remarked that a question of this kind must be decided from the inside. If this is done, the public utility of the wall cannot be combated. It is one of the first principles of landscape gardening to conceal boundaries and produce an effect at once of privacy and interminableness. There is no better means of accomplishing this than by a wall backed by well arranged shrubberies. If the wall be removed, the wind will soon exterminate the shrubs, and the eye will rest with little satisfaction on glimpses of iron railing, passing vehicles, and clouds of dust.

The Director's American Journey.

I cannot adequately express my sense of the liberality with which travelling facilities and hospitalities of all kinds were accorded to me by public companies and private individuals wherever I went in America. The fact of my being connected with this establishment was a recognised passport, and this even in the remote settlements of the Far West, for I found a reading people everywhere, few of whom had not heard of Kew Gardens. In the Northern States of America the progress of science, and of institutions for the instruction of the people in science, occupy a prominent place in the cheap illustrated periodical literature of the masses; and nowhere on the globe is this literature better or so universally read as in the States. It is hence not wonderful that the progress of such establishments as Kew, the British Museum, South Kensington Museum, &c., should be better known amongst all classes of the people there than they are in the United Kingdom generally, and so I found it.

I should add that the liberality of the English Home and Colonial Government, in respect of the Philadelphia Exhibition (of 1876), especially as shown by the extent and interest of the Colonial departments (where the Australian woods sent from the Kew Museum attracted especial notice), and by the presents made by the British Government to the United States Museums, has produced the best effects in America, and was directly the means of obtaining for me many important facilities during my journey.

The Early Opening Question.

Feeling that the responsibility of any radical changes in this great establishment—the botanical head-quarters of the British Empire and its dependencies—must ultimately rest with Her Majesty's Government, subject to the approval of Parliament, I am unwilling to enter into an expression of my own opinions at any length. I trust I may be permitted, however, to make the following remarks:—

1. For nearly a century before the Royal Gardens became in any sense a public establishment, they were widely known, while still in the possession of the Royal Family, as scientific gardens of the greatest interest and importance.

2. When, therefore, they were transferred to the Government as an institution of public utility, it was in no sense as a local or even metropolitan place of recreation. In fact, twenty-five years ago they were by no means easy of access from London, and if the claims of the public to admission to them had had no better foundation than their use as a pleasure-ground for the neighbourhood, there is little reason for supposing that they would ever have been dedicated to public use at all. As far as the residents are concerned, they may be considered as enjoying excep

* Condensed from the Director's report on the Progress and Condition of the Gardens during 1877.

tional advantages, since in addition to the Royal Gardens they have access to Kew Green, the beautiful river-side walk from Kew to Richmond, and Richmond Park, all of which are maintained at Government expense.

3. Although it has always been felt by my father (the late director) and myself that, in accordance with the views of the Government, the scientific usefulness of the Royal Gardens has under all circumstances a paramount claim, I may appeal with confidence to all who have watched the gradual development of the Royal Gardens to—I do not hesitate to say—their present condition of unrivalled excellence, to support me in saying that it has been our uniform policy to render them as attractive as possible, and to progressively remove as far as we have been able all restrictions on their enjoyment by the public. The Gardens, with all the houses and museums, are open every day of the year except Christmas Day. The museums, as far as I know, are the only scientific collections in the country open to the public on Sundays. And I do not believe that there is any garden in the world where so great a degree of finish and neatness is aimed at, where the public are so little impeded or restricted by hurdles or other impediments from the freest enjoyment of every portion.

4. My experience of the management and working of the Royal Gardens, extending now over upwards of thirty years, leads me unhesitatingly to the belief that neither the collections nor grounds can be maintained up to their present standard if the public are to be admitted in the morning. During the hours before 1 o'clock the labourers and gardeners practically accomplish the daily work necessary for the culture of the collections, and the keep of the grounds, and in my judgment they could not do so if surrounded by visitors. At 1 o'clock the gardens are "dressed" ready for the admission of the public. And though I believe our visitors are proud of Kew and deserve the highest praise for the small amount of mischief which they individually commit (apart from that which is unconsciously and inevitably brought about by the movement of large crowds), still a certain amount of depredation and wanton injury continually goes on, and our gardening staff is therefore more occupied in the afternoon with the business of protecting and supervising the collections under their control—to say nothing of answering inquiries—than of doing anything for their care and cultivation—which is indeed impracticable on full days. There is therefore a marked difference between their duties at the different parts of the day, and this division of their labour I consider it essential to preserve. It is, I am aware, proposed that this difficulty might be met by closing the houses and museums up till 1 o'clock. My experience, however, leads me to the belief that this, though it might be satisfactory to the local residents, would not be so to visitors from a distance. The only principle which does not lead to disappointment and difficulty is that when the gardens are open at all they should be so in every department.

5. With regard to the grounds I must point out that there is this radical difference between them and any other public garden—that they are really to be regarded as an open air museum, where specimen



Fig. 13.—Escallonia philippiana (from Messrs. Veitch). (See p. 108.)

plants and collections of the greatest possible value are freely displayed. Here again the necessity of constant supervision during the presence of the public is obvious. Nor must it be forgotten that grounds so occupied require, unlike other public gardens simply needing to be maintained up to the same standard from year to year, constant improvement and development. The laying out and planting of new collections, and the verification, examination, and rearrangement of old ones is work which must be done with the co-operation of the scientific staff, which it cannot and ought not to be expected to give during public hours.

6. A very large class of persons for whose use the Royal Gardens have always been primarily designed, I mean those who visit the collections with some special end in view, whether botanists, horticulturists, students, manufacturers, &c., would have serious grounds of complaint if there were no time when they could pursue their studies in quietude. Persons with proper credentials interested in particular groups of plants are freely allowed to handle and examine them in private hours, a privilege which must be withdrawn if the public are admitted at all times. To artists also leave to draw during public hours is practically useless.

7. While I entirely fail to see that the local residents have any just claim to earlier admission, I altogether doubt whether, especially amongst the residents in the north and east of London who are our principal visitors on crowded days, there is any real demand for an earlier hour of admission than 1 o'clock. On bank-holidays, which are in every way days of an exceptional character, I have willingly assented to the opening at 10 o'clock. On these days arrangements will be made for suspending all the work of the Royal Gardens, and the whole staff will have, even with additional assistance, more than sufficient occupation in watching and controlling the crowds.

The Walks.

I may mention that having had the length of walks in the Royal Gardens which have to be maintained in order, carefully measured, I find they amount to a total of nearly 15 miles.

	Miles.	yds.
Botanic gardens	5	1243
Arboretum	6	830
Queen's Cottage grounds	1	600
Herbarium and Palace grounds	1	200
	14	1163

Instruction of Young Gardeners.

The lessons given to the young gardeners in the evening in elementary physics, chemistry, structural, systematic, geographical, and economic botany, and upon which the attendance is voluntary, continue to give satisfactory results. Notes are required to be taken by all who attend, and these are examined by the instructor, and those whose attendance is regular and whose notes are satisfactory receive a certificate to that effect, counter-signed by myself.

(To be continued.)

A PEDESTRIAN TRIP ACROSS SOUTH AFRICA.

(Concluded from p. 49.)

The African Borassus is perhaps the most useful plant indigenous to this part of the country; the old stem is used for fuel and fencing, the leaves for baskets, mats, and thatch, and the sap when collected in calabashes supplies thousands of natives with a very delicious and nutritious beverage. The shrubs, and in fact nearly all the undergrowth, are of a thorny nature, often forming impassable barriers to man and the larger species of wild animals, at the same time affording admirable retreats to small and non-formidable animals when pursued by the beasts of prey. Amongst the bushes, and generally out in the open, I found two species of Strophanthus, one producing magnificent terminal flowers of a rose-white and creamy colour, with the segments prolonged into fine drooping curls, often exceeding 9 inches in length. The matured fruit of this species is very remarkable, consisting of two carpels, united at their base and spreading in nearly opposite directions, so as to form a pair of horns; some of these carpels are over 18 inches in length and 3½ inches in circumference.

On leaving the deep sandy loam of the coast this plant completely disappears, as do the two species of Oncoba. One of these is evidently O. Petersiana, but the other, which has a compact habit, large hirsute leaves, and terminal corymbs of large white flowers, was not described in my books. But brightest of all were the vast quantities of the lovely Brunsvigia multiflora mingling with Hæmanthus insignis, Crinum aquaticum and longifolium, all bestowing a beauty upon the park-like scene, which, as a rule, is so destitute of flowers.

Climbing amongst the trees and shrubs I saw several species of Asparagus, from the short A. decumbens, to one which reached the top of the highest trees, and often formed green hanging festoons between their respective branches. There were also a few Apocynums, and a very pretty Adenium with terminal clusters of rosy white flowers; besides several species of Asclepiads and Composites. Cassia and Gossypium were growing on all sides; and, judging from the fine cotton pods I have often plucked, this part of Africa would make a capital cotton producing country.

The Orchella Lichen, which produces a valuable dye, is found in large quantities on all old trees in damp situations; but this, like all other natural products, is allowed to remain unheeded by the indolent and non-advancing Portuguese. I have been told by several hunters and traders, that the Ebony tree grows away to the north of this place; also of a tree resembling the Adansonia, from which they have often procured a drink similar to "Cream of Tartar."

On nearing the Lobombo Mountains and beholding in the distance what appeared to be a well-wooded country and well-watered range, my hopes and expectations ran high that in those mountain valleys I might find my favourite epiphytes in abundance; but how disappointed I was. This range of mountains, running nearly north and south, is merely a long continuation of lofty plateaus, averaging an altitude of 2500 feet above the level of the sea. The aridity of these mountains is really extraordinary, not even producing a small stream during the winter months. Travelling in strange and comparatively unknown countries, travellers generally expect to find water where mountains exist; but here, in the Lobombo, although at the spring of the year, not a stream of water could be seen emerging from the base of these mountains. Finding this to be a fact, I was not at all surprised to find that Orchids, Ferns, and such-like plants—lovers of moisture—were rarieties, and that Aloes, Acacia horrida, fruticose Compositæ—struggling, stunted trees—and the arborescent Euphorbia canariensis grew in the dry, sandy, and shallow alluvial amongst the granite and ironstone boulders which seem to compose these mountains. On the shady side of these boulders I was certainly surprised to find several forms of Pellæa hastata and Cystopteris battling against the excessive dryness of the range; also to see some fine specimens of Erythrina caffra in full bloom. After spending some time in exploring these peculiar and interesting mountains, we travelled in a N.E. direction, over an undulating stony country, with numerous isolated plateaus, or what in South African parlance are called "koppies." The altitude of this elevation for about 60 miles averages 2000 feet, and the vegetation is similar to that of the coast lands, with a diminution of herbaceous and green foliage, and a greater amount of Aloes—that is, the vegetation is of a hardier and dryer type. Some of these Aloes are exceedingly pretty and prolific in flower; the trees are of a smaller growth, and not so abundant, being nearly limited to the banks or vicinity of rivers, except the Acacias, which are seldom seen by riversides, always preferring a dry elevation, and flourishing where other trees would perish for want of water and deep alluvial. The most interesting thing in this part was a small Leguminous tree, producing large racemes of deep violet flowers, very much resembling Robinia violacea.

About twenty miles from the Lobombo Mountains we crossed the Umkomati river, and twenty-three miles further on the Umgwenia River; these two large rivers have their origin in the Drakensberg Mountains, near New Scotland, on the east borders of the Transvaal. After a course of about 140 miles they unite at the Lobombo Mountains, and a few miles on become swallowed up in the King George's River, before entering the Indian Ocean. About thirty miles further inland from the Umgwenia River brought us to the confines of the "fever and tsetse fly country." On looking at the map and finding out the position of Leydenberg, the goldfields, and the principal part of the Transvaal, it seems incredible that all the produce from these places has to be taken over 500 miles to Durban; and all merchandise, stores, &c., required have to be brought from Durban, whilst it is only 160 miles from Leydenberg to Delagoa. This fact alone shows how gigantic the barrier must be that the tsetse fly and fever have built up; for although there is only 110 miles of dangerous country to be traversed in reaching the coast, yet up to the present time all attempts at forming a transport company between Delagoa and the Transvaal have failed. Oxen, horses, donkeys, and even camels have been tried, but nothing can stand the bite of the tsetse fly. Human beings as beasts of burden will not pay, so that the only thing which would be able to traverse the narrow strip of land and bring to the coast the produce of the Transvaal and immediate South Central Africa is the "iron horse" of the Kaffirs. But, the thousands of pounds worth of railway plant rotting and rusting at Lorenco Marquez, show how remote is the fact of a railway in that part of Africa.

The vast extent of country drained by the Umkomati, Umgowenia and Sabia rivers, although so cursed—locked up by the fever and fly—is in many respects the finest part of South and South-east Africa; for, besides having a fertile soil, large and available rivers, plenty of timber, and, above all, a harbour without a drawback as regards its navigation, and which ought to belong to England, it is at present the finest and best game country in Africa, and, I may say, in the world. Although not a sporting party, we had to do considerable hunting for the purpose of keeping the "pot going," so that our adventures and experience with the wild animals of Africa were not trifling. It would be out of place in this paper to go into an account of wild animals, but, to give my readers a little insight into the country, I will just mention that we came in contact with numerous troops of giraffes, buffalos, and quaggas. In one herd of giraffes I counted over fifty-five animals, but, for numbers, a species of antelope, or what the natives call "Impalla," excels them all, for we have often seen over a thousand together. This is a most graceful animal, but, for beauty, nothing can come up to the "Koodoo," another species of antelope, which, with its large spiral horns, elegant skin and gracefulness in all its movements, causes the hunter many a pang and feeling of regret when witnessing the poor gentle brute give its last strokes in death. Lions are also numerous, and, although we only managed to get a shot at two, very often in our wanderings through the bush and long grass we dropped across them, and, during the night when sleeping by the camp-fire were often disturbed by the lion's deep growl, which it keeps up when hunting for prey. This growl seems to stupify and transfix the majority of other animals, so that if they happen to be in the way they are easily captured by the "Forest King."

The greatest of zoological wonders, however, is the tsetse fly. This insect, which is a little larger than the house fly and nearly the colour of a bee, has been the subject of a great many investigations. Many travellers assert that its bite is only fatal to domestic animals; others, that it will not injure donkeys; and some that its bite is not fatal at all, and what we ascribe to the fly is caused by the climate. This not being exactly the place to enter upon an argument of the matter, I will just briefly state my experience. It is limited to and follows the large herds of game in low-lying tracts; it lives upon and obtains its poisonous properties from dead animals; its bite is fatal to wild as well as domestic animals; the poisoned animals linger and waste away for about two months, and my donkeys died through the effects of the tsetse. By exterminating the game between the coast and Pretoria's "Kop," this barrier to commerce would be abolished. In the lion and tsetse we have two wise provisions of Nature for keeping down the large numbers of animals, especially the antelope tribe, which, but for these "devastators" would become too numerous for this dry and often parched up country to carry, for even now they must often die in thousands for want of food and water during excessive droughts. *Chr. Mudd.*

KALOSANTHES.

In the good old Chiswick show-days these were to be seen in grand specimens, but now, from some cause or other, they are very seldom met with either in a large or small state. That they should have fallen into such neglect is most surprising, as there are few plants more showy and useful for general decorative purposes, added to which they are exceedingly fragrant and of the easiest culture imaginable; indeed, so free are they in this respect that failure is almost an impossibility, as the only thing likely to injure them is excess of water during the winter, a

season when they require but little, owing to their succulent nature. Not only are they most valuable for light greenhouses and conservatories, or sitting-room windows, but they are equally so to plunge in a bed or border near a dwelling, in which position, if sheltered from winds, they will last at least six or eight weeks in perfection. I well remember the fine display they made at Bowood some twenty-seven years ago when used in this way, with the ground carpeted with Pansies, Mignonette, or other plants of low growth, and how greatly they were admired and praised for the rich perfume they exhaled. For amateur cultivators, who have not much spare time to devote to their gardens, Kalosanthes and such-like succulents are just the things to grow, as, should circumstances prevent them being attended to for a few days, or even weeks, they do not resent it, and are little if any the worse. Indeed, at this season they often do best left pretty much to themselves, as any watering is apt to be overdone, especially during such a sunless time as we had last spring, and with the air laden with moisture in the way it was for some months. So long as the leaves are kept just plump, and the soil damp enough to maintain the roots alive, that is all they need till later on in the spring, when they begin to push up their flowering shoots, and make fresh growth—a time when liquid manure may be given with much benefit, especially if the plants are at all pot-bound, as they should be at that period.

Except for exhibition purposes, small neat specimens in about 8-inch pots are the most serviceable and easily managed, as in those sizes they may be set on shelves near the glass during the winter, a position in which they do much better than anywhere else, as there the light and air play on them, and keep them from drawing. As with all succulents, the thing is to get the growth thoroughly firm and consolidated, and this effected, a profusion of bloom is a matter of certainty. It is, however, too late now to do more than lay the foundation for another year, and the sooner this is set about the more satisfactory will the results be at that time. Cuttings put in now will, with ordinary care, form capital plants for flowering next June twelvemonths, a time when they will be found of great use to replace Pelargoniums and other spring blooming subjects when fading away. The best plan of propagating Kalosanthes is to select sufficient of the strongest shoots and cut them off in lengths of about 6 inches, the lower leaves of each of which should then be removed, and the cuttings inserted separately in small pots. If these are filled with good fibry loam, and the base of the cuttings surrounded with sharp sand, they are sure to root; but, to assist them in doing this, they should be stood on a shelf near the glass in any warm house, and be kept without water till callused. In April or May pinch out the heart, which will induce them to break; and when this has taken place they are ready for potting, and may be shifted at once into the sizes it is intended to flower them in. The best place for them is any cold pit or frame close up to the glass, and after they get a fair start the lights should be gradually withdrawn till the plants are sufficiently inured to the sun, and able to do without any protection. This exposure will so harden the growth by the autumn, that they will keep securely in any light pit or house for the winter if frost is excluded, and when spring comes round each shoot will be found to produce a fine umbel of bloom measuring from 3 to 6 inches across, according to its size and strength.

In order to have large plants for exhibition or other purposes, it is necessary to keep them from year to year; but many fail in flowering these through not cutting them back in time for them to break and be well forward in their growth by the autumn. The only way to be really successful with them is to have two sets, so as to grow on the one while the others are blooming, as then they have all the summer before them, which gives them time to ripen out in the open. Those, therefore, who may be so fortunate as to have plants to spare for making fine specimens should at once give them a shift into a size larger pot, or so reduce the old ball as to go back in the same, that fresh soil may be given. This should consist of fibry loam and some thoroughly decomposed cow manure mixed well together, in which they will luxuriate, and bear leaves of that dark healthy colour so pleasing to the eye of a plantsman. There are several new kinds, but none more showy and effective than the brilliant old K. coccinea, although one or two others are desirable for the sake of variety. *J. S.*

A SYNOPSIS OF THE KNOWN FORMS OF AQUILEGIA.—III.

19. *A. sibirica*, Lam. Encyc., vol. i., p. 150; D.C. Prod., vol. i., p. 50; Led. Fl. Ross, vol. i., p. 56; Sweet, Brit. Flow. Gard., ser. ii., t. 90.—Stature of A. vulgaris. Stems many-flowered, nearly or quite glabrous throughout. Primary petiolules 1—2 inches long, each bearing three sessile or nearly sessile divisions, the end one 1—1½ inch broad; ultimate lobes shallow and broadly rounded, quite contiguous; texture as in A. vulgaris; upper surface rather glaucous, lower more so. Lower stem-leaves petioled and biternate. Flowers bright lilac-blue or pale claret. Sepals 1–1¼ inch long, oblong or ovate-oblong, broader and more obtuse than in A. vulgaris, spreading or reflexing a little when fully expanded. Petal lamina often white, not more than half as long as the sepals, rounded at the tip, nearly as broad as long; spur moderately stout, much incurved, ½—¾ inch long. Head of stamens about as long as the lamina of the petals. Follicles glabrous, 1 inch long; style ½ inch.

Eastern half of Siberia; Altai mountains and hills of Davuria. Very near A. vulgaris, from which it mainly differs by its broader more obtuse sepals, spur rather longer and more slender towards the tip and glabrous follicles. Here belong A. bicolor, Ehrh. Pl. Select., No. 115; A. Garnieriana, Sweet, Brit. Flow. Gard., ser. ii., t. 103; and A. speciosa, D.C. Syst., vol. i., p. 336. A. spectabilis, Lemaire, in Ill. Hort. t. 403, from Amurland, seems to be a large bright lilac-flowered variety of sibirica, with the petal-lamina, as in leptoceras, tipped with yellow.

20. *A. flabellata*, Sieb. and Zucc., Fam. Nat. Jap., No. 334; *A. vulgaris*, Thunb. Fl. Jap., p. 232, not Linn.; *A. glandulosa*, Miquel in Ann. Mus. Lug. Bat., vol. iii., p. 8, not Fischer.—Stems as stout as in A. vulgaris, but not so tall, few-flowered, glabrous in the lower part, finely pubescent upwards. Primary petiolules 1—1½ inch long, bearing three nearly sessile divisions; ultimate lobes short, broad and contiguous; texture as in A. vulgaris; upper surface slightly glaucous, lower more so. Lower stem-leaves large, petioled and biternate; the sessile ones that subtend the peduncles much larger than in A. vulgaris, with large linear-oblong ultimate lobes. Flowers bright lilac or pale claret-purple or white. Sepals about 1 inch long, oblong or ovate-oblong, obtuse. Lamina of the petals about half as long as the sepals, often white in the lilac-flowered form, rounded at the tip, ¼—⅓ inch broad; spur shorter than the lamina, slender towards the end, much incurved. Head of stamens at most as long as the lamina of the petals. Follicles glabrous, not seen fully mature; style ⅓ inch long.

A native of Japan and the Sachalin Isles. A well-marked species, nearest A. sibirica, from which it may be readily distinguished by its large flabellate bracts and short petal-spur.

** New World Forms.

21. *A. formosa*, Fisch., in D.C. Prodr., vol. i., p. 50; Torrey and Gray, Flor. N. Amer., vol. i., p. 30; Flore des Serres, t. 795; A. canadensis var. formosa, Torrey; S. Wats. Bot. 40 Parall., p. 10; A. arctica, Loudon; Flore des Serres, t. 795 (plate, not text).—Habit as in A. canadensis, more slender than in A. vulgaris. Stems many-flowered, nearly or quite glabrous beyond the peduncles. Primary petiolules 1—2 inches long, bearing in well-developed root-leaves three divisions, of which the end one is distinctly stalked; ultimate lobes deeper and narrower than in A. vulgaris; texture thinner; upper surface slightly glaucous; lower more so. Stem-leaves petioled and biternate. Sepals bright red, ovate-lanceolate, spreading, usually about ⅔ inch, rarely 1 inch, long, pubescent, with an obtuse green tip. Lamina of the petal yellow, nearly truncate at the tip, about half as long as the sepals; spurs ½—⅔ inch long, slender in the lower half, nearly straight, distinctly knobbed at the tip. Head of the stamens twice as long as the lamina of the petals. Follicles glabrous, contiguous, under 1 inch long; style half as long as the follicle.

Spread from Sitka down the west side of North America to California, ascending in the Rocky Mountains to 6000—7000 feet; Kamschatka, according to De Candolle's *Prodromus*, but I have not seen Old World specimens. Very near the eastern A. canadensis, from which it differs by its larger sepals, quite twice as long as the petal-lamina.

Var. *A. truncata*, Fisch. and Meyer, Ind. Sem. Petrop., 1843, p. 8; *A. californica*, Hartweg in Gard Chron. 1854, p. 836, with a woodcut; *A. eximia*, Planch. in Flore des Serres, 1857, tab. 1188.—Lamina of the petal very little developed, truncate. California.

Of this I know but little, not having had a fair chance of studying it in a living state, but I cannot in a large bundle of dried specimens draw any distinct line of demarcation between it and A. formosa.

22. *A. Skinneri*, Hook. in Bot. Mag., tab. 3019 (named A. mexicana in the diagnosis).—General habit of A. canadensis. Stems many-flowered, glabrous. Primary petiolules 1—1½ inch long, the stalks of the three divisions they bear more developed than in any other species of the genus; ultimate lobes broadly rounded, deeper than in A. vulgaris; texture thinner; upper surface green, lower glaucous. Several stem-leaves petioled and biternate. Sepals green, lanceolate, acute, permanently ascending, ¾—1 inch long. Petal-lamina greenish, truncate, half as long as the sepals; spur bright red, slender in the lower half, 1¼—1½ inch long. Head of stamens protruded nearly 1 inch beyond the lamina of the petals. Follicles not seen.

Mountains of Guatemala, introduced into cultivation by Mr. Skinner in 1840. A most distinct and beautiful species.

23. *A chrysantha*, A. Gray, in Gard. Chron. 1873, pp. 1335 and 1501, fig. 304; A. leptoceras var. flava, A. Gray, Pl. Wright, part 2, p. 9; A. leptoceras var. chrysantha, Hook. fil., in Bot. Mag., t. 6073.—General habit of A. canadensis. Stems many-flowered, glabrous beyond the peduncles. Primary petiolules 1—2 inches long, bearing three distinctly-stalked divisions; ultimate lobes much smaller and especially narrower than in A. vulgaris; texture thinner; upper surface bright green, lower glaucous. Stem bearing several petioled biternate leaves. Sepals oblong, acute, primrose-yellow, spreading horizontally in full expansion, ¾—1 inch long, tinted claret at the very tip. Lamina of the petals a deeper (lemon) yellow, ⅔—¾ as long as the sepals, nearly as broad as long, slightly rounded and emarginate at the tip; spur straight, very slender, divergent, 1¼—2 inches long. Head of stamens a little protruded beyond the lamina of the petals. Follicles glabrous, about 1 inch long; style half as long as the follicle.

Eastern New Mexico to Arizona. It is one of the plants that has attracted the greatest amount of attention in the herbaceous ground at Kew this present summer. It comes very near A. cœrulea, but differs by its yellow flowers and much smaller sepals. Dr. A. Gray has pointed out that it is more southern and less alpine in its geographical range. *J. G. Baker.*

Florists' Flowers.

VIOLAS.—The condition of these during the present season has been of the most satisfactory kind, as in all soils and situations where I have seen them grown they have been ablaze with bloom, and in the most perfect health possible, thus showing how well the dull moist weather of the past two or three months has agreed with them. In dry seasons under bright sunshine it is a difficult matter to keep them free from red-spider and mildew, but as yet I have not seen any traces of either of these pests, which accounts in a great measure for the plants flowering in the free manner they are doing.

Although few of them are to be depended on for summer bedding, except in cool northern districts, there is nothing in the plant way that makes so fine a display or is more useful in the spring garden or to plant in moist shady borders than Violas, which, thanks to those who have taken them in hand, have been much improved of late, so that we have now not only almost every shade of colour, but a more continuous blooming habit. The individual flowers, too, of the newer varieties are altogether of better form and substance, resembling in these respects more the character of Pansies, from which indeed there is not any botanical difference. The best and nearest approach to white that I have yet seen is White Perfection, which is of a soft creamy colour, and which when better known will become a great favourite, as it is a shade that was much wanted. In blues and purples there are plenty to choose from, but my favourites are Blue Bell, Purple Perfection, and Trentham Purple, all of which are good, and sure to give satisfaction. Amongst the yellows Golden Gem is the best and most striking, and a variety that flowers with great freedom.

One advantage there is in using these Violas in bedding arrangements is the great ease with which a large stock of plants may be worked up, as they admit of propagation in a variety of ways, and may be increased at almost any season of the year. The best way to set about this now is by means of cuttings made from the tops of any of the young succulent shoots, all of which if put in under a handlight on a

cool shady border will strike almost as freely as Watercress, and in as short a space of time if kept syringed or damped overhead during the evening after hot days. In the spring they root freely in gentle heat under glass, and come readily from seed sown at the same time, although they cannot be depended on to come true in this way unless the different kinds have been kept at wide distances apart, to prevent the flowers from receiving foreign pollen through the agency of bees or other insects visiting them for the sweet nectar they contain. If sown early and nursed on in any warm frame after being pricked out in rich light soil they will make strong-flowering plants the same season; but the best way of managing is to get one or two of a sort now and set to work propagating at once in the manner above described, which if followed up will afford a large stock by the time they are required for planting out. Like all moisture-loving subjects, it is necessary, in order to grow them well, that the ground in which they are to be planted should be well broken up, and if at the same time a good dressing of rotten manure be worked in it will greatly aid them in withstanding dry weather, and help them to produce a fine head of bloom. Liquid manure administered once or twice a week likewise works wonders for them during the summer months, at which time they should be relieved of all their seedpods, as nothing is so exhausting or tends to throw plants of this class out of flower quicker than having to perfect seed, and these Violas bear in great quantity if left to themselves. Having a very light soil to deal with, I always make a practice in the culture of these to mulch the surface either with sifted leaf-mould or the dung from old Mushroom beds, which shades the roots and intercepts evaporation, thus keeping them cool and moist—a matter of much importance. *J. S.*

JERSEY *v.* THE SCILLY ISLES.

I HAVE to thank Mr. Vallance for the reply he has made to the inquiry he had evoked, when supposing I was mistaken as to the relative merits of the climates of Jersey and the Scilly Isles. The question is evidently as gratifying to him, in his love of home, as it is instructive to me, and, I hope, to many of your readers. I admire the plucky manner in which he vindicates the character of the Scilly climate, and the determination he displays that it shall not lose one iota of its merit for want of a champion. Scilly horticulture has a true friend in him, and he will not allow any of the privileges it enjoys to be infringed; but he loses sight of the fact that the love of his own does not preclude others from practising the same sentiment, and that Nature's distribution of privileges and favours is not limited. If he were not above praise, he might be commended as "a good and faithful servant, careful of a few things, and worthy of the care of many."

The Scilly Isles, as may be perceived by the examination of a map of England, lie to the west of the main-land, exposed to the full action of the wind and waves of the Atlantic Ocean. Jersey is the southernmost of the Channel Islands, ensconced in the Bay of St. Michael's, on the French coast, and within the lines of the headlands of Cherbourg and Brest, enjoying the protection of these headlands, and about 1° further south than the Scilly Isles. Being much larger than any of these isles, it has also the advantage of forest growth, as trees and shrubs grow most luxuriantly on it, and its geographical position is much in its favour.

Referring to the remarks made about Eucalyptus globulus or Australian Gum-tree, I did not inform Mr. Vallance that there was a specimen tree of it at La Chaire, Rozel, Jersey, which was 58 to 60 feet high, with a girth of stem from 7 to 8 feet; nor did I inform him that there was also a tree of Eucalyptus pendulus, about 40 feet long, stretching its strong limbs over a pathway and bridge, and in close proximity to these a tree of Acacia dealbata, 40 feet high, with a fine spreading head—all really fine trees.

Camellias grow as luxuriantly as any other shrubs and trees in Jersey, and numbers of them have attained the size of trees, producing blooms in such abundance, that I have often regretted that they could not be more easily conveyed to the admirers of their beauty. The Camellia is, in fact, hardier than the Spanish or common Laurel, and often remains uninjured when the points of the shoots of the Laurel suffer severely. The beautiful Magnolias, to which I previously referred, are now coming into bloom, and dispelling their fragrance around. The wind must be more destructive to them in the Scilly Isles than the low temperature. All large-leaved plants require sheltered situations here as elsewhere, on account of the power of the wind, which disfigures their foliage. It is scarcely necessary to refer to the Pittosporums, as they grow and thrive so freely, the exception, as far as my personal experience goes, being to the variegated form of P. Tobira. Doubtless, an occasional plant may take to the soil in which it is planted, and grow freely, presenting a beautiful appearance. As a rule it is different.

If the Liverpool New Zealand Fibre Company had known that Phormium tenax grew so luxuriantly in the Scilly Isles, they would have smiled, and might have sent their bank-notes there for it, instead of sending them to Jersey, which made me smile. This little peculiarity, so demonstrative of pleasurable excitement, might then have been general. It is possible to extract the gummy matter or resin from the leaves of this useful plant by boiling and combing. I have seen and handled specimens of the fibre reduced to the tissue and softness of silk, and evidently free from resin. I will gladly refer any of your readers who are interested in the manufacture to a friend who has been very successful with it. It is much used, but the rope manufactured from it, though stronger, is not so endurable as that manufactured from hemp. This may be attributed to the caloric it contains. I am pleased to learn from such a practical authority as Mr. Vallance that this plant is so generally cultivated. It is a valuable plant, and should be on every estate, as its leaves produce, by simply stripping them, a bundle of useful strong ties, available at any season of the year, and when required.

The varieties of Agave americana grow and thrive in these islands. I know of some beautiful specimens, and occasionally see one in bloom. How splendid the sixteen specimens Mr. Vallance refers to must be. I am pleased to have my knowledge corroborated by Mr. Vallance as to the rapidity of the growth of the flower-spikes. It appears like an Americanism to state the growth to be at the rate of 4 or 6 inches per diem, but it may be proved by placing a stake by the side of one of the plants when throwing up its spikes of bloom, and daily marking the growth. Who would not enjoy such upward progress as this? Adding cubits to one's stature bears no analogy to it.

As to the bulbous-rooted and other plants referred to in Mr. Vallance's kind response to my inquiry, they are common enough here, but the specimens are not, as a rule, so large as he specifies. Pelargoniums survive the seasons, but are generally destroyed on account of the space they occupy; the room cannot be spared, most proprietors of gardens estimating value, and being unwilling to make sacrifices to the senses. "Cut it down. Why cumbereth it the ground?" has been the edict pronounced against many valuable trees and plants which the climate has produced, which is explained by the reasoning already adduced.

Mr. Vallance would be pleased to convince me, and I would be equally pleased to be convinced, but facts are stubborn things, and with due deference to the opinion of the lady, who thought it applied especially to her husband, I am sorry to say I am unconvinced. Fruit and vegetables are sent from these islands to the London markets at all seasons of the year. There is no company formed in Jersey for Grape culture. The idea was started in an adjoining island some years since, but I have no knowledge of its development. There is nothing like individual exertion in such cases. Two modes of culture or two systems of management would be disastrous in the growth of crops. Differences as to little details often provoke antagonism amongst gardeners, as well as other intelligent members of the community, and any but gardeners (at heart or by profession) investing funds in such a speculation might as well give them to the poor in the first place, unless their object was to benefit the labourer, who would be certain to get it in the end.

It is an error of conception to suppose the produce of two or three small islands would affect the prices in the London markets. The great object of the dealers and salesmen is to get a continuous supply of commendable articles, so that as soon as they can get a demand they may furnish the supplies and improve the prices. The growers of particular crops often run great risks from the chances of sale. The great delight of gardening is in the variety of crops and growths. Complimenting Mr. Vallance on having realised that power of enjoyment, and thanking him for his instructive rejoinder to my enquiries, I venture to inform him he would find evergreen Oaks and Tamarisk admirable protective plants, and less liable to be broken by the winds than those he specifies. *Charles B. Saunders, Jersey.*

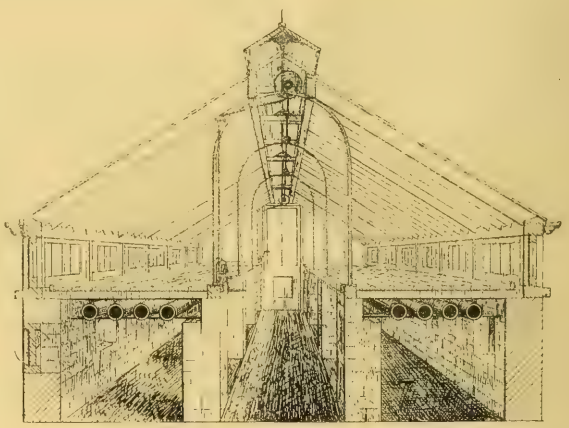


FIG. 14.—SECTION OF PLANT HOUSE IN MR. BULL'S NURSERY.

MR. BULL'S NEW NURSERY.

In October last Mr. William Bull, desiring to increase his resources for the reception and cultivation of new plants, became possessed by purchase of a piece of land about an acre and a half in extent, a part of the Cremorne estate, in the rear of Messrs. Wimsett's nursery, on which he has had erected by Messrs. John Edmonds & Co, horticultural builders, Lillie Bridge, Fulham, two ranges of houses, which, on account of the excellence of their design for the purpose in view, and the admirable character of the workmanship put into them, we think are worthy of being brought under the notice of our readers.

There are eighteen plant houses in all, divided into two ranges of nine houses in each, with a roadway 12 feet wide between them. Each house is 60 feet long by 10 feet 6 inches wide, with a path 2 feet 6 inches wide running down the centre. The sides are built in 9 inch brickwork to the height of 2 feet 6 inches above the path, with wood ventilators 2 feet 6 inches long by 12 inches high let into the same, and alternating on each side of the house at distances about 7 feet apart. These ventilators are made to swing on pivots. On the dwarf walls is erected the wood and glass framing, 1 foot 6 inches high, and from which springs the roof, the latter being constructed of moulded and rebated wood, principal rafters, and intermediate bars. Top ventilation is obtained by means of a lifting ridge, which is made to rise and fall simultaneously in long lengths by Messrs. Edmonds & Co.'s improved method of machinery worked from small windlasses fixed on the stages. The roof is strengthened and tied together by wrought-iron spandrils and columns, which, both sides under the stages; the second range being for plants requiring cooler treatment, is fitted with four rows of 4-inch pipes in each house, *i. e.* two rows laid horizontally along both sides under the stages. The wood ventilators being fixed below the hot-water pipes, the air, as admitted, has to pass between the pipes, and is consequently warmed before reaching the plants. This is an arrangement suggested by Mr. Godseff (Mr. Bull's manager), and is undoubtedly of great practical value in cold weather.

The heating pipes are supplied through mains 6 inches in diameter, branching off with smaller pipes to the several houses; and each house is fitted with improved diaphragm screw valves in the flow and return pipes. This makes each house under perfect control, enabling any one house to be heated separately from the others, or the whole together at will. There are in all about 8000 feet of 4-inch pipes.

There are commodious brick and cement tanks in each house into which the rain-water collected on the roofs is conveyed, and all the tanks being connected

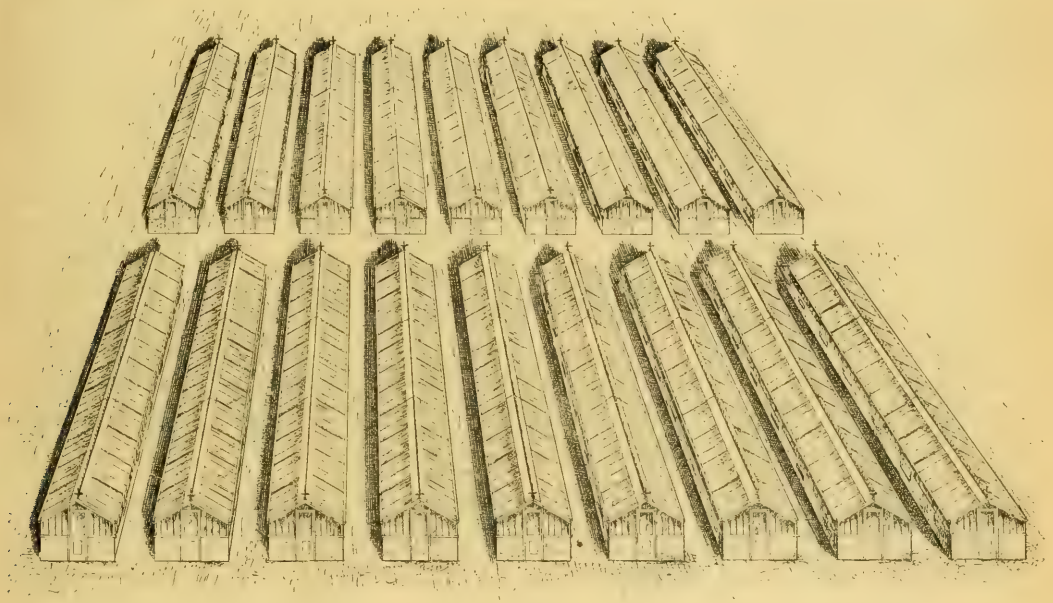


FIG. 15. VIEW OF MR. BULL'S NEW PLANT-HOUSES. (SEE P. 112.)

being painted a gray colour, give a light and effective appearance to the interior. Close-boarded stages on strong wood standards are fixed the whole length on each side. There is a sash-door in each end of each house fitted with brass bolt mortice-locks, which are made specially for the Messrs. Edmonds.

Along the top of the ridge is fixed a light ornamental iron cresting, with a finial at each end. It should be observed that six of the plant-houses have side ventilating sashes in addition to the wood ventilators, and these sashes are made to open and close simultaneously on each side by means of the Messrs. Edmonds's improved malleable iron machinery, worked from a small quadrant lever fixed in the centre of each house. The whole of the glazing is of 21-oz. British sheet glass.

The heating apparatus consists of three of Messrs. Edmonds & Co.'s patent tubular saddle boilers fixed in a commodious stoke-hole 25 feet by 25 feet, at the back of the first range of plant-houses. Two only of these boilers are kept in operation, the third being in reserve in case of accident. The first range of nine houses being intended for the reception of stove-plants, is fitted with eight rows of 4-inch pipes in each house, *i. e.*, four rows laid horizontally along together at one level there is an equal supply of water in each house; but in case of long drought or running short of water, a connection has been laid on to the high pressure service of the water company, thus insuring a constant supply. The water in the tanks in the first range of houses is also heated by hot-water pipes laid in the bottom of the tanks.

The whole of the houses were built and ready for use in a very short time, and are now completely filled to overflowing with a most valuable lot of plants, most of them of quite recent importation. A few weeks ago they contained amongst other things the enormous collection of imported Orchids which we alluded to at the time; and there may now be seen here a large and valuable lot of the new Dendrobium superbiens, as well as of the fine D. bigibbum.

PLANT PORTRAITS.

ACOKANTHERA SPECTABILIS, Benth., *Botanical Magazine*, t. 6359.—This is the plant figured in the *Gardeners' Chronicle*, 1872, p. 363, as Toxicophlæa spectabilis, the name by which it was originally described.

ÆCHMEA COLUMNARIS, André, *Illustration Horticole*, p. 51, 1878.—A woodcut illustration of a very striking new species of this genus. The leaves are described as 6 to 7 feet in length, of a rosy colour, arranged in a tuft, from whose centre proceeds a dense spike of flowers of even greater size. The flowers are described as grey in colour and unattractive, but the fruits by which they are succeeded as golden-yellow. This gorgeous plant was discovered by M. André in New Granada.

AMBROSINIA BASSII, Linn., *Botanical Magazine*, t. 6360.—A curious little Aroid with oblong stalked leaves, and spathes prolonged into a long tail and a tongue-shaped spadix, with the male flowers on one side, and so placed as to preclude the access of the pollen to the stigma on the other side of the spathe save by insect agency.

ANTHURIUM SCHERZERIANUM, var. WILLIAMSII, *Illustration Horticole*, t. 306.—The white variety of the well-known "Flamingo plant," first exhibited by Mr. Williams in 1874.

CALATHEA LIETZI, E. Mort., *Gartenflora*, t. 935.—Leaves oblong-lanceolate, deep metallic green, and shining on the upper surface, with feather-like markings of deeper colour, purplish violet beneath. Introduced from Brazil by MM. Makoy of Liège.

CALATHEA MEDIO-PICTA, *Gartenflora*, t. 934.—A species with oblong-acute leaves, tapering to the base, dark green with a broad central stripe of white. Native of Brazil. Introduced through MM. Makoy.

CAMELLIA MADAME LINDEN, *Illustration Horticole*, t. 308.—A sport from Madame Verschaffelt. The form is regularly imbricated, the substance good, and the colour blush-coloured, with pinkish stripes; each petal, moreover, is margined with white. The variety in question received the 1st prize for the best new variety of Camellia at Ghent at the recent exhibition.

CHLOROSPATHA KOLBII, Engler, *Gartenflora*, t. 933.—A spotted-stalked, pedate-leaved Aroid, with elongated, cylindrical, convolute spathes. The plant is chiefly of botanical interest. It was collected in Columbia by Wallis, and is named in honour of M. Max Kolb, the talented curator of the Munich Botanic Garden.

CHRYSANTHEMUMS, *Floral Magazine*, t. 307.—The varieties figured are: 1, Fulton, yellow; 2, La

Nymphe, pink; 3, Fulgor, rosy-purple. They all belong to the Japanese section.

Crocus etruscus, *Botanical Magazine*, t. 6362.—We owe the introduction of this pretty lilac-flowered species to the zeal and taste of Mr. George Maw, who found it in plenty in the Tuscan Maremma, and introduced it to Kew, where previously it had been only known by the descriptions of the late Professor Parlatore.

Grevillea ericifolia, *Botanical Magazine*, t. 6361.—A characteristic figure of a pretty greenhouse shrub flowering in mid-winter and remaining for several weeks in flower. The leaves are linear, and the red flowers in clusters.

Hyacinth Grand Master, *Floral Magazine*, t. 308.—A single variety, the segments being blue or bluish lilac in the centre, edged on either side with a marginal stripe of greyish blue.

Iberis.—The *Florist* for May, 1878, gives a coloured plate of two dwarf varieties of Candytuft, one with white, the other with rose-coloured flowers. They are very beautiful, and well deserving culture as hardy annuals. They were sent out by MM. Vilmorin & Co.

× Lælia Veitchiana, *Floral Magazine*, t. 305.—A noble hybrid raised by Mr. Dominy, between Cattleya labiata as pollen parent and Lælia crispa as seed parent. The plant did not flower for sixteen years after its origin, but it was worth waiting for.

Loxococcus rupicola, Wendl. and Drude, *Botanical Magazine*, t. 6358.—An elegant pinnate-leaved Palm, native of Ceylon, where it attains a height of 30—40 feet. Its coral-red inflorescence is produced from the upper part of the stem beneath the leaves. The seeds are chewed by the Cingalese with their Betel. The plant flowered for the first time in Europe at Kew in the spring of the present year, and was mentioned at the time under the name of Ptychosperma rupicola.

Pentstemons, *Revue de l'Horticulture Belge*, May, 1878.—A group of hybrid Pentstemons, scarcely equal to the best English varieties as shown by Messrs. Laing and others.

Primrose magenta, *Floral Magazine*, t. 306.—A bright magenta-coloured Primrose, raised by Mr. Dean, and one to be inquired for by all lovers of hardy flowers.

Senecio subscandens, *Botanical Magazine*, t. 6363.—A handsome trailing plant, native of Abyssinia and central tropical Africa. The specimen figured was from a plant which is trained up one of the girders of the Palm-house at Kew, where it flowers during the winter. The foliage is pinnately lobed, the lobes sharply toothed, the two basal ones embracing the stem-like stipules. The heads of yellow flowers are about half an inch in length, cylindric, surrounded by reddish bracts and disposed in loose cymes.

Stone's Apple, *Florist*, May, 1878. — A noble-looking Apple, excellent for culinary purposes, and a favourite for market supply. It has already been figured in our columns.

Notices of Books.

Anthropology. By Dr. Paul Topinard. Translated by R. T. H. Bartley, M.D. Chapman & Hall.

To those who maintain that the proper study of mankind is man we commend this volume. The comparative anatomy of man and animals, their life-history in its physical and in its mental aspects, in its relation to its surroundings—such is the immense field of which M. Topinard undertakes to furnish his readers with a general glance. Elaborate details are not to be expected, but merely sufficient to indicate the general nature of the subjects to be investigated. We find, then, after some introductory observations, a brief account of the comparative anatomy and measurements of the skeleton, teeth and muscles of man and animals. The second part is devoted to a description of the principal races of mankind, their characteristics, and mental peculiarities. Having pointed out the distinguishing characteristics of the several races, the author devotes a few pages to the question whether or no all these races are varieties of one species, or whether they are to be considered as belonging to so many distinct species. The author points out that between the fair-skinned, blue-eyed Swede and the dark-skinned, woolly-haired, thick-lipped Negro, for instance, there is as great a difference or greater than between camels or dromedaries, jackals and dogs, wolves and foxes, goats and sheep; and he concludes that the human "family," the first of the "order," "Primates," is composed of species or fundamental races. As to man's place in Nature, although maintaining that physically he is subject to the same laws as the rest of the animal creation, the author points out that the spirit of inquiry is the most noble of his attributes. "For want of knowledge the imagination muses upon the unknown, and forms it to our own ideal. But to true observers the reality is sufficient. They contemplate the magnificent spectacle which is opening out before them; they even worship Nature in its beauty, its grandeur, its harmony, and its thousand varieties of form and movement. The animal has the simple notion of cause and effect, and sees that the boundary of his faculties and senses is limited. Man alone investigates and wills; his horizon is indefinite, like his intellectual faculties, when they are exercised without trammel." The author might have added that to man alone, whatever be his origin, is permitted the faculty of perceiving, however faintly, in the workings of Nature, the handiwork of one Supreme Intelligence.

—— *The Model Guide and French Manual for English Visitors to Paris and the Exhibition*, by A. C. Du Hamel, B. A. (Gregory & Co.) A useful phrase book, with numerous hints as to what to see in Paris, and how to see it. Various conversion tables for money, weights, and measures add to the utility of the volume.

—— *Dictionary for the Pocket—French and English*, by John Bellows. (Trübner & Co.) An admirable dictionary, necessarily in very, not to say painfully small type, but clearly printed and most conveniently arranged. The ready way in which the genders of the nouns are shown, and the mode of pronunciation indicated, give this dictionary a special value. In addition various maps and tables enhance the utility of the book. It is evident that the greatest care has been taken to make it serviceable, and the compiler has succeeded.

—— *A First Catechism of Botany*, by John Gibbs. (Chelmsford, Durrant). We altogether doubt the wisdom of attempting to teach children botany by means of catechisms. A ramble in the fields to collect specimens, a demonstration by the teacher with the aid of the black board, or of diagrams, and then a supervision of the children as they are made to find out for themselves with their own hands and eyes what their teacher has told them, would be much more efficacious than any such catechism as that now before us, which seems intended to be learnt by rote.

Publications Received:—Bulletino della R. Societa Toscana di Orticultura.—Bulletin d'Arboriculture.—Western New York Horticultural Society.—Proceedings of the Liverpool Naturalists' Field Club.

The Villa Garden.

Watering.—The villa gardener has need just now to employ much of his spare time in watering his garden, for the drought is beginning to tell severely on his plants. The heavy, or rather pouring showers of a few weeks ago (when the rain fell in places as if the windows of heaven had opened to pour forth another deluge over the face of the earth), are now telling their tale; they beat down the lightest soil hard and firm, and now that hot sun and drying winds are doing their worst, the earth is cracking in all directions, as if it had secrets within its bosom to show to the children of men. The more the ground cracks the drier does it become, and if rain does not fall shortly the water-can will require to be in constant requisition. But this necessary operation can only be thoroughly performed at the expense of time, and time is an object to many villa gardeners. What then can be done to mitigate the effects of the drought?

Hoe deeply in all cases when it can be done. This is a comparatively easy matter in the case of kitchen garden crops that are wide apart, such as Brussels Sprouts, Kales, Cabbage, Peas, &c. There is nothing like deep hoeing so long as it does not disturb the roots of the growing crops. A loose surface soil keeps the subsoil much cooler and more comfortable than a broad firm surface does; and certain of our large nurserymen are in the habit of encouraging their men to hoe deeply in dry weather, by giving them special premiums in order to secure the due execution of their work.

In the case of kitchen garden crops, a little of the fine surface soil drawn up to cover the roots of growing plants is of great assistance also in mitigating the burning effects of the sun.

But the flower garden, and beds and borders of flowering plants, suffer also, and as the plants cover the whole surface of the soil, it is obvious the hoe cannot be applied to the beds; and yet their surface is dry and parched, and ominous cracks look up from amid the plants. What is the best thing to be done in this case?

In so far as it can be done, let the surface soil be scratched and loosened in any way possible without doing injury to the plants. It is of little use watering a hard-baked surface, as the water will be pretty certain to run from it, and not penetrate the soil; but when the surface is loosened, if only a little, the water can penetrate it, and reach the roots of the plants, imparting to them the refreshment they so much need.

If hot dry weather exists, it is quite certain dryness and cracking will be certain to follow after watering. Then comes the question how best to keep the surface of flower-beds as cool and comfortable as possible. The general practice is to put on the top of the soil a layer of Cocoa-nut refuse, which has a cooling effect, and at the same time a neat appearance. In course of time, however, through repeated waterings, the surface of the Cocoa-fibre becomes hard and almost impenetrable, and in its turn needs to be occasionally stirred to keep it loose and open.

One of the best things for our purpose is spent Hops from a brewery. It may prove easier to obtain these than to get a supply of Cocoa-nut refuse. They hold moisture better than the latter, and in course of time do not bake so hard on the surface, are considered to possess greater fertilising properties as a surface-dressing, and to be superior in all respects; but spent Hops do not look so neat as Cocoa-nut refuse after all.

A good soaking should be given before the covering is supplied, and another soon afterwards. If the soaking be thorough, the Villa gardener may then go on his way rejoicing, for the drought will have no present fears for him. If it be prolonged, subsequent applications of moisture will have to be given till the clouds shall open and the blessed invigorating rain falls, refreshing and renewing the face of Nature.

Garden Operations.

KITCHEN GARDEN.

In this district during the past few weeks the nature of the weather has been of such an arid character as to materially affect the state of vegetation in certain subjects beneficially or otherwise. This fact is plainly demonstrated in the case of the Potato crop, as, where the tubers were planted very early in the season, or where the plants happen to be located in damp positions, the predominant prevailing condition has proved to be most beneficial, so much so that here at the present time (July 22) the crops of early kinds are in the best condition possible, perfectly clean and entirely free from disease, and in a fit state to be lifted at any time. This operation as far as practicable should, in our opinion, be effected before the advent of a heavy rainfall, which in all probability may ensue after a prolonged season without rain. The same conditions have not, however, been so advantageous to crops which were planted later in the season, nor has it been so in regard to those in very dry places, as these indicate the lack of moisture, and without a supply of it ere long the yield will undoubtedly be light.

Under a temporary period of powerful sunshine and aridity combined, it is not prudent to proceed with the planting out of such subjects as Cabbage plants, or those of any other description beyond what is absolutely required under existing circumstances. This matter cannot however be too long delayed, or the successional supplies which are required will be interfered with. Let therefore good breadths of Rosette Colewort, Cabbage, Leeks, &c., be got out now, and if not already done, defer no longer the sowing in quantity of Lettuce and Endive. Every attention and encouragement should be given to these plants, as they will form the plants which are to give the autumn and early winter supply. The Black-seeded Bath Cos Lettuce is the best of its class for this purpose, and the Stansted Winter Cabbage variety should be selected in its way. Amongst the

different sorts of Endive for present sowing the moss-curled, green-curled, and broad-leaved Batavian should be chosen. Sow also Cabbage and Cauliflower seed for the earliest supply when time permits. Let the ground which is selected for next season's crop of winter Onions be prepared by being deeply cultivated, and a plentiful supply of good decomposed manure be well incorporated with the soil; after this process it should be trodden down moderately firm, and a part of the seed should be sown about the 11th of the ensuing month, and the rest at about a week later. The same dates will likewise be suitable for sowing the beds of winter Spinach. Give this estimable winter crop plenty of room between the rows, so that it can develop itself fully, and let sunshine and air well into the plants; 18 inches between the rows will not be too wide in well-enriched soil. Amongst tender herbs Basil is, at many places, in great request at certain seasons; see that there is no lack of it, and sow at once in pots if it be necessary. Where very late Peas are highly esteemed it will be advisable to make a sowing of Little Gem or Laxton's Unique at once either in frames or pits, or very sheltered places, such as at the base of a south wall. French Beans, which are placed in similar situations, should have abundant supplies of water given to them, and the surface of the soil about them should be well mulched with manure. *Geo. Thos. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

If there is any dependence to be placed on the old tradition of St. Swithin we are now to have a dry time of it, and certainly, judging from present appearances, there is every prospect that it will be so, as the barometer is very high, and indications we had of rain have mostly passed away. In light shallow soils, fruit trees and Strawberries are already feeling the drought, and unless the latter are heavily watered to assist them in forming their blooms that remain in embryo in the hearts of the plants till the spring, a crop next season will be looked for in vain. Before doing this, however, the beds should be cleared of all useless runners and weeds and receive a good coating of half rotten manure, to act as a mulching, the juices from which washed in during rain or whenever water is applied will have a highly beneficial effect in restoring the exhausted energies of the plants. Those layered in pots for forcing or forming fresh plantations will now require unremitting attention, the hot sun and arid state of the atmosphere rendering frequent watering necessary in order to keep the soil moist and to encourage a quick formation of roots, for unless this is done, red spider soon gets a hold of the foliage and causes irreparable damage. Weak sewage or soot-water applied in a clear state, will now be of great assistance in pushing a vigorous growth, but during the present early stage it should not be used more than about twice a week, as till the pots become well-filled with roots, it is an easy matter to over-stimulate or so gorge the plants as to produce a too plethoric habit. The crop of Raspberries being now over, no time should be lost in removing the old canes that the young ones may have the full benefit of sun and air to ripen and harden the wood. Double bearing kinds will be greatly benefited by a good soaking of water, and a heavy mulching to shade the soil and keep their roots cool, which will enable them to swell off a fine lot of fruit for the autumn. Peaches and Nectarines too will require assistance in the same way, for if allowed to become at all dry, red spider is sure to get a hold on them, as this pest always follows in the wake of poverty induced by a dry border, or when the energies of a tree are taxed in carrying a crop. A moist root run is one of the surest and best preventives against the attacks of these most troublesome insects, and the next is a good drenching of water every night from the garden-engine, which after a hot day has a most salutary and refreshing effect on the foliage. The same useful implement will likewise be best to wage war against the Plum aphis, which this year, from some cause or other, is more than usually troublesome, and getting rid of them by the use of insecticides is quite out of the question. If a well-directed jet is brought to bear within a few feet of them, so as to take the leaves sideways or behind, it is impossible for them to resist its force, and a strong stream may now, in the present advanced state of the foliage, be used without the least risk of lacerating it or causing injury in any other way. Independent of the necessity of at once eradicating these aphides by some means or other for the sake of the health of the trees, their excreta soon spread over the fruit, and not only spoil its appearance, but greatly impede its swelling by stopping the pores. Unfortunately, except in very favoured localities, the Pear crop is anything but a satisfactory one, and to speak of thinning under such circumstances would appear superfluous advice, and yet in cases where any particular tree may have a heavy load to carry it is very essential, in order to secure fine fruit, that it should be relieved of a portion of its burden, as what is gained in quantity is more than lost in size and quality, besides which a tree overtaxed one season will rest itself the next by refusing to bear. This being the case, it is far better to remove any small or misshapen fruit at once than to allow Nature to relieve herself in her own way at the expense of another year, as is always done if timely assistance is not afforded either by lightening the load or well feeding the roots with sewage, which for Pears on the Quince stock cannot well now be given too often. The best way of applying this is to make a large shallow basin-like receptable round the stem of the trees by drawing the soil away with a hoe, and when this is done the holes or depressions so made should be partly filled in with half-rotten manure, when the trees may be thoroughly soaked with great ease, as there is then no escape for the water but in a downward direction, and the mulching intercepts its escape by evaporation. *J. Sheppard, Woolverstone Park.*

FRUIT HOUSES.

Melons.—To those plants having their roots in a somewhat confined space, and which are now swelling off their fruits, give copious applications of liquid manure in a weak state, and in doing so where the fruits are in pits and frames, avoid wetting the fruit as much as possible, as, in connection with imperfect ventilation, this would cause them to crack. And do not water too closely to the stems of the plants, which would probably cause canker. Should this disease appear, place some fresh lime and new soot around the stems of the plants so affected. Immediately after the application of liquid manure, wash the foliage over with clear water through a rose and long-spouted watering-pot. Stopping, thinning, tying, and otherwise arranging of the shoots, must be regularly and skilfully attended to. Damp the houses, pits, or frames, in which Melons are growing, twice a day during bright and favourable weather—weather which we have been and are still enjoying, shutting-up early, according to the state of the weather and the aspect in which the houses are situate—say at from half-past three to four o'clock. In structures where Melons are approaching maturity increase the ventilation with a corresponding decrease in the atmospheric moisture of the house and plants. Should dull weather ensue, stir the fires up a little at night. In succession houses where the fruits have set too thickly, thin them out to about four or five (according to the strength of the plants) so soon as it can be ascertained which are going to swell, of the best and most even-shaped fruit, which should be distributed regularly over the plants, thereby causing an equalisation in the flow and concentration of the sap at regular if not equal distances from the main stem. Place some pieces of slate or wood in a sloping direction to prevent the lodgment of water, to keep the fruit clear of the damp surface, which would cause their disfigurement. It is not too late to make another planting, where so required, and where hot-water pipes are at command, otherwise the results will be very doubtful. *H. W. Ward.*

Figs.—Trees from which the early fruit was gathered in May will now be ripening off second crops, the quality of which, with full exposure to sun heat and air, must be all that can be desired. If in pots the roots must be well mulched and constantly watered, to prevent the numerous ills which follow an insufficient supply of good liquid food, as no amount of syringing will keep the foliage free from spider where Figs are allowed to become dry at the root. Neither will after management prevent the finest fruit from dropping just when it ought to be getting ripe. All pot Figs should be plunged up to the rim, and the feeding-roots encouraged upwards by means of large sods of turf, intermixed with rotten manure and old mortar laid round and above the rims of the pots. Trees growing in borders are less liable to suffer from sudden checks; but they must be kept heavily mulched and drenched with water if the fruit is to be plentiful and fine. Where Figs can be planted against the north side of a house or pit, and allowed to root up the stems into the wall, with light turf or moss packed in amongst them for the reception and retention of daily supplies of liquid manure, and the shoots trained from the ridge or highest part of the house down to the southern eaves, heavy and equally distributed crops of fine fruit may always be had without fear of loss from checks. Brown Turkey is one of the best for this kind of training, as it is unquestionably the best for eating. If this brilliant weather continues, the movable sashes may be drawn quite off the earliest house; and when the second crop has been cleared off, the trees may be allowed to sink gradually to rest, with just sufficient water to keep them clean and healthy. If brown scale attacks the trees, no time must be lost in destroying it, otherwise it will soon disfigure and destroy fruit and foliage. The most economical way is to hand-wash with a solution of Gishurst before it reaches the leaves. Attend to regular stopping, thinning, and tying out in late houses, so as to give advancing crops the full benefit of sun and light, and keep the roots well covered up with good rotten dung. Syringe heavily twice a day, and shut up with sun heat ranging from 85° to 90°. Young trees from eyes that have finished their growth, may be set out-of-doors in a warm place to ripen off and go to rest. *W. Coleman.*

Cucumbers should be daily attended to in the way of stopping and thinning the shoots, which, if neglected for only a few days, become a thicket of wood, thereby wasting the energies of the plant, and to a great extent rendering the plant non-prolific; therefore, no matter how busy we may be—and it is the gardener's fate to be always busy—we should attend to the daily stopping and thinning of the Cucumber plants, and our reward will be ample. Plants judiciously crossed, and having the old wood regularly cut out when practicable, and sufficient young laid in, can be kept bearing all the year round, as most of your readers are aware, by top-dressing with good loam and rotten dung (free from worms), and frequent and liberal applications of liquid manure, with a suitable temperature and a genial atmospheric moisture. Ridge Cucumbers will require to be stopped frequently, and should the shoots become crowded, they will require being thinned. Look after the plants every day, and cut all full-grown fruits, and also Gherkins for pickling, &c. *H. W. Ward.*

PLANT HOUSES.

Abundance of ventilation will now be necessary for all plant-houses, with an unlimited amount of moisture, particularly in houses where soft foliaged plants are grown, whether they are stove or greenhouse. A dry, hot atmosphere is very favourable for insect pests, which will spread at an amazing pace unless the proper means are adopted to keep them in subjection. On the other hand, as a dry parching atmosphere is anything but favourable to plant life, the water-pot and syringe should be pretty freely used in damping down walls, passages, pots, staging, or material, on which the plants are growing; neither should the plants themselves be omitted. The majority will be much benefited by occasional sprinklings overhead during very hot days, and a thorough good syringing when shutting up. In fact, the syringe should be plied with good force amongst most plants once a-day, which will tend to keep them pretty free from the ravages of mealy-bug, thrips, &c.; for although these pests get into lurking-places beyond the reach of the syringe or other instrument used for the purpose, still they may be kept down to a very considerable extent, by thorough and repeated drenchings of water. Sponging plants is a monotonous weary job, but when such pests as mealy-bug have had a firm footing for years it too frequently becomes necessary to resort to this practice of cleaning, particularly with such subjects as Stephanotis, Gardenia, Eucharis, &c., which rank amongst our most indispensable and valuable flowers. Epiphyllums will now be making their young wood, and should be kept in a moist stove temperature until their growth is finished, when they should be put in a cooler and drier house to ripen off. Begonias manicata, hydrocotylifolia, nitida, digswelliensis, and insignis are all alike useful for winter blooming. The stock should now be inspected, and propagation pushed on if necessary. They all do well in small pots, and delight in a good growing atmosphere, with a proportionate amount of shade. Pot them in a mixture of peat and loam with a little deer or sheep-dung and sand—it is a mistake to use much sand. Pot on batches of Gesnera Cooperi, exoniensis, Donckaarii, cinnabarina, refulgens, and zebrina. Keep them in a moist stove temperature, but avoid syringing the foliage overhead; give occasional waterings of liquid manure, and by no means crowd the plants. Linum trigynum will now have made its growth, and should be placed in cool frames on a moist bottom and kept well syringed. Occasional dippings in tobacco-water and sulphur will tend to keep the plants tolerably free from red-spider to which it is very subject. Monochætum ensiferum and M. sericeum multiforum should be well cared for, and potted if necessary in a compost of fibrous peat, loam and leaf-mould; they will do well in a pit with an intermediate temperature. Eranthemum pulchellum should, if not already done, have their final shift into their flowering pots, and when filled with roots should be frequently watered with liquid manure. Push on the growth of Sericographis Ghiesbreghtiana, Justicias, Centradenias, Scutellarias, &c., for winter blooming. Cut down a good batch of Pelargoniums of the Vesuvius, Christine, and Madame Vaucher types for blooming in winter and early spring. Pot up those already started into growth, and put them where they will get plenty of sun. Propagate from cuttings to increase stock. Attend well to Chrysanthemums, rub out all surplus growths, and tie up the main shoots to stout sticks to prevent the wind breaking them off. Attend to the necessary fumigation of Tea Roses in pots, and adopt the proper means to keep down mildew. Sow a batch of intermediate Stocks to flower in pots, or plant out, early next year. *J. Ollerhead, The Gardens, Wimbledon House, S.W.*

THE

Gardeners' Chronicle.

SATURDAY, JULY 27, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 30	Hinckley Floricultural Society's Show. Stepney Flower Show (two days). Halesowen and Hagley Horticultural Society's Show
WEDNESDAY,	July 31	Weston-super-Mare Horticultural Society's Show.
THURSDAY,	Aug. 1	Paris International Horticultural Exhibition (open to-day).
SATURDAY,	Aug. 3	Manchester Botanical and Horticultural Society's Cottagers' Show Pudsham Horticultural Society's Show. Otley Horticultural Society's Show. Southampton Horticultural Society's Summer Exhibition (two days). National Carnation and Picotee Society's Show at Manchester (three days)

THE Exhibition of the CARNATION AND PICOTEE SOCIETY, which took place on Tuesday last, was very successful regarded from the point of view of the professed florist. The several classes were well represented, and the skill of the cultivator, as well as the beauty of form and colour of the flower, were well displayed. No attempt was made to break from the traditional mode of exhibiting these flowers, a tradition so venerable and so religiously acted up to, that it would appear as if the height of excellence as regards practice had been reached, and that long experience had shown that no improvement could be made. At the risk of being considered rash heretics, we venture to dispute the assumed excellence of the present mode of exhibiting these flowers. Is it necessary, for instance, that the flowers, no matter what their colour may be, should be throttled by a stiff collar of dead white card-board, projecting all round the flower for some distance? Assuming that some support of this kind is necessary to prevent the effect of the bursting of the calyx, is it necessary that such support should be so conspicuous? The effect is often distressing, often ludicrous, nearly always detrimental to the lighter colours of the flowers themselves. The card might be so curtailed in its proportions as not to be objectionable, and it might be of some light warm neutral tint which should enhance, not detract from, the colour of the flower. So far we have been assuming the necessity for such a support—a necessity no one will gainsay under present circumstances. But are not those circumstances susceptible of alteration? We think they are. The florists have succeeded in making what is botanically a monster, they have inordinately increased the number of petals, and the result is burst calyces and dishevelled flowers needing a girdle of cardboard, as modern ladies' dresses need artificial suspension to keep them out of the mire. To our thinking the florist has it in his power by the exercise of judgment and patience to overcome this defect by making the flower support itself.

To explain our meaning we must enter into some botanical details. The centre of the flower is occupied by the ovary, which ripens ultimately into the capsule containing the seed. Now this ovary naturally occupies a great deal of space, and as it swells it pushes aside the petals, and ultimately causes the calyx to burst. But some Caryophyllaceæ, notably the common Lychnis of our hedgerows, have some flowers with stamens only, others with ovaries only. Naturally the former would not be so liable to burst open the calyx as the latter. Why not then endeavour to raise a race of one-sexed Pinks or Carnations, reserving the stamen-bearing flowers for exhibition purposes, and the ovary-bearing flowers for seeds? Among a large number of plants some would assuredly be found all stamen-bearing, others all pistil-bearing, and these should be selected with the object in view. No doubt the process would be a tedious one, but the florist is by nature, or ought to be, patient, and surely it would be better for him to move out into new grooves, and make progress, than to be continually harping on the same string and practically acknowledging failure by resorting to artificial devices, instead of availing himself of Nature's own indications.

But if this gradual production of one-sexed flowers be objected to on the score of the time required to produce them, there is another alternative which might be tried. Outside the true calyx or "pod" of the florists' vocabulary is a series of scales, overlapping like the scales of an Artichoke head, much shorter than the calyx, and forming what is botanically known as an epicalyx. In the old Wheat-ear Carnation this epicalyx exists in a multiplied state, the true petals are not formed, but these bracts exist in unwonted numbers, producing the Wheat-ear-like appearance which, has given the plant its name. Now instead of multiplying these scales, which however curious a process, is not a desirable one from the florist's standpoint—instead of multiplying them, increase their size, so as ultimately to get an outer expansible sheath to the flower, which would prevent the bursting of the pod. "Not practicable," we fancy we hear our enthusiastic friends retort. But with all deference, we submit that it is at least as practicable as dozens of other equally or more important changes which have been wrought by the hand of the gardener who has had foresight enough to avail himself at once of the hints that Nature gives him, and of the pliability which enables him, within certain limits, to work his will. But if these things be deemed too visionary, and florists have neither time nor inclination to make the necessary experiments, let them abolish the card-board collars and substitute a fine elastic band, which should be as inconspicuous as it would be useful, or, at least, let the collars be smaller and less trying to the complexion of the fair flowers.

—— THE LAKE AND ROCKWORK AT ELVASTON CASTLE.—In our volume for 1874, vol. ii., p. 591, we gave an illustration of the garden at Elvaston Castle, with its singular hedges of clipped rows, and other specimens of the *ars topiaria* so familiar to our forefathers, but which the less formal taste of our days has abandoned. Our present illustration (fig. 16) shows a view of the lake and rockwork looking north-east from the Castle, and will at least confirm the modern taste by showing the beautiful forms assumed by the Cedar of Lebanon when left to itself. The lake was formed by Mr. BARRON, now of Borrowash, and is a good specimen of his taste and ability.

—— PRODUCE OF SEVILLE.—The cultivation of Oranges in Seville is reported to be largely on the increase, several new plantations having lately been formed. It is described as a very profitable branch of culture, about 50,000 chests of Oranges being annually shipped from this port. Large quantities of cork are also produced in the neighbouring mountains, and the cork, which is of excellent quality, is shipped in great quantities, in its natural state, or manufactured into bottle-corks, to several ports in Europe, and to the United States of America. The Liquorice (Glycyrrhiza glabra) grows spontaneously in this part of Spain, and, manufactured into paste, it is shipped chiefly to America.

—— MANDEVILLA SUAVEOLENS.—A very fine example of this fine stove-climber is now in bloom in one of the large plant-houses at Luton Hoo Park, Beds, the residence of Mrs. GERALD LEIGH. The specimen is planted out against a pillar, and from thence it has been carried up into the interior of the roof, where it grows with amazing rapidity, and flowers with great freedom. Exquisite as the numerous white flowers are when looked at from below, yet their profusion is hidden by the vigorous green leaves; and, in order to comprehend its amazing degree of floriferousness, the plants should be scanned from the outside of the roof. Mr. BUTTERS, the gardener at Luton Hoo, states that it proves invaluable for cutting from during a considerable part of the year, and we can readily understand that it is so. Bushels of white flowers might be cut without robbing the plant of the whole of its wealth and floral beauty.

—— SCOTTISH ARBORICULTURAL SOCIETY.—The first Arboricultural excursion of the Society will take place on Monday, August 5. The plantations to be visited are those of Scone and Lyndoch, Perthshire—the estates of the Earl of MANSFIELD. Conveyances will leave Perth railway station for Scone about 10.30 A.M. Mr. WILLIAM M'CORQUODALE, forester and wood-surveyor, will conduct the party. The Society's photographic artists and an experienced reporter will accompany the excursion. Members who intend being present should communicate with the secretary, Mr. J. SADLER, on or before Monday next.

—— GROWTH OF TREES.—A special feature of the present year is now evidenced in the luxuriant growth common to all trees and shrubs, but is specially seen in the giant forest trees, as not only is the early growth unusually robust, but the new summer shoots are strong, and covered with leafage of a paler and therefore prettily contrasting hue. In a few years hence, as we examine the branches of trees, we shall see the effects of the moisture of 1878 fully shown in the lengthened growth of that season, as compared with that of the few preceding years, whilst future generations, whose duty it may be to fell and utilise the monarchs of our soil may, perchance, if they examine the annual rings of growth formed on the trunk, perceive that 1878 was a year peculiarly favourable to the production of wood, and to the building up of trees.

—— Mr. MAW'S GREEK ASSAILANTS.—The five men by whom Mr. GEORGE MAW, of Benthall Hall, near Broseley, was robbed last October in the island of Santa Maura, as narrated in our columns, were tried last month at Missolonghi. Three were acquitted on the ground of insufficient identification, and the other two sentenced to ten years' hard labour. The sentence having been appealed against, the case has been taken to the Court of Cassation at Athens. It will be remembered that through the prompt action of Mr. ONORIO, the British Vice-Consul, and the energetic proceedings of the local authorities of Santa Maura, the five men were captured and the whole of the stolen property recovered within a few hours of the robbery.

—— PHALÆNOPSIS VIOLACEA.—Mr. MURTON, gr. to M. H. WILLIAMS, Esq., Tredrea, Perranarworthal, Cornwall, informs us that the beautiful Phalænopsis violacea is now in bloom there. It is described by Mr. MURTON as being quite distinct and most attractive; the upper part of the flower white, the lip and under part of the lower petals dark brilliant rose. Our correspondent would be glad to know if it has flowered in England before.

—— MESSRS. LITTLE & BALLANTYNE'S NEW PREMISES.—We learn from the *Carlisle Patriot* that Messrs. LITTLE & BALLANTYNE have taken possession of the new premises erected for them on the site of the old Bush Hotel. The new block of buildings is built of tooled red stone. It is four stories high, excluding basement and attic floors, and occupies a commanding position to the south-west of the city. It has a frontage of 36 feet to English Street, of 65 feet to the Victoria Viaduct, and of 36 feet to Blackfriars Street. The style of architecture is that of the Stuart period, and the whole is surmounted by a Mansard roof. The large shop fronting the Viaduct and English Street has been fitted up for the convenience of the firm's business, no expense having been spared to procure the maximum of usefulness combined with the ornamental. The interior is handsome, a great part of the walls and the ceiling being of Pitch Pine. Everything in the shop is of the best character, the proprietors and the architect having visited the principal business establishments in the trade with this in view. The counter is of Oak, and around the inside wall is a range of seed-drawers—numbering nearly six hundred. A gallery for the display of horticultural implements, seeds, and plants ranges along the back of the shop, and forms a novel feature of the arrangement. On the right of the shop is a large office, chastely fitted up, with stained glass windows looking towards the Viaduct. The scenes on the glass represent seed time and harvest. Above there is a private

office and a seed showroom. The system of ventilation is also of the most approved kind.

—— British Bee-keepers' Association.—The Association will hold their fourth great exhibition of bees and their produce, hives, and bee furniture, and honey fair, at the Royal Horticultural Society's Gardens, South Kensington, in connection with the Society's Flower Show, on August 6th, 7th, and 8th next.

The Royal Horticultural Society's Meetings for 1879.—The Council have fixed the meetings of the Society for 1879 as follow:—January 14, February 11, March 11 and 25, April 8 and 22, May 13 and 27, June 10 and 24, July 8 and 22, August 12 and 26, September 16, October 14, November 18, December 16. The Great Summer Show will be held on May 27, 28, 29, and 30. The Rose Show and the Show of the Pelargonium Society on June 24.

—— Food Product from Pandanus.—Under the name of "Kapupu," a staple article of food is prepared in the islands of the Gilbert group, Pacific, from the soft central portion of the fruit heads of species of Pandanus. The following is given as the mode of preparation adopted:—The inner soft part of the fruit-head is taken and baked in an oven of hot stones, it is then beaten out, and formed into cakes, and again hardened over a fire, after which it is broken up into small pieces and pounded with a stone in a large clam shell; a mat is next rolled round a large piece of rounded wood, which is afterwards withdrawn, and the cylinder thus formed is tightly packed with the powder and securely fastened; in this way it is said it will keep good for years. A specimen of this powder received at the Kew Museum is of a yellowish colour, having somewhat the appearance of coarse sawdust, with a sweet but distinctly woody taste.

—— Oncidium curtum. This rare, handsome, and distinct Brazilian Orchid is flowering at the present time in Mr. Bull's nursery at Chelsea. The spike thrown up is not a very strong one, having only nine flowers, but they are very pretty, yellow, barred and blotched with cinnamon. The new Pescatorea Dayana is also in flower in the same collection, and Masdevallias elephanticeps and Trochilus will shortly be in bloom, as well as a rare species named Masdevallia bella, which belongs to the Chimæra section, but has no hairs.

—— Fibre of the Hop Plant. The utilisation of the fibre from the stems of the Hop is, like many other subjects of a similar character, one that crops up periodically. The latest information regarding the application of this plant for textile purposes comes to us from Stuttgart, where a process has been patented by which we learn that the fibre is made so soft and pliable that it can compete with the best prepared Flax, which it resembles very closely in appearance, while it is superior to all other fibres in elasticity, softness, and durability.

—— Plant Nomenclature.—At the Brentford Petty Sessions last week a man was charged with stealing a couple of plants at the Ealing Flower Show. A local paper, in recording the case, informs its readers that the stolen plants were "bloximinues," a name that might well have puzzled even the most learned gardeners to distinguish, much more the general public. The plants were Gloxinias.

—— Clubbing in Cabbages.—The last number of *Pringsheim's Journal* is entirely devoted to Cryptogams; but there is one article of great interest in a Horticultural point of view, as it completely illustrates the true nature of that formidable disease, clubbing, in Cabbages and their allies. The paper was originally published in Russian, a language unfortunately very rarely acquired in this country; but even under such unfavourable circumstances, the illustrations are so good and so numerous, that it is quite easy to understand the drift of Herr Woronin's observations. They give a series of drawings from the first affected or unaffected rootlets. At a very early stage of growth some of the component cells are very much enlarged, and filled with a granular protoplasm; this shortly becomes differentiated, and at last gives birth to multitudes of globose spores. The most interesting matter now occurs—the spores germinate, but, instead of producing threads, as the generality of fungi, they give rise to Amœba-like bodies, closely resembling those of the little dusty fungi known under the name of Myxogastres, of which a good example is the yellow dusty plant so common in hothouses where tan is used. There does not indeed appear to be any affinity, but the analogy is very curious. If these germinating spores are now sown, the young seedlings are at once affected; sometimes every rootlet is



Fig. 16.—View of the Lake and Rockwork at Elvaston Castle, looking North-East. (See p. 116.)

altered in shape, at other times the change is partial, and in a short time the disease acquires the usual appearance of clubbing. Many attempts have been made to remedy the disease, but altogether unsuccessfully. The practical results which HERR WORONIN deduces from his observations are as follows:—The absolute extirpation appears to our author impossible. Any remedy which might be thought useful is quite as likely to kill the plant as the parasite. (1.) The principal means of at least alleviating the disease is to burn everything which is likely to propagate it, and as it has been proved that it can be propagated by the spores, our duty in this matter is plain. Old plants affected are allowed to lie about in the spring, but they should be carefully cleared from the ground and burnt. (2.) A careful selection of plants from the seed-bed should be made, and none used which are not perfectly clear. It has been usual under such circumstances merely to pinch off the affected rootlets, but this is not sufficient, as the disease may exist in other rootlets apparently free. (3.) The third remedy consists in a careful rotation of crops. It is suggested that the ground should not be used again till after the lapse of two years. As the disease consists in an alteration of the plasmodic contents of the cells, our author has given to it the name of Plasmodiophora Brassicæ, Wor. *M. J. B.*

—— GODETIA LADY ALBEMARLE.—This is just now so grand that it might well be described as the most gorgeous garden annual introduced for many years. Although with the most careful selection it has not yet acquired the perfectly even compact habit so desirable where a regular line or bed of it is needed, yet the hue of colour in the flowers is the same, those in the compact plants being smaller and more densely borne. It seems to thrive well under the recent heat and drought, and evidently develops its fine qualities best when the plants are thinly sown.

—— FOREST FLORA OF BRITISH BURMAH.—One of the last works of the late Mr. S. KURZ was the preparation of this Flora. It is intended as a guide to the forester in that comparatively little-known country, and comprises the description of about 2000 woody plants, with other particulars of service not only to the botanist but to the forester. Doubtless many valuable trees have yet to be discovered, and even more probably much has still to be made out concerning the useful products of those that are known. The first step towards the knowledge of these points is to be obtained through the systematic investigation of the flora and the careful discrimination of one species from another. Mr. KURZ had unusual opportunities, and possessed unusual knowledge, so that his book is likely to be very useful for the purposes for which it was intended; and when the difficult circumstances under which the book was compiled are remembered, the credit due to the author will be generally acknowledged. Prefixed to the systematic account of the trees are some remarks on the climate, which will be read with interest by Orchid growers and others. Thus, the rainfall of various provinces varies from an average of 47 inches per annum in Prome to 223 in Sandoway; while in some parts of Ava and about Paghan little or no rain falls. The cold dry season (November to February) has a temperature of 57°—60° in the morning, running up to 85°—88° in the afternoon. The hot season begins in February and lasts till nearly June, with a temperature of 70°—74° in the morning and 95°—100° in the afternoon. The maxima range from 104°—106°, while the minima go down as low as 69°.

—— ANGULOA CLOWESII.—Professor REICHENBACH writes:—I was not a little surprised lately, on being told by Mr. ALFRED BORWICK, that he had a plant of this species bearing three two-flowered peduncles! and I had not seen a single one in my life. I have now a specimen before me, thanks to Mr. BORWICK'S kindness. and consider it a good testimonial of the skill of his enterprising grower, Mr. WALTON. I regard this peduncle in my herbarium as just such a curiosity, as a two flowered peduncle of Lycaste Skinneri, which is a decidedly rare thing.

—— DIONÆA MUSCIPULA.—Mr. BULL, who imports nothing by halves, has, at the present time, the finest and most extensive lot of young plants, of Venus's Flytrap, that has yet come under our notice. They occupy nearly the whole of one side of a span-roofed pit, and present a perfectly unique appearance, the little plants being in fine health, and wonderfully sensitive to the touch. Evidently now is the time to experiment on its carnivorous propensities.

—— EUCALYPTUS CITRIODORA.—Lovers of interesting rather than "strikingly showy" greenhouse plants should make the acquaintance of the new lemon-scented Gum tree, Eucalyptus citriodora. It is a slender-habited plant, with oblong leaves, covered with glandular hairs, which when gently rubbed emit a powerful odour, resembling that of the lemon-scented Aloysia. A native of Australia.

—— THORNS PROTECTING YOUNG FOREST TREES.—Writing to *Land and Water*, Mr. HIGFORD BURR, Aldermaston Court, Reading, says:—

"I dare say that most of your readers who take any interest in planting have often remarked how an Oak or other tree of fortuitous planting has attained a fair growth, owing to the protection of a Thorn bush, which has saved it from cattle. Taking a hint from Nature, I desired my woodman last autumn to plant in my park, by way of experiment, a dozen trees, about 6 feet high, in such a manner that they would be protected each by a Thorn. He performed his task with great judgment, and I am happy to say that hitherto the experiment appears to be so successful that I shall repeat it on a larger scale this next November. Planters, of course, will see that my object is to plant single or grouped trees, without having to incur the expense and trouble of fencing them; and having been thus far successful, I am desirous of imparting this 'dodge' to others, who, having rough grounds, may thus make use of their Thorns as nurses for more valuable trees."

—— PRICES OF FOREST PRODUCE.—A valuable list, showing the comparative prices realised for forest produce of various qualities, is given in a late number of the *Journal of Forestry*. The returns are given from each division of the country, and comprise the average prices for Ash, Alder, Beech, Birch, Horse Chestnut, Spanish Chestnut, Elm, Hornbeam, Lime, Norway Maple, Oak, Scotch Pine, Spruce, Silver Fir, Larch, Poplar, Sycamore, Walnut, Willow, Oak-bark, cordwood, faggots, &c. The table is rendered more complete by indications of the distance of the nearest market or railway. The general result seems to be that prices for all descriptions of timber have been low, except in the case of good Oak. Oak-bark too has experienced a reduction of 10 to 20 per cent, large stocks of last year's growth still remaining on hand.

—— THE POTATO CROP.—In the present issue we give an instalment of the reports furnished us by our correspondents in various parts of the country, relating to the crop of Potatos. Partial as is the summary we now give, we have little doubt, when the fuller details reach us, that the general results up to this time will not be materially different from those we now publish. Speaking generally, the disease appeared early, but was checked in its progress by the dry weather. This, however, had its disadvantages of arresting the growth of the tuber, so that complaints of small size are frequent. The occurrence of thunderstorms and of wet weather, however, is an evil omen, and we fear that we may receive worse accounts in future than those we now publish as to the state of the crop.

—— CHINESE WINES AND BRANDIES. — The *Bulletin* of the Paris Acclimatisation Society contains an article on the wines and brandies manufactured in China, with a description of the mode of preparing the ferment called *kiu-tsee*. In different parts of the country it is variously prepared; but that made at Canton is considered the best, and is in request all over the empire. It is prepared as follows:—They take 75 lb. of good Rice (that of the summer crop by preference), 27 lb. of Dolichos soja, 4 oz. of old *kiu-tsee*, and 14 lb. of the powdered leaves of Glycosmis citrifolia. *Kiu-tsee* is not considered good without the leaves of this plant. They are partially dried in the open air, and finished over a stove, care being taken to cover them up to prevent the evaporation of their essential oil. The Dolichos beans are boiled in fresh water for twenty-four hours in a cast-iron cauldron. The Rice is also boiled in a large cauldron. When the water boils the Rice is thrown in and taken out again in about ten or twelve minutes. The ingredients are worked up together into a paste, and then stowed away for a time to ferment. Afterwards they are dried, and this operation properly performed they will retain their virtue for two or three years. With this ferment the Marquis of VILLENEUVE thinks he could with his acid replace the wines of France should the Phylloxera destroy all the Vines. But as DABRY DE THIERSANT, the writer of the article from which we are quoting, says, it is to be hoped that things will not come to this pass, for the best Chinese wines and spirits are not equal to the worst French. Great improvement will be necessary before they can ever be tolerable. Their brandies at Canton are made from Rice, but in the North they employ instead the grain of Sorghum. A kind of wine is manufactured from pulled Millet, and several different varieties from different kinds of Rice. The savages of Formosa prepare a beverage by chewing the Sorghum, afterwards drying the crushed grain in the sun, and then on putting it into vessels filled with water, fermentation taking place naturally.

—— THE NEW ZEALAND FLAX.—In another column our esteemed correspondent, Mr. C. B. SAUNDERS, of Jersey, writing on the comparative advantages, horticulturally, of his favoured isle and that of Scilly, remarks, with reference to the New Zealand Flax, Phormium tenax, that such a valuable plant should be grown on every estate, as its leaves produce, by simply stripping them, a useful material for making strong ties, which is available at any season of the year. Lest it should be inferred that this can only be done in specially favoured localities, we may mention that at Stoke Rochford, Lincolnshire, the plant grows freely, and is largely made use of for tying trees.

—— NOTEWORTHY HERBACEOUS PLANTS.—Strolling through the interesting garden of Mr. G. F. WILSON, at Weybridge, lately, we noted the following, among a vast number of other plants, as worthy of special notice:—

GOODYERA PUBESCENS.—We are so accustomed to class Goodyera and Anœctochilus together, and to see them in steamy stoves, that it was with a feeling of surprise that we met with the above-named species in full flower. The foliage is rich velvety green picked out with white veins.

SEDUM PULCHELLUM. — Some time since we published a figure of this (p. 552, vol ii.) from the garden of the Rev. H. N. ELLACOMBE, but we call attention to it again for the purpose of corroborating our former statement. On the rockery, amid a crowd of notable things, the beauty of this little known Sedum attracted most attention at a recent visit, and that is saying a good deal. In some gardens S. lydium or S. sexangulare may be met with under this name, but they are widely different from the true pulchellum.

THE EDELWEISS. — Some one — whom we forget, said, somewhere—where we forget also—that this did not bloom in this country. The statement was contradicted at the time, and any visitor to Mr. WILSON'S garden may see it now in full flower at Weybridge.

CONVOLVULUS ALTHÆOIDES.—This with its silvery leaves and mauve flowers, so familiar to the traveller in the South of France, is just now in flower at Weybridge, where it seems to have established itself as freely as though it were wild. Its near ally, C. mauritanicus is in flower also in the same garden.

GERANIUM CINEREUM.—This is one of the prettiest of its race, its pale pink flowers, picked out with darker veins, being very elegant.

VERONICA TRAVERSII.—A very elegant plant, with loose spikes of white and blue flowers, just the thing for bouquets.

SAXIFRAGA PELTATA.—The largest plant of this we have yet seen, but for its peltate leaves we might take it at a distance for a small Rhubarb or Gunnera, so unlike is it to a Saxifrage.

TROPÆOLUM SPECIOSUM.—Those who know Scotland know how beautifully this grows over the highland cottages, but southern growers are far from successful with it. Mr. WILSON grows it against a cool wall in light soil, where it is now flowering well.

Restrictions of space forbids us to do more than mention the names of a few other choice herbaceous plants now in flower in the same garden, but we trust our readers will kindly furnish us with lists of the best herbaceous plants in their several collections. Hypericum Coris, glaucum, Stenactis speciosa, Oxalis lasiandra, Malva campanulata, M. capensis, Berkheya purpurea (see *Gardeners' Chronicle*, 1872, p. 1261); Pentstemon Torreyi, a fine scarlet species; Gentiana cruciata, &c.

THE POTATO CROPS OF 1878.

SCOTLAND.

AYR.—Ayrshire is a great county for Potato culture, both as regards producing early tubers for Glasgow and early markets, and later crops for the general markets and seed trade. On the whole, they are looking well and promising to be a full crop—no signs of any disease, and not likely to be any, if this fine, dry, warm weather continues. The favourite varieties here for field culture are Red Boy, Dalmahoy, Walker's Early, Paterson's Victoria, and this season there has been a run upon one called Champion, a coarse growing variety, with no good qualities to recommend it. I expect soon to see this discarded. *John Gray, Eglinton Castle.*

BANFF.—The Potato crop is very promising, both in gardens and fields, and no sign of disease is yet manifest, the weather continuing dry and hot. *John Webster, Gordon Castle.*

CROMARTY.—The crops are free from disease, look fine, and are very early, except on dry soils, where they are suffering much from the dry weather. *James Laing, New Tarbat.*

EAST LOTHIAN.—These are looking extra well throughout this district. On shallow soils the intense heat is acting injuriously on the ultimate yield of the crop. In the garden here about sixty varieties are being grown on trial this year, and under differing cultural treatment. Six of the earlier kinds have been lifted, the produce being above the average in size and appearance, eating qualities varying according to sorts, but generally good. It is rather early to speak of the crop as a whole yet. *R. P. Brotherston, Tyninghame.*

RENFREW.—Everywhere round this neighbourhood the Potato crops look most promising, the fields at present being quite a picture of bloom. The sort chiefly grown is the Victoria, but the Champion seems likely to succeed with the farmers this year. In gardens the crop is not quite so abundant, yet good both in size and quality, and no signs of blight. *J. Methven, Blythswood.*

ROSS.—Potatos look well, and there is no trace of the disease; but the continued drought is slightly affecting them on light soils. *Robert Massie, The Gardens, Ardross Castle.*

ROXBURGH.—The crops are excellent all about here, and promise, thanks to the extra sunshine, to be over the average. I never saw such a fine braird, scarce any single blank in the rows. The kinds we have this year are Old Ashleaf, Myatt's Kidney, Gloucestershire Kidney, Fortyfold, Rintoul's Don, Regents, and Champion Rocks. The latter has a great character over Scotland this year, and promises well to turn out a successful late Potato. We may thank our stars that, if we have not the apple of the air, we have the apple of the earth, in store for our winter consumption. I am in hopes of the disease keeping quite away from us this year. *H. Knight, Floors.*

STIRLING.—Potatos look promising both as to quality and quantity. *M. Fitzgerald, Dunmore Gardens.*

WIGTOWN.—The Potato crops in the fields look remarkably well, but the breadth planted in this district is limited. In gardens the disease is common—although of late making little progress, owing to the hot dry weather we have had for the last few weeks. The disease appeared here on June 30, twelve days earlier than I have observed it for twenty years. There was a thunderstorm, and heavy fall of rain three days previously. *Archibald Fowler, Castle Kennedy.*

ENGLAND—NORTHERN COUNTIES.

NORTHUMBERLAND.—I never saw the Potato crops looking better than they are with us this season. What we have taken up for use are good both in quantity and quality, and there is no appearance of disease as yet. *Alex Ingram, Alnwick Castle Gardens.*

WESTMORELAND.—Most of the crops are looking fine, and there is little or no appearance of the disease. It is generally believed that the crop will be under-sized as to tubers should the severe dry weather continue. I may add that the only varieties that have shown symptoms of the disease are Early Rose and Snowflake. *R. Craig, Levens Hall, Milnthorpe.*

DURHAM.—I never saw Potatos look better, with fine strong haulm and of a dark colour. I hear nothing about the disease in this locality. We had fine hay crops, and well gathered. Corn of all sorts looks very promising and strong in straw; some Wheat crops are 5 to 6 feet high. *R. Draper, The Gardens, Seaham Hall.*

YORK.—Potatos good and without disease, but much wanting rain, especially the late kinds. *William Culverwell, Thorpe Perrow, Bedale.*

MIDLAND COUNTIES.

CHESHIRE.—Early Potatos are excellent. We found a few diseased tubers amongst the very earliest in the wet weather, but none latterly, and the crop is very heavy and clean. Late Potatos are strong and healthy looking, and the tubers much larger at this date than we have ever known them. *Thomas Selwood, Eaton Hall, Chester.*

—— All the early Potatos came up strong and healthy, and those which were first matured produced large crops; but the continued dry weather during the past month has caused several of the second earlies, particularly in light ground, to ripen prematurely, and the produce in consequence is not so abundant, nor the tubers so large as the earlier ones. The quality has been very good, and up to the present I have not seen a single diseased tuber. Late or winter Potatos look very healthy, bearing blossoms in abundance, with strong, well-matured stems and leaves. *Wm. Whittaker, Crewe Hall, Crewe.*

DERBY.—The Potato crop in this quarter has not been better for many years, the yield being over an average crop. No disease as yet. Our main crop will soon be ready for storing. We find the old Ashleaf to be the best for early and general cultivation; it takes up little ground so far as shaws are concerned, with a yield of from twenty to twenty-four to each shaw of good Potatos. We believe in deep cultivation. All our ground is turned over three spades deep annually, and the returns are heavy crops. *James W. Bayne, Kingston Hall.*

NOTTINGHAM.—In this district the Potato crops are excellent, and no disease reported lately amongst the early or second early varieties. The markets at present are well supplied, and the quality of the second early kinds is excellent. I have lately lifted all my early and second early varieties for seed, and have not found a diseased tuber amongst them. Hammersmith Kidneys, Alpha, Dixon Kidney, and Fenn's Early Market were quite ripe, owing to the tropical heat prevailing in July. Before a change takes place in the weather to rain or thunder showers, all the Potatos nearly ripe should be lifted, for the disease is almost sure to run riot as soon as it is developed, from the heated nature of the soil, and only wanting moisture for the fungus to appear. *William Tillery, Welbeck Abbey, Worksop.*

—— Excellent crops of all sorts, and especially of Empress Eugènie, Hammersmith Kidney, and Veitch's Royal Ashleaf. A few diseased tubers were seen to-day, July 24. I hear in the neighbourhood it has shown itself some days past. *Henry Gadd, The Gardens, Wollaton Hall.*

—— The Potatos are looking well at present. I have not found any diseased ones in our own garden, nor have I heard of any in the district. Late Potatos would be benefited by rain if it came soon. Early kinds, such as Hammersmith Kidney, Mona's Pride, Veitch's, and Rivers' Ashleaf are all good and clean, tubers dry, and good flavour when cooked. *A. Henderson, Thoresby.*

LEICESTER.—Early sorts are very good, especially Myatt's Prolific. Mona's Pride is yielding a good crop, but a few of them are diseased. Extra early Vermont very good. *John Kitley, Wanlip Hall.*

BUCKS.—The Potato crops have been most promising, but the last few days of hot sunshine has caused the haulm to go off very much. The tubers have not yet suffered much from the disease, but I fear they will soon, as the tops in some sorts are dead, others on the same land look beautifully healthy. I have not yet had a single tuber diseased, but I think rain would cause them to suffer more or less at once. *Philip Frost, Dropmore.*

BEDS.—The disease showed itself in the haulm six weeks since, but dry, hot weather setting in effectually checked it. Early varieties are being lifted, small in tuber but almost free from disease. Late kinds, where not giving up from drought, look well at present, but sufficient signs of the old complaint show it is only subdued by excessive heat; a showery time commencing now would cause it to break out again in all its virulence. *A. M'Kay, Woburn Abbey.*

HERTS.—All kinds are diseased, and the haulm destroyed. Early kinds, such as Myatt's, Veitch's, Ashleaf, &c., are uninjured in the tubers at present. The later sorts will, I am afraid, be injured. Heavy crops. *J. C. Mundell, The Gardens, Moor Park, Rickmansworth.*

NORTHAMPTON.—We have no disease except in one border of Alphas. Myatt's Principal, an early variety, is a true gardener's friend, a good cropper, with no disease, and the quality unexceptionable. I have just seen (July 18) 30 lbs. lifted for seed of the best description. Late varieties look well—the dry weather no doubt is saving the crop, but vegetation is almost at a stand-still, the weather being so hot. *R. Gilbert, Burghley.*

EASTERN COUNTIES.

LINCOLN.—Potatos are good, but like all other vegetables are suffering much for the want of rain. As yet we have found no disease. We have had no rain for the last month. Several of the farmers round here will commence harvest next week. Barley crops have grown up much before the time in consequence of the hot dry weather. *Isaac Dell, Stoke Rochford.*

—— Garden Potatos are a fair crop, but rather smaller than usual. We have seen some diseased but very few. Field Potatos will turn out very small, owing to the dry scorching weather we are having; no disease as yet in field culture. I have heard of several cases of disease amongst the early Potatos in this neighbourhood, but not of a serious nature as yet. *D. Lumsden, Bloxholm Hall, Sleaford, July 22.*

NORFOLK.—Early Potatos are, generally speaking, very small. The great quantity of rain and absence of strong sunshine in the early part of the season caused them to make an extra amount of luxuriant haulm. In this condition they were attacked by the Peronospora before much tuber growth had taken place. However the tubers are plentiful, and of first-rate quality. Second early varieties promise better, and are looking well, being very little touched with the disease. Very late planted sorts are promising well, only wanting rain. Scarcely any appearance of disease amongst them at present. *W. Bishop, Bylaugh Park, East Dereham.*

SUFFOLK.—This has suffered both from the long spell of wet, dull weather, and the long drought and intense heat succeeding it. The result is a small crop of small tubers, but the early ones sound and good. We are getting them up as fast as possible, and find no disease. But the morning of the 22nd has brought rain, with thunder, and the strong probability is that the disease will come swiftly on the heels of the wet. Even before the rain the latter sorts had commenced to supertuberate, the first tubers being little larger than marbles, and the stems dying down with sheer heat and drought, so that the prospects of a sound average field are not likely to be realised. *D. T. Fish.*

SOUTHERN COUNTIES.

BERKS.—The early crops were partially diseased but not to any great extent. The late crops are looking well here and promise to give an abundant yield. There are, however, places round this neighbourhood where the disease is making its appearance. *T. Jones, The Royal Gardens, Windsor.*

MIDDLESEX.—Potatos so far are very good, excellent both in quantity and quality, and very few diseased ones have been found as yet. *T. P., Stanmore.*

SURREY.—The Potato crop here is very much injured by the disease. The tops of the early kinds are all dead, but the tubers are sound, though small. Late kinds are looking better, though in some cases near the water they are showing signs of the murrain in patches, which soon spread over the whole plot. Owing no doubt to the heavy rain-fall through April and the early part of May, the disease made its appearance six weeks earlier than usual. *W. Kemp, Albury Park, Guildford.*

—— Very good so far; but I believe from the appearance of the shaw that the disease would be very severe, with favourable weather for development. *Wm. Denning, the Gardens, Combe Lane, Kingston-on-Thames.*

—— Our Potatos look remarkably well, and as yet there has not been any disease, though in some places in the neighbourhood it has been seen. So far as we have lifted the early Kidneys and Rounds, there is a very good crop. *J. Burnett, The Deepdene, Dorking.*

—— Potatos look very well in this district as yet, but I hear at a distance in wet soils the disease is

making its mark, though scarcely a diseased tuber has been found around here. The Kidneys are fine and good. The varieties I find to do best here are Ashleaf, Veitch's Improved Ashleaf, Rivers' Royal, Early Rose, Bountiful, Yorkshire Hero, Coldstream, Dalmahoy, Early Shaw, Fen's Early Market Peerless, and Rector of Woodstock. *Alfred Evans, Lythe Hill, Haslemere.*

KENT. The Potato crop not having been cut by late frosts, looked very promising up to the end of June, when the disease made its appearance; but the weather being dry it has not spread so rapidly as usual. With a continuance of fine weather a fair crop may be expected. *J. Hossack, Bifrons.*

—— I am sorry to have to record that throughout this district, but more particularly on land at all retentive of moisture, the disease is very virulent—the proportion varies with the sorts. I have lifted all our early planted varieties with the worst result, on the whole, that I have ever known; some, such as Veitch's, Myatt's, and Rivers' Ashleaf, have turned out well, very few diseased. Next to these are Snowflake, Drummond's Early Prolific, and that very early old sort, Sodan's Early Oxford; Bryanstone Kidney, tolerable; Coldstream, one-tenth good; Rector of Woodstock, one-fourth good. Several other sorts not worth mentioning. A bad look-out on the whole. *John Cox, Redleaf, Penshurst.*

SUSSEX.—There are a few diseased tubers amongst the early kinds, but I have no reason to think that the disease has as yet done any harm worth speaking of. *Joseph Rust, Eridge Castle.*

—— The Potato crops are very badly diseased. I have not known them so bad for many years. *F. Rutland, Goodwood Park.*

—— The disease showed very early on the tops, but has not affected the tubers; nearly all early kinds are good, but not heavy crops. The late sorts and field Potatos are looking well. Since the blight showed we have had but little rain, the cause, I consider, of the Potatos being so good. *G. Breese, The Gardens, Petworth Park.*

—— In this district the disease has already committed dreadful havoc among the early crops. Some of the American varieties, and especially Snowflake, are among the worst affected. There is scarcely one sound tuber to a root. *J. Vickery, Wood End, Chichester.*

WILTS.—Potatos planted in the open, in a highly-manured piece of ground, and a most favourable piece as far as quality and situation of soil are concerned, on March 11, which grew on without the slightest check whatever in the most satisfactory way imaginable, the produce being everything that could be desired. Large tubers, fine in quality, quantity, and flavour—n short it was the *beau ideal* of a Potato crop; but, alas! about three weeks or a month ago the disease set in with a suddenness both amazing and saddening to behold, there being fully more than one-half of the crop diseased; the sorts being those good sorts Myatt's Prolific and Lee's Hammersmith Kidneys. Thus I am more convinced than ever that highly-manured ground is conducive to the disease in Potatos, and that the poorer the soil in which the Potatos are planted the less liable they are to disease. The Potatos in this district are all more or less badly diseased, caused, no doubt, in a great measure, by the great quantity of rain that fell during the latter part of May and early part of June; but on every side it is admitted the crop is everything that could be desired, were it not for the disease setting in. *H. W. Ward, Longford Castle.*

DORSET.—The Potato crop is very good in this locality, the early varieties producing very heavy crops, and good in quality. The disease has made its appearance, but as yet is not very prevalent. The late crops of Potatos promise to be good. *Henry Munro, Clevelands, Lyme Regis.*

WESTERN COUNTIES.

HEREFORD.—Myatt's Prolific Ashleaf is proving a good useful Potato, a few diseased, but nothing to speak of. Coldstream, a good early round, possesses fine qualities for the table; and though not a heavy cropper, is very free from disease. The haulm of Yorkshire Hero is ripening off well, and Sutton's Magnum Bonum is in a good growing state. *William Ward, The Gardens, Stoke Edith Park.*

WORCESTER.—Early Potatos, which we are now lifting, are yielding famous crops, and the tubers are sound. Rivers' Royal Ashleaf and Veitch's with Myatt's Prolific are amongst the most reliable sorts for general use. There are many spurious and useless sorts, with nothing but a name to recommend them, brought under our notice, which would be better discarded for well tried sorts, which are sure to please. Late crops promise well with but little signs of disease, and should the dry weather continue, the results will be very favourable, as the crops are most promising in this locality. *G. Westland, Witley Court.*

—— With a month of fine dry weather and occasionally intense heat, disease has so far been checked, and most early crops being ripe ought to be taken up in good condition. So far as I have been enabled to observe when crops have been injured it has been by rot, consequent upon over-close planting and the use of stimulants in a crude state. Late crops at present look well, but want rain. *William Cox, Madresfield Court.*

GLOUCESTER.—In this district the Potato murrain commenced its ravages very early, and promises to be very destructive to the early crops. *Thomas Shingles, The Gardens, Tortworth.*

WALES.

PEMBROKE.—The crops promise to be good this year, the disease not having made its appearance nearly so early as last year; and if the dry weather continues a little longer they will turn up well. *Henry Howard, Castle Malgwyn Gardens.*

IRELAND.

CLARE.—People about here were justly alarmed at the disease showing itself so early this season. It appeared about June 26. In no previous year was it seen earlier than July 6, consequently the tubers are generally small; however, if the weather keeps fine it is expected the crop will be better in quality than last year. *W. Wilson, The Gardens, Dromoland Castle.*

DONEGAL.—Owing to the fine weather the Potato crop promises to be first-rate in this part. There are some signs of the disease setting in, but it is not making much progress. *A. Hanlon, Drumboe Castle.*

DOWN.—The absence of rain for these last four weeks has kept the Potato disease in check. But such varieties as Early Rose and Snowflake by the middle of June were getting very much infected, but we have found no bad Potatos yet. Late crops are suffering from drought, and I fear will be a light crop if no rain comes soon. *James Taylor, Mountstewart.*

KILDARE.—The Potato crops are looking remarkably well in this neighbourhood, those in use here, Myatt's Victoria, being a very good crop, and of excellent quality. Although I have heard of diseased tubers, there seems to be very little appearance of it in the shaws. *W. A. Emery, Kilkea Castle.*

MEATH.—The Potato crops promised to be very good this year. The disease made its appearance after the severe thunderstorms of last month; but it does not appear to be spreading much. I have not found one single diseased tuber as yet. The Ashleaf is very good; Climax and Early Rose are rather wet; so also are the Lapstone. I planted some Ashleaf and Lapstone in June, and there is no sign of disease on them at present, and they are looking first-class. Of the Scotch Dons grown by the farmers I hear very bad accounts. *John Clews, Headfort Gardens, Kells.*

WICKLOW.—The late brilliant weather has done wonders for the Potato crop in checking the disease, which had set in, and shown signs of being very bad. Now we are looking for a fair yield of sound and well-ripened tubers. *Charles Penford, Powerscourt.*

CHANNEL ISLANDS.

GUERNSEY.—Early sorts were not good at all, and the very heavy thunderstorm and rain of the 21st here will, no doubt, much injure the later ones already attacked. *Thos. C. Bréhaut, Richmond House.*

JERSEY.—Large quantities of Potatos were planted this season, and the crop has been below the average owing to the disease affecting them when in full growth. Some farmers have succeeded in recovering their outlay, but numbers will go "to the wall," owing to their losses. Speculation has been rife. I have just heard of a dealer in Potatos from Goole having committed suicide by drowning himself. It is "temporary insanity," attributable to his losses in the Potato trade. *Charles B. Saunders, St. Saviour's.*

Home Correspondence.

The Mistleto-Oak at Eastnor.—Although this parasite is abundantly produced by many deciduous trees in this part of the country, the Oak, of which the Rev. G. Henslow's drawing is now before me, is the only tree of the kind on this estate supporting Mistleto. The tree in question may be 100 years old, probably more, and is known to the oldest inhabitant as the Mistleto-Oak; but when or how the Mistleto became established is matter for conjecture. Most likely the seeds were conveyed to the tree from the surrounding orchards by thrushes, which are abundant. There are five large masses, some of them several feet through, which produce seeds freely. Homœopathists sometimes apply for them for medicinal purposes, and persons calling themselves naturalists mutilate the tree for the purpose of enriching their botanical collections. In addition to the Oak, we have Mistleto growing on the Willow, Maple, Thorn, Acacia, Ash, Pear, Alder, Lime, and Apple. From the latter many tons are cut annually and sent away to London and the large towns in the North. Collectors commence gathering early in November, continue quite up to Christmas, and receive £1 to £2 per ton from the dealers, delivered into truck or boat. *W. Coleman.* [The fullest account of the Mistleto on the Oak is that given by Dr. Bull in the Transactions of the Woolhope Club, and reprinted in the more accessible *Journal of Botany*, 1864, p. 371. In spite of the proximity to Mistleto-bearing orchards, there are but three instances known of its growth in Herefordshire on the Oak, that in Eastnor Park above figured, at Tedstone, Delamere, and in the forest of Deerfold. In other counties the Mistleto is known to grow on the Oak:—at Badam's Court, Sedbury Park, Chepstow, Burningfold Farm, Dunsfold, Surrey, Hackwood Park, Basingstoke, near Plymouth, and at Frampton-on-Severn. EDS.]

The Potatos: How to Save Them.—Lift the whole of the earlier crops at once. The skins of these are firmly set by semi-maturity and the intense heat and drought, and not a day should be lost in harvesting them. The thunder showers that have fallen at last on the morning of the 22d will have one of the following effects—either a fresh flow of sap will start the tubers into new growth, in such case its quality will be seriously lowered if not ruined; or super-tuberation will follow the rain; or the disease will attack the crop. The first is by far the least evil of the three, though it is an evil without any corresponding advantage as a set-off, for the addition to the size of the Potato is far too dearly purchased at the expense of its quality. Super-tuberation is utter ruin. The first tubers are rendered uneatable, and the second have no time to reach edible size, assuming, which is most improbable, that the disease spares either crop. The risk of the disease itself is also very great, rains, and especially thunderstorms, after long droughts, bring on the disease with about as much certainty as twice two are four. It is almost equally certain that early crops lifted before the advent of the disease keep soundly and well. The variety of opinion on the latter point has arisen from the fact, that in too many instances the disease has appeared before the crops were lifted. When and where this is the case there is no security that lifting will arrest it though it often seems to do so, and oftener the lifting of a tainted crop does little or nothing to arrest the malady. But early crops lifted in a sound state do not catch the disease in store. Hence the superlative importance of early harvesting and the immediate lifting of all Potatos that have the skin set. Late crops not worth lifting may as well be left in the ground, though, in many cases, it would be wiser to lift these also, and destroy all the shaws, so as to limit the area and virulence of this disease, and perhaps checking also, to some extent, its reproduction. *D. T. Fish.*

Berberis Darwinii.—In answer to Mr. P. Graham's inquiry respecting the clipping of Berberis Darwinii hedges (see p. 88), I may at once say that my practice is in unison with that of "J. S." (see p. 52, where there are some excellent practical remarks in reference to clipping Berberis Darwinii hedges). "J. S." there distinctly states that when grown to form hedgerows in gardens as boundary fences or divisional lines, Berberis Darwinii should be clipped hard in directly it has done flowering, as it then makes just young growth enough to feather out and furnish a blaze of bloom in the following spring. If Mr. Graham will follow the above practice he will be rewarded with as fine a display of bloom as could be wished for. It is no assumed thing, but a matter of fact, that the Berberis Darwinii hedges are growing here in the most perfect health and splendour that the most fastidious could wish; and should Mr. Graham be travelling this way he can see them for himself. My employer is so much pleased with them

that he intends to have some of them removed to a prominent position in the garden. It need hardly to be said that the plants should be in good health to furnish a good supply of young growths after clipping, which could not be expected from weak plants. There may be exceptions in some soils, but as a rule here the plants grow in the ordinary soil in robust health. It may not be out of place to mention that the Berberis Darwinii may be grown to advantage on the borders of coverts, or even to form the hedges, where the birds would feed on the berries which are produced in great abundance, thereby rendering it a plant of value as well as of ornament. *C. Penford, Powerscourt Gardens.*

Mimulus guttatus. — There are some plants growing in the water in a running brook near this place which are at present in flower, are thriving luxuriantly, and very ornamental. Have any of your readers tried this, or any other species of Mimulus as an aquatic? *William Sang, Kennoway, Fife.*

The Catalpa Fruiting in England.—It is, I believe, uncommon for this tree to bear fruit in England. I enclose you two pods, which were apparently formed last year, and in which I fail to find any seeds. They were taken from a tree in the gardens of Wateringbury Place, near Maidstone. There were several more pods on the tree, which is

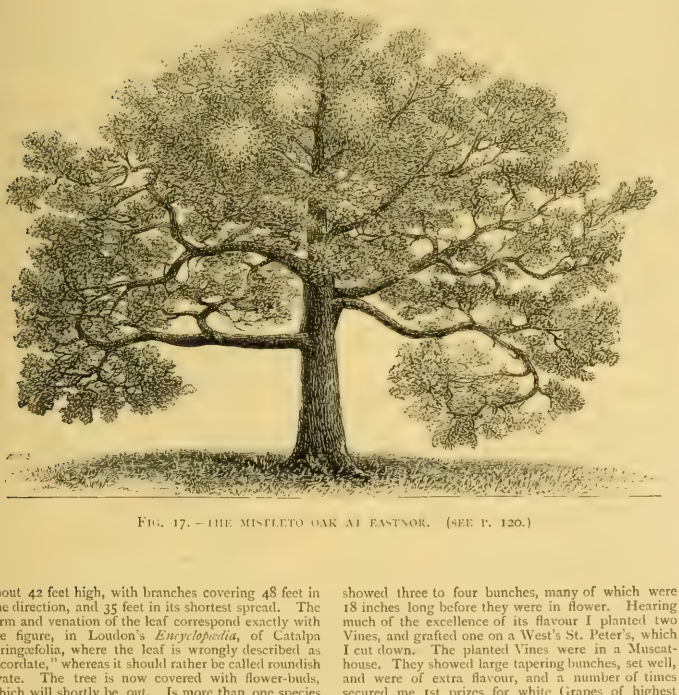


Fig. 17.—THE MISTLETO OAK AT EASTNOR. (SEE P. 120.)

about 42 feet high, with branches covering 48 feet in one direction, and 35 feet in its shortest spread. The form and venation of the leaf correspond exactly with the figure, in Loudon's *Encyclopædia*, of Catalpa syringæfolia, where the leaf is wrongly described as "cordate," whereas it should rather be called roundish ovate. The tree is now covered with flower-buds, which will shortly be out. Is more than one species in cultivation in England? *W. T. T.* [No, but there are varieties, especially the golden leaved form, which is very handsome. The pods are formed in hot summers. Eds.]

The Native Country of the Potato.—With reference to your notice (p. 739, June 8, 1878) of my paper on the native country of the Potato, read before the Scientific Committee of the Royal Horticultural Society, will you permit me to state, in justice to my friend Mr. E. André, that I found him in error only in supposing that he was the first to point out the existence of Solanum tuberosum in a wild state in Peru and Columbia. *W. B. Hemsley, Turnham Green.*

Eschscholtzia Mandarin.—This is a very gorgeous annual when the plants are strong, and the flowers freely produced, but it seems to possess a remarkable sportive faculty, as from the produce of two or three packets of seed growing here on at least one-third of the plants rose-coloured flowers were developed. Certainly a strangely contrasting hue to come out of a rich orange-flowered variety. The rose-coloured kind is very pretty, but I am in doubt as to its novelty, as I have heard of Eschseholtzia crocea rosea, and it is possible that this sport and that variety are identical. Assuming that it is really a sport, of course I think it is possible that its production with Mandarin may have been accidental and not natural. It presents a singular illustration of the sportiveness of garden plants when themselves the product of crosses or of selection. *A. D.*

Duchess of Buccleuch Grape is growing here in the late house with several other kinds, but I have not much to say in favour of it, and would advise no one to plant it. The Duchess is a very vigorous grower, and shows an abundance of bunches, but sets very confusedly, with a lot of rubbish to clear out, like Lady Downes. The berries are amber, with a slight glaucous tint when ripe, but small, and with a disproportionate amount of large seeds; flesh firm; flavour excellent, in the way of Chasselas Musque. *J. W Lawrence, Newstead Abbey, Notts.*

—— This Grape, because of the smallness of its berries, has not come into extensive use. Experiences of cultivators are asked regarding this very highly flavoured Grape; mine may be more limited than many, but not unsuccessful. When I first saw it an amateur had a small house full, it having been planted inadvertently for Black Hamburgh. Every shoot showed three to four bunches, many of which were 18 inches long before they were in flower. Hearing much of the excellence of its flavour I planted two Vines, and grafted one on a West's St. Peter's, which I cut down. The planted Vines were in a Muscat-house. They showed large tapering bunches, set well, and were of extra flavour, and a number of times secured me 1st prizes for white Grapes of highest flavour (I never saw it beaten) in this class. The grafted Vine did well, and bore fine crops of medium-sized bunches, with berries like moderate-sized Muscats. These, because of their size, were appreciated more than those on their own roots, the latter being much smaller and harder than those on the grafted Vines. Few cultivators who visited me would believe they were the Duchess. The late Mr. Thomas Osborn (who took a lively interest in many experiments which I performed by grafting Vines on other stock), was much struck with the change the stock of West St. Peter produced on these Vines' produce. My predecessor at that place had for a number of years made experiments in grafting delicate Vines on stronger ones (he was an advanced practitioner and a thoroughly scientific man). Among his experiments was the Golden Hamburgh grafted on the Marchioness of Hastings. The bunches and berries grew large in this case, but the fruit was very rough and tasteless. A Golden Hamburgh Vine grafted half-way up the rod of a Black Hamburgh bore splendid fruit of immense size and fine flavour, and I have kept them in sound condition till February. This Grape often helped me materially along with Muscat Hamburgh to to secure prizes in collections of sixteen kinds of fruits, in which for eight or nine years running I held good positions against heavy odds. Speaking of the Muscat Hamburgh I found it do capitally when grafted on Black Hamburgh both for early and late work, but after eight or nine years' hard cropping the Vines were less vigorous and the colour not so fine or the berries so large. With Mr. Thos. Osborn I made a yearly comparison of Grapes grafted on others; tasting them and otherwise examining the fruit was a matter of great interest to us both, and happened once each season for a period of ten years. *M. Temple, Impney.*

Mr. McKinlay's Potatos.—Not long since a correspondent invited Mr. McKinlay to give in these pages a *resumé* of the manner in which he succeeded in obtaining his superb samples of show Potatos. That no reply was given did not arise from want of courtesy, but rather because of a well grounded belief that existed in Mr. McKinlay's mind that the query was not *bonâ fide*, in other words, that it was intended as a draw, as it is no secret that some persons have not hesitated to express an opinion that the grand samples Mr. McKinlay exhibits have not been grown at Beckenham. A favourable opportunity occurred a few days since to accept an invitation from that gentleman to look over his growing stocks as now to be seen in some cases nearly ripe, and in the majority yet in the full luxuriance of growth, and it will readily be conceded that either mentally or on paper it was next to impossible to make note of the various features of the 600 kinds that are this year being cultivated in Mr. McKinlay's ground. The collection of such a number of sorts has naturally been a work of difficulty, and few catalogues are there that have not been ransacked to find positively distinct sorts; few indeed are the kinds put into commerce within a recent period that are not represented. In a large number of cases only a few tubers of each are being grown, as barely a tithe of these numerous kinds produce what might be called exhibition samples; they are grown for the purposes of comparison and possibly that they might enable the cultivator at some future date to stage a large representative collection of all the best known kinds. Now in the matter of the production of show tubers one great element of Mr. McKinlay's success is found in the beautiful quality of the soil of his Beckenham garden; it is so deep, so soft, and silky, and so finely pulverised that, to use the simile of a *confrère*, it is quite enough to tempt one to lie down on it to sleep. That all this high quality and fine productive power has been of Nature's own formation we may beg leave to doubt. Mr. McKinlay tells us of constant and deep tilth, the incorporation of plenty of horse-droppings and various patent manures, and not least, constant care to keep the soil free from weeds and such obnoxious elements. In the selection of tubers for planting, more than the customary care is exercised. If from roots of home growth, seed is never saved except from plants that have been fully developed. It is not all the best tubers for the pot, all the rubbish and ugly ones for the seed. So far from that being the case, the seed claims next place to the selection of show tubers, and in this way, without doubt, a fine degree of stamina in the stock is maintained. If seed is bought in, it is not the rule to buy a dozen tubers if only a dozen be wanted; rather thrice or four times that number is purchased that the cream of the whole may be planted. Where the avowed object of the grower is to secure the finest show samples, it would be folly to spare expense either in the matter of cultivation, or in the selection of the best seed. The storing of seed-tubers in the safest way is also a matter of moment. At Beckenham, when a row of any sort is lifted, the best samples are selected with care, and carried into a large airy out-building, which is lined with tiers of small wooden bins ranged one above the other, but open at the top, each one holding about half a bushel of Potatos. Into these the selected samples are carefully laid, and are covered up with dry sawdust, where they remain clean and fresh until required for the show-table — whilst the remaining tubers of the sort having been exposed to the air and fully dried for a few hours are then buried in a small pit at the end of the row, where they remain until the show tubers having been removed from the bins to win prizes at exhibitions the heaps are opened, the selected seed tubers are taken to the bins to remain for the winter, whilst the remainder go to the store for domestic consumption. As in front of each bin the name of the Potato occupant is placed, each sort is easily found when required. There is no better material in which to keep show tubers fresh and bright than clean dry sawdust. But all this is simply preliminary to the important subject of the condition of the Beckenham Potatos this year, and of this it can be said that not only have they never looked better but already of the earlier kinds Mr. McKinlay has lifted some of the finest samples of certain sorts he has ever seen. In looking

over the garden one is struck with the fact that evidence of disease in the haulm is exceedingly limited, and exists only in the earliest kinds, whilst the tops of all later sorts or of the early kinds planted late are robust, fresh, and vigorous. The soil is so pulverised and so warm that growth is rapid and clean, whilst we learn that throughout the garden no fresh manure has been added this season, a course of culture that doubtless will show its beneficial results on the low average of diseased tubers. But looking at Potato-tops naturally sets one longing—if we may say so with all proper innocence—to look at Potato-bottoms, and with a ready zest Mr. McKinlay produces a large steel fork and lifts for inspection a root of a new seedling white kidney named Beckenham Beauty, which is found to produce a grand crop and sample of large fluke-shaped tubers that will make a grand dish for the show-table. Blanchard throws out a marvellous sample, some tubers weighing 1 lb. each, and singularly bright and handsome. Red Emperor, a beautiful sample, large and high coloured, and a fine crop. International came out grand, the one-root lifted actually gave out of a total of thirty tubers, six that would have graced any dish. Trophy, a new red American kidney, shows a rare crop and a fine though not yet fully developed sample. Shelburne, another new American, throws out a splendid root of tubers of great beauty, long snow flake-shaped white, tipped with pink at the nose. Bountiful, clean, bright and beautiful. Woodstock kidney, a new kind of Mr. Fenn's raising, now in the hands of the Messrs. Sutton, gives some of the handsomest and most perfect tubers seen and a splendid crop. The firm have done well to let Mr. McKinlay test this fine kind at Beckenham. Beauty of Hebron, a new American, and several others are lifted, enough to show that throughout the produce is of the finest quality and in great abundance. That more were not lifted is due to the reasons—first, that time was short; and, second, that we regarded it as a pity that roots yet in luxuriant growth should be thus prematurely lifted merely for our gratification. About the second week in August—disease permitting—will find the bulk of the Beckenham crop ready for lifting, and then look out for a sight to gladden the hearts of the gods, supposing that they take any special delight in the production of fine Potatos. The space allowed between the rows ranges from 3 feet to 4 feet, so as to admit of the full development of top. With respect to the vexed question of polishing for exhibition, it is safe to say that to polish tubers such as are lifted in Mr. McKinlay's garden, would be as absurd as painting the Lily or gilding refined gold. *Spud.*

Pernettya ciliaris.—I have a plant of this in the open, and in an exposed situation, which has flowered well, with only one exception, for four or five years. I bought it with a lot of shrubs at a sale. Used with a Lily of the Valley leaf for a "button-hole" the flowers pass muster to other than critical eyes for those of the Lily itself. *C. H., Salisbury.*

The Elder.—All praise to the Elder, and all praise also to Mr. Alex. Forsyth for upholding it and singing its praises. Let me, I pray you, add my mite. The Elder is a charming tree. I love its beautiful bunches of cream-coloured flowers, with their fragrant smell, for I cannot believe that they are dangerously narcotic—its succulent purple berries, and its deep green coloured leaves, which have the not to be undervalued quality of driving away midges, *alias* gnats, and other insect disturbers of one's peace of mind on warm, damp summer evenings. By the way, Elder leaves are said to keep the little gentlemen in black velvet (moles) at a respectable distance, and a decoction of them most certainly destroys a great many of the insects that infest delicate plants. The berries are reputed poisonous to poultry of all kinds, and the flowers fatal to turkeys. About this last-named point I cannot offer an opinion, but the first is not correct, for I had a beautiful Elder tree growing in the enclosed space, where my hens and young chickens were fed, and they used to mount into the branches to get at the berries as soon as the fruit ripened in September. I never could save any of the berries for wine making. The leaves of the Elder, though refused by most animals, are beneficial to sheep when they are affected with a disease called "rot." Have you ever noticed a singular fungus which occasionally grows on the Elder called Judas's Ear (Exidia auricula Judæ). It resembles the human ear in shape, but why it should be considered like the arch-traitor's auricular appendages in particular is puzzling. The right name I am told is Peziza auricula, and an old woman I once knew made a lotion of this fungi, and used it in cases of ophthalmia. A very great many preparations were formerly made from Elder flowers, Bark, and fruit. One was called "Elder Rob," another "Elder Vinegar." The first was composed of ripe berries and sugar, five parts of fruit to one of sugar, boiled gently until it became like thick honey. This stuff was given in rheumatic affections. The "Elder Vinegar" was a gargle, the Elder-flower water a cosmetic; but I must not "betray the secrets of my prison-house" or of the trade, as I think it might be an agreeable and profitable occupation, if needs be, to set up as a modern female quack doctor. I will promise my patients not to poison them, and to give them, at any rate, harmless preparations. One preparation of Elder is [said to be] invaluable in small-pox and other eruptive diseases, which have been checked in their determination to the skin. The Elder was called by the Saxons "Ellara," and it is still in the North known by the name of the "Boor Tree," not that I mean to imply, though I am ancient British, being of Welsh descent, that the Saxons were clowns. Sambucus comes from "sambuca," a musical, and some people are of opinion that the "sackbut" was made from the wood of the Elder tree. There are three or four varieties which are generally cultivated in gardens. The flowers of the white-berried Elder give wine the odour of Muscat, and are used to simulate Frontignac wines. The French put layers of the flowers between keeping apples, and flavour vinegar with them. The dwarf Sambucus ebulus grows in waste places, and blooms in July: this species is called Danewort. *Helen Watney.*

Lichens: their rate of Growth.—Mr. Phillips has quite misapprehended my remarks. If he will carefully read once more what I have written he will find that I have not said one single word about the age, or the rate of growth, of lichens. In fact the subject never entered my mind at all. I merely called attention to the two following facts, viz.:—1. A flint in a bed of chalk naturally and commonly acquires (by decomposition) a thick white porous crust, and this crust is sufficiently thick and porous to support lichen growth. 2. A flint which has been taken from chalk and broken by hand some hundreds or thousands of years ago, also at length acquires a white porous crust on the broken surfaces, but in this instance the newer crust is, as a rule, so thin and hard that it cannot as a rule support lichen-growth. I merely referred to the age of flints and the immense time that is probably required for their complete disintegration. In my own mind (although I in no way referred to the subject) I then looked and still look upon the lichens as recent productions, and nothing has been and is further from my belief than that lichens live to a vast age. Mr. Phillips says that I infer "from the absence of lichens on certain old buildings of worked flint in Norfolk and Suffolk dating prior to the Norman Conquest, that those lichens present on the flint flake must be as old as that date." My remarks will not bear such a construction. I referred to worked flints of known date merely to show that the time which has elapsed since their fracture has been insufficient to properly prepare their surface for perfect lichen growth. I have in no way mentioned or suggested an age for the lichens. *W. G. Smith.*

Dendrobium superbiens and D. Sumneri.—There is, in p. 48 of your columns, some "foreign correspondence" from the Brisbane Museum. The author, Mr. F. M. Bailey, endeavours to express his unfavourable opinion about what I wrote on Dendrobium superbiens, and makes use of what he thinks an opportunity to write a panegyric on Baron von Müller's merits. I refer to what I have said, having stated that Baron von Müller speaks of "glandular protuberances," and Mr. Bentham of pedicels three to four lines long. It was quite necessary to conjecture from Mr. Bentham's indications that the D. Sumneri was in the way of D. dicuphum. Now Mr. Bailey declares my D. superbiens to be a distinguishable variety of D. Sumneri. If really these two belong together, then the name D. Sumneri has simply to be cancelled, for in our days only such names have validity as are based on intelligible diagnoses. It is, to say the least, a great mistake on Mr. Bailey's part to declare that it is possible to name the plant as D. Sumneri from the descriptions given. Nay, it is impossible. And to give evidence of his fair spirit Mr. Bailey adds, that in D. Sumneri the pedical reaches 2 to 3 inches, when Mr. Bentham has measured 3 to 4 lines. This gives a difference of it may be as much as 32 lines against 3 to 4. And after this these Dendrobes are believed to be recognisable as the same thing. Where there is a single Orchid in all the majestic army which shows such differences? It was a very great fault of Baron Müller to depict his D. Sumneri from such unsatisfactory fragments without any other reason than to give a name. Mr. Bailey should understand, that if somebody has scarcely ten days in the year, without applications being made to him to name Orchids immediately, he is really entitled to complain in the most bitter terms of the horrible drawback of "descriptions" of new species, which cannot be recognised, though forty years' steady work should enable one to understand just what can be understood. It is high time to protest against that kind of hasty publication, and to compel certain authors to work with such an amount of care as will enable others to understand their opinion. If we do not this, we may be in a short time in the deepest Babylonian confusion. The whole case is simply this—A. describes what might be regarded as a new pussy-cat. B. describes a new lion. Now A.'s friend urges that the lion should bear the names of A.'s pussy combined with the lion's description given by B. Mr. Bailey may soon have the satisfaction to see a memorandum of mine on many recent Orchidic descriptions in the system of Australia. There he will also read, by what highly curious reasons the type of Dendrobium Sumneri came not within my reach in consequence of the pains taken not to diffuse a knowledge of Australian plants. *H. G. Rchb. f.*

Asparagus plumosus (See p. 527, vol. ix.).—In your issue of April 27 last, I observe that a plant of Asparagus plumosus has been introduced to the nurseries of Messrs. Veitch. A plant of this Asparagus was found by Mr. Cooke, gr. to the Rev. John Harman, and brought to England more than two years ago. The plant flourishes well under his treatment, so that we can form a much better idea of its elegance than from the specimen Messrs. Veitch have lately received. I think myself that it will form a very useful creeper under glass, making a natural shade for the plants; and I was told by Mr. Cooke a few days ago that it has hitherto proved itself a clean growing plant. *Henry Aston Walker*, 128, *Lexham Gardens, Kensington.*

Weigelia hortensis nivea.—As you say Weigelia hortensis nivea is a very fine white flowering shrub which should be in every garden in pots for early flowering, quite as much as Deutzia gracilis, for it is quite as useful and quite as beautiful, and anybody seeking white flowering plants of easy culture would do well to add this to their stock of really useful plants. It roots freely from green wood, and may be increased readily, and, potted on freely, soon developes into flowering plants. *Chevalier.*

Bocconia cordata.—Among hardy ornamental foliage plants this takes high rank and is deserving a place in any shrubbery border or isolated position on a lawn, where if planted in good soil with plenty of depth for its roots to ramble it grows with great strength and attains a height of 6 or 8 feet, each shoot being terminated by a fine large panicle of brownish white flowers, which give it a very striking effect. The leaves are about the size of those of the Fig, which they somewhat resemble in form, but are far more beautiful, the divisions being more deeply indented, while in colour they have a palish green tinge with a highly polished surface, the under sides possessing the silvery white appearance peculiar to Seakale. This, when the wind is blowing so as to give them a slight movement or a turn upwards, renders them very attractive and shows them up in pleasing contrast with any foliage of a darker hue. It is a plant that admits of ready increase by division, as it makes numerous offsets or suckers, that come up some distance away from the main stems. In removing these it is necessary for the sake of getting roots to them to follow them low down, or failure is likely to be the result. The best time to take them off is early in spring when about 3 or 4 inches high, as then they quickly start away and become well established before dry weather sets in. *J. S.*

Reports of Societies.

Royal Horticultural, *July* 24.

Scientific Committee. — Dr. Maxwell T. Masters, F.R.S., V.P., in the chair.

Tea-leaf Disease.—Mr. McLachlan reported that the leaves forwarded from Darjeeling and shown at a previous meeting did not afford sufficient material for a satisfactory opinion being given as to the cause of the disease.

Injury to Pines.—Mr. McLachlan showed specimens of Pines (P. silvestris?), the young shoots of which were rotted and felted together by a white web, the work of a species of Tortrix, supposed to be undescribed. The injury was spread over so large an area that hand picking and other means of combating the evil were ineffectual.

Sugar-cane Disease.—Specimens were again shown from Porto Rico, in which the cane was bored by some insect, but in the total absence of all history of the invasion, and in the absence of specimens of the insect, no more definite opinion could be given.

Virginian Creeper "a passer of the Bottle."—Mr. W. G. Smith exhibited a drawing, part of which is here reproduced to a small scale, of a bottle containing water and a plant, in the grasp of Ampelopsis hederacea. Mr. Smith said that on one of the walls of his house he had a large Virginian Creeper growing, and a week or two ago he noticed when the hanging branches were disturbed by the wind that there was a jingling noise against the wall, near one of the first floor windows. On going to the spot to discover the cause of the noise, he found a bottle tightly grasped round the

neck by a tendril of the Ampelopsis. The bottle, which contained water, and a specimen of Phyteuma orbiculare, weighed just over 3 ounces. It had been taken by the Creeper off the sill of a window above, and lowered (as the branches grew downward), several feet, nearly to the level of the window below.

Juice distilled by Polyporus Dryadeus.—Mr. Smith showed a phial containing the juice naturally distilled by this woody fungus from the trunk of the Oak. P. dryadeus is a not uncommon parasite of the Oak, and it is invariably studded with large drops of moisture near the margin of its pileus. The moisture is derived from the tree on which the fungus grows. The juice, which was obtained by Dr. Bull of Hereford, was, said Mr. Smith, sweet to the taste, and probably devoid of tannin: on a microscopical examination it displayed a number of germinating spores, a few crystals, some cells belonging to the Fungus, and a number of exceedingly minute revolving bodies, which might be referred to Sphæro-bacteria, though the nature of these latter bodies might possibly be of a very different character from Bacteria.

Potato Disease.—Rev. G. Henslow showed specimens showing the carbonising effect of the fungus on the leaves.

Hybrid Lilies.—Mr. G. F. Wilson showed specimens of hybrid Lilies raised by Mr. Mangles. The flowers are in the way of those of L. croceum, with large bell-shaped flowers, lanceolate recurved segments, tapering at the base into a stalk, and of a buff-yellow colour spotted with purple spots. No anthers were formed.

Gnaur on Cedar.—Mr. Wilson also showed a good specimen of these productions, which are usually considered to be abortive branches.

Monstrous Forms of Mimulus maculatus.—Specimens were sent by Mr. Clapham, which were referred to Dr. Masters for examination and report.

Diseased Orchid Leaves.—Dr. Masters showed, on behalf of the Marquis Corsi-Salviati, leaves of Aerides odoratum, &c., with a corky development of the epidermis, the result of some injury to the leaves. As sundry Cocci or scale insects were present the presumption was, that the insects in question were the cause of the malady. The specimens were referred to Mr. McLachlan for further report.

Monstrous Rose.—Dr. Masters showed a specimen obtained from the Royal Gardens, Kew, of a Rose, in which the shoot was flattened, curved, and bore flowers on one side only, one above another in continuous series. The specimen was remarkable, as affording an excellent illustration of the growth and union of secondary axes, one to the other, in a continuous line, as in the so-called "sympodes." An excellent sketch of the shoot in question was exhibited by Mr. Worthington Smith.

Torenia Bailloni.—Dr. Masters called attention to this remarkable novelty from Cochin China. It has the habit of T. asiatica and of T. Fournieri, but the flowers are bright yellow with a dark purplish brown tube. The specimen was exhibited by Messrs. Veitch before the Floral committee, but as the plants were small and out of condition no notice was taken by that body of what is a very interesting novelty and one which ultimately is sure in all probability to find favour with cultivators. Some conversation ensued as to the desirability of the Scientific committee taking steps to adjudicate on novelties and plants of botanical interest likely to be passed over by the other committees, either because not adapted for decorative or commercial gardening, or because they are not exhibited in a condition to justify any notice being taken of them on the grounds of cultivation. Numbers of interesting plants, and some, like the present one, pretty certain to secure the favour of cultivators in general, might be sent if they were not likely to be ignored by the floral committee. A "botanical certificate" given by that body is naturally as little valued as a "first-class certificate" awarded to a florists' flower by the scientific committee would be. As a result of this conversation it was agreed that the President of the Scientific Committee be requested to address the Council on the subject.

Specimens Exhibited.—Mr. W. W. Saunders sent from Worthing, as illustrating the mild winter climate of that locality, Colletia spinosa in fruit, Hakea adnata in fruit, Verbena Melindres, and Cnicus altissimus, a noble Thistle, 11 feet high, 7 feet through at 4 feet from the ground. The whole plant has a pyramidal habit like that of a Cypress, and is very ornamental. A plant of Vesuvius, in which the white sport had reverted to its original red, was shown by Mr. Cannell.

Lindley Library.—Donations were announced from Messrs. Veitch of a copy of the original edition of Gerarde's *Herball* (1633) and of Le Blond's *La Théorie et la Pratique du Jardinage*, 1715. Mr. Ellacombe's work on the *Plants of Shakspeare* has been added by purchase.

The meetings of the Committee stand adjourned till November next.

FLORAL COMMITTEE. Dr. Denny in the chair. Thanks to a most liberal contribution of good things sent up from the Society's garden at Chiswick, the Council Room was well filled, considering we are nearly at the end of "the season," and the trying times that exhibitors have had lately. The only Certificate that was awarded was one of the First-class to Mr. Turner, for the magnificent new seedling Rose, Harrison Weir, described last week at p. 84. The Chiswick contingent consisted of a large, and freely-flowered collection of double-flowered zonal Pelargoniums, a nice collection of Abutilons in variety, a large assortment of cut blooms of Dianthuses, Phloxes, and Clove Carnations, and further examples of Torenia Fournieri, a very pretty, and remarkably free-blooming species. Mr. Speed, gr. to the Duke of Devonshire, Chatsworth, sent a single specimen of Disa grandiflora, with seven fully expanded flowers on a spike, and two more to open. [This was the variety Barrellii introduced by Mr. W. Bull in 1874.] The plant was in a splendid condition, and well merited the cultural commendation bestowed upon it. Sir William Marriott, the Down House, Blandford, showed three pans of the dark-coloured variety of Disa grandiflora named superba, with about thirty spikes in all and a couple of flowers on each; a vote of thanks was accorded. Messrs. F. & A. Smith of Dulwich, showed a fine group of Balsams, perhaps not yet at their best but carrying blooms which, for size, fullness, beauty of form, and decided colouring, have never been excelled. From Mr. H. Cannell, Swanley, came another of those excellent



FIG. 18.—A BOTTLE DISPLACED BY THE GROWTH OF THE VIRGINIAN CREEPER.

displays of cut blooms of Verbenas that he has been treating us to so often this season. Mr. H. James, Castle Nursery, Lower Norwood, showed the rare Oncidium curtum, with a spike of twenty-two flowers; and Oncidium prætextum superbum, with a five-branched spike of dark brown and yellow blossoms. From Mr. John Wills came a contribution of the varieties of double Stocks grown from seed sent by Mr. V. Dopplet of Erfurt. A hybrid Lily, probably from davuricum and elegans, lemon-yellow, with maroon spots, and grown by J. H. Mangles, Esq., Haslemere, was shown by G. F. Wilson, Esq., who also sent from his own garden the richly-coloured swamp Lily of North America, Lilium superbum, about 8 feet high, and grown in a pot. A vote of thanks was passed. Messrs. Paul & Son, the Old Nurseries, Cheshunt, showed cut blooms of such of their new Roses as Mrs. Laxton, Marquis of Salisbury, Duke of Teck, and Lady Darnley; and Lady Dorothy Neville, Dangstein, sent examples of some strangely coloured and quaintly formed Cockscombs. The crimson-plumed East Indian Celosia pyramidalis was well shown by Messrs. James Veitch & Sons, who also exhibited in Torenia Bailloni, a yellow-flowered form, which promises when better grown to become as useful a plant as T. Fournieri. From Mr. C. Smith, Caledonia Nursery, Guernsey, came some remarkably strongly-grown flowering specimens of that beautiful old Cape plant, Sparaxis pulcherrima. The stems were quite 7 feet high, and profusely flowered. From Mr. R. Parker, Tooting, came cut sprays of Rubus fruticosus flore roseo pleno, the double flowered rosy pink Bramble, a pillar or wild garden plant of great beauty. Olearia Haastii, a dwarf, dense, white flowering New Zealand shrub, not half so much known as it deserves to be, was also exhibited by Messrs. James Veitch & Sons; and Mr. Scutt, gr., Ewell Castle, Surrey, showed a seedling erect flowered Gloxinia of beautiful form and rich colour, but showing no improvement on many others that have already been seen.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. Messrs. Rivers & Sons, Sawbridgeworth, received the thanks of this committee for an interesting display of Peaches, Nectarines, Cherries, &c., including Early Rivers, Rivers' Early York, Early Louise, Merlin, and Hale's Early Peaches; the Pine-apple, Spenser, Newton, Byron, and other Nectarines, Late Black Bigarreau, and Bigarreau Gros Cæret Cherries, &c. From Mr. J. Clarke, gr. to Lord Hastings, Melton Constable, Norfolk, came a collection of large Melons, including Eastnor Castle, Cox's Golden Gem, Melton Favourite and Sutton's Golden Perfection. Mr. Chapman, gr., West Park, Salisbury, again sent his seedling Melon John Chapman, but it failed to get an award. Mr. A. Donaldson, The Gardens, Stoodleigh Court, Tiverton, exhibited a white-fleshed, smooth, medium-sized Melon named St. George, and a netted scarlet-fleshed variety named Stoodleigh Court, but neither of them came up to the Committee's standard of quality. Messrs. Charles Lee & Son showed the Lawton Blackberry, a variety which stands high in America; and Messrs. J. Veitch & Sons submitted fruits of two imported species of Pine-apple from Peru, which did not prove worthy of being put into cultivation. A heavily laden branch of the Stone Apple was exhibited by Mr. Louis Killick, of Langley, to show its remarkable productiveness.

National Carnation and Picotee Society.—The second annual exhibition of the Southern section of this Society, was held on Tuesday last in the Royal Horticultural Society's Gardens, South Kensington, in conjunction with the meetings of that Society's committees, and we were pleased to find, that the exhibition on the whole was a much better one than could have reasonably been expected, considering the withering character of the intense heat experienced during the previous week or ten days. When the date was selected sometime back, there was every probability, considering the nature of the weather up to that time, that the flowers would be in their best dress at the time stipulated, but as things have turned out, a fixture a week earlier would have better served the Southern growers. As it was, Mr. Turner was thrown out of most of the competitions altogether, and Mr. Dodwell, the indefatigable honorary secretary, too, could only show second flowers as a general rule, good though they were, and fairly successful in the competitions. But if the show illustrated one thing more than another, it was the wonderful manner in which Mr. James Douglas manages always to "hit the day," for although even with his skill and resources, he could not save his best flowers, he nevertheless was in sufficiently strong force to take thirty-four prizes, besides showing the premier blooms in the show of both Carnations and Picotees—a feat of unerring skill, that, so far as we know, has never been equalled—in the south at all events. A satisfactory feature of the show, as compared with the one held last year at the Westminster Aquarium, was the increased number of northern flowers staged, together with a larger attendance of northern growers themselves, whose presence gave a lively interest to the proceedings of the day.

The prizes were awarded as follows:—Carnations: For twenty-four blooms, not less than twelve dissimilar varieties.—1st, Mr. James Douglas, gr. to F. Whitbourn, Esq., Loxford Hall, Ilford, with Eccentric Jack, crimson bizarre; James Douglas, purple flake; Isaac Wilkinson, C.B., James Taylor, pink and purple bizarre; Admiral Curzon, scarlet bizarre; James Cheetham, scarlet flake; Rose of Stapleford, rose flake; Squire Meynell, purple flake; Captain Stott, C.B., Rev. G. Rudrick, C.B., Sybil, rose flake; True Briton, scarlet bizarre; Earl of Stamford, purple flake; Rifleman, C.B., Sarah Payne, pink and purple bizarre; John Keet, rose flake; Dreadnought, scarlet bizarre; John Bayley, S.F.; James Merryweather, R.F.; Lord Lewisham, C.B.; J. D. Hextall, crimson bizarre; and the Clipper, scarlet flake; 2d, Mr. George Rudd, Undercliff, Bradford; 3d, Mr. E. S. Dodwell, Chatham Terrace, Larkhall Lane, S.W.; 4th, Mr. Jonathan Booth, Failsworth, near Manchester. For twelve dissimilar varieties of Carnations:—1st, Mr. E. S. Dodwell, with Falconbridge, P.P.B.; Admiral Curzon, S.B.; John Keet, R.F.; James Cheetham,

scarlet-flake; Maréchal Ney, C.B.; Graceless Tom, C.B.; three seedling scarlet bizarres, a seedling crimson bizarre, and a seedling rose-flake; 2d, Mr. James Douglas: 3d, Mr. S. Brown, Compton Road, Handsworth, Birmingham; 4th, Mr. S. C. Buttrum, Bargh Mills, Woodbridge; 5th, Mr. G. Rudd; 6th, Mr. B. Simonite, Rough Bank, Sheffield. For six dissimilar varieties: 1st, Mr. Medhurst, Priory Road, Wandsworth Road, with Falconbridge, P.P.B., Mercury, S. B., J. D. Hextall, C. B., Lovely Ann, rose-flake, Admiral Curzon, S.B., and Florence Nightingale, P.F.; 2d, Mr. W. H. Dodwell, Sydney Villa, Stockwell, and 3d, Mr. T. F. Burnaby Atkins, Halstead Place, Sevenoaks.

In the classes for single specimen blooms, of the six different sections, the awards were made in the following order:—Scarlet bizarres: 1st, Mr. Douglas, with True Briton; 2d, Mr. J. Booth, with Garibaldi; 3d, Mr. J. Fletcher, with a seedling; 4th, Mr. S. Brown with Admiral Curzon; 5th, Mr. Douglas, with Admiral Curzon, Crimson Bizarres—1st, Mr. Douglas with Jenny Lind; 2d, Mr. Douglas with John Simonite; 3d, Mr. Turner with John Simonite; 4th, Mr. Douglas with Captain Stott; 5th, Mr. Douglas with Lord Milton. Pink Bizarres—1st, Mr. Douglas with James Taylor; 2d, Mr. S. C. Buttrum with Sarah Payne; 3d, Mr. J. Hines, Ipswich, with Eccentric Jack; 4th, Mr. Douglas with James Taylor; 5th, Mr. S. C. Buttrum with Eccentric Jack. Purple Flakes—1st, Mr. Douglas with James Douglas; 2d, Mr. G. Rudd with Ajax; 3d, and 4th, Mr. Douglas with Squire Meynell; 5th, Mr. Rudd, with Ajax. Scarlet Flakes—1st, Mr. S. C. Buttrum with Annihilator, and the other four prizes. Mr. Douglas, with Clipper, John Bayley, Sportsman, and Clipper. Rose flakes—1st, Mr. Douglas, with Sybil; 2d, Mr. Douglas, with John Keet; 3d, Mr. Buttrum, with Mrs. Green; 4th, Mr. Douglas, with Rose of Stapleford; 5th, Mr. E. S. Dodwell, with Rose of Stapleford. The premier Carnation, selected from the whole exhibition, was John Bayley, S. F., shown by Mr. Douglas.

Picotees: for twenty-four blooms, not less than twelve dissimilar varieties—1st, Mr. James Douglas, with J. B. Bryant, heavy red edged; Mary, light purple edged; Fanny Helen, heavy rose edged; Mrs. Douglas, light purple edged; Ethel, light rose edged; Mrs. Niven, heavy purple edged; Mrs. Bower, light red edged; Edith Dombrain, heavy rose edged; Prima Donna, light purple edged; Brunette, heavy purple edged; Miss Wood, light rose edged; Zerlina, heavy purple edged; Obadiah, heavy rose edged; Clara, light red edged; Miss Lee, light rose edged; John Smith, heavy red edged; William Summers, medium red; Alliance, heavy purple edged; &c.: 2d, Mr. Turner, with Princess Mary, Lady Beeston, Lothair, Queen of Summer, Rev. F. D. Horner, heavy red edged; Brunette, heavy red edged; Zerlina, heavy purple edged; Royal Visit, heavy rose edged; Lady Salisbury, Lady Louisa, heavy rose edged; Mrs. Wilson, Lily of the Valley, wire edged red; J. B. Bryant, red edged; Lady Carington, medium rose edged; Alliance, heavy purple edged; Mrs. Payne, medium edged rose; Brilliant, heavy scarlet edged; Thomas Jivens, light red edged; and Mrs. Langley. Second, Mr. James Douglas; 3d, Mr. E. S. Dodwell; 4th, Mr. J. Booth; 5th, Mr. H. Hooper, Bath. For twelve dissimilar varieties: 1st, Mr. James Douglas, with J. B. Bryant, red edged; Miss Wood, light rose edged; Mrs. Douglas, purple edged; Thomas William, light red edged; Mary, purple edged; Zerlina, heavy purple edged; Edith Dombrain, heavy rose edged; Brunette, heavy red edged; Fanny Helen, heavy rose edged; John Smith, heavy red edged; Minnie, purple edged; and Mrs. Niven, purple edged; 2nd, Mr. E. S. Dodwell; 3rd, Mr. R. Gorton, Eccles, Lancashire; 4th, Mr. G. Rudd; 5th, Mr. S. Brown; 6th, Mr. B. Simonite. For six dissimilar blooms: 1st, Mr. Medhurst, with Robert Scott, heavy red edged; Beauty of Cheltenham, Princess of Wales, red edged; Cynthia, purple edged; Mary, light purple edged; Zerlina, heavy purple edged, and Miss Lee, light scarlet edged; 2nd Mr. W. H. Dodwell; 3d, Mr. T. F. Burnaby Atkins.

Single specimens: red, heavy edged, 1st and 2d, Mr. Douglas with John Smith; 3d, Mr. Douglas with Princess of Wales; 4th Mr. Turner with Dr. Abercrombie; 5th, Mr. Douglas with Princess of Wales. Red, light edged: 1st, Mr. G. Rudd, with Thomas William; 2d, Mr. B. Simonite, with Violet Douglas; 3d, Mr. E. S. Dodwell, with Thomas William; 4th, Mr. B. Simonite, with Violet Douglas; 5th, Mr. G. Rudd, with Thomas William, Purple, heavy edged: 1st, Mr. Turner, with Mrs. Albert Chancellor; 2d, Mr. Turner, with Zerlina; 3d, Mr. E. S. Dodwell, with Zerlina; 4th, Mr. Douglas, with Mrs. Niven; 5th, Mr. S. C. Buttrum, with Lavinia. Purple, light edged: 1st, Mr. Douglas, with Mary; 2d, Mr. E. S. Dodwell, with Mary; 3d, Mr. Turner, with Alice; 4th and 5th, Mr. Douglas, with Mrs. Douglas and Mary. Rose or scarlet, heavy edged: 1st, Mr. Turner, with Mrs. Payne; 2d, Mr. E. S. Dodwell with Juliana; 3d and 4th, Mr. G. Rudd, with Miss Horner and Juliana; 5th, Dr Abercrombie, with Lady Louisa. Rose or Scarlet, light edged: 1st, Mr. Turner, with Victoria; 2d, Mr. Douglas, with Miss Wood; 3d, Mr. G. Rudd, with Miss Wood; 4th, Mr. H. Hooper, with Lucy; 5th, Dr. Abercrombie, with Victoria. Yellow Grounds: 1st, Mr. Turner, with Hon. Mary Lascelles; 2d, Mr. Turner, with Prince of Orange; 3d, Mr. Douglas, with Prince of Orange; 4th and 5th, Mr. Turner, with Alice Waite and Prince of Orange. The Premier Picotee in the show, was J. B. Bryant, heavy-edged red, shown by Mr. Douglas.

Selfs, Fancies, or Yellow Grounds, twenty-four blooms, not less than twelve dissimilar; 1st, Mr. J. Douglas; 2d, Mr. Turner; 3d, Mr. H. Hooper; 4th, Mr. B. Simonite; 5th, Mr. E. S. Dodwell. Twelve dissimilar blooms: 1st, Mr. Turner; 2d, Mr. H. Cattley-Bath; 3d, Mr. H. Hooper; 4th, Dr. Abercrombie.

Plants in Pots. Twelve specimens in Pots not exceeding 8 inches in diameter: 1st, Mr. Turner; 2d, Mr. Douglas.

First-class Certificates were awarded to Mr. Turner for Ophir, a fine yellow self Picotee; Lord Beaconsfield, salmon buff, with red edges, a fine flower, with beautifully shaped petals; Royal Visit (Abercrombie), a beautiful heavy edged Rose; Mrs. Payne, fine medium edged Rose; Alice, yellow ground, edged and striped with red; Henry Tait, yellow ground, heavy red edged and striped; and Eleanor, primrose yellow, striped with red.

Newcastle Horticultural: *July 18 and 19.*—This Society, said to be the oldest in England, has, within the last few years, had new life infused into it by coming under the management of a really energetic committee, who have shown by the results of their exertions what can be done by thoroughly united efforts to make their show attractive to the public, and to bring exhibitors from long distances to aid the local growers in making their displays such as to maintain their hold of the masses, without which these gatherings necessarily lack the means for their existence. That the committee have been in this successful is evident, from the fact that each year they command a larger attendance. On this occasion they took at the gates on the first day £250 in money, in addition to the tickets held by some 4000 subscribers, of which large number we understand the Society can boast. The show was held in Leazes Park, on a large canvas-covered space, consisting of five spans, each 130 feet in length, placed side by side, and collectively 150 feet wide, supported by upright timbers 10 feet in height, let well into the ground, and covered alternately with pale blue and white calico. On the head of these pillars, which ran longitudinally under the junction of each span, was a stout piece of timber, to which the canvas was secured, and these, as well as the outside walls of the tents, were festooned with red cloth. In this way there was very little timber except the centre poles seen. The whole was securely braced together by several runs of 2-inch gas-piping extending the entire length across the timbers which cap the upright pillars, and bolted to them. This arrangement was devised by Mr. Dinning, of Messrs. Dinning & Cook, Hot-water Engineers, Newcastle.

The exhibition collectively was considered quite up to the standard of former years, and showed a marked improvement in the local growers' productions, thereby giving evidence that the first object for which such societies exist is being attained. The arrangements were of the most complete description, which enabled the judging to be got through without the hitches and delays that too often occur where better things might be looked for.

Stove and Greenhouse Plants.—The leading open class of ten flowering and ten foliage plants, grouped for effect, 1st prize £25 and the Royal Horticultural Society's Silver Knightian Medal, brought out two competitors—Mr. Tudgey, gr. to T. F. G. Williams, Esq., Henwick Grange, Worcester, was 1st, his flowering specimens showing unmistakable signs of long travel and previous exhibiting, but his foliage plants were much superior to those of his opponent and better adapted to give the effect required by the conditions of the schedule, as well as being better arranged. His most noticeable blooming examples were the useful summer-flowering Heaths, E. Irbyana, and E. Paxtoni, and Ixora Dixiana; in foliage he had a handsome Cycas—C. circinalis, C. revoluta, a fine Dicksonia antarctica, and the two elegant Palms, Geonoma gracilis and Cocos Weddelliana, with the massive leaved Pritchardia pacifica. Mr. T. Wilson, gr. to Mrs Fleming, Normanby Hall, Middlesborough, 2d, with well-flowered fresh, healthy, and large plants of Dipladenia Brearleyana, D. amabilis, Allamanda Hendersonii, Clerodendron Balfourianum, Erica ferruginea, superba, and Phœnocoma prolifera Barnesii. For six blooming plants, Mr. Wilson was easily 1st, showing in a well-bloomed half-dozen the old Tremandra verticillata trained on a large balloon-shaped trellis, a plant of too slender growth and spare foliage to look well so managed. The Dipladenia amabilis in this lot bore about thirty bunches of very large highly coloured flowers; Mr. T. Battensby, Hagg Hill, Blaydon, 2d, whose group was the yellow-flowered Cassia corymbosa, a plant, when well done, as this was, very effective.

Foliage Plants and Ferns.—For six fine-foliage plants: For these Mr. A. Methven, gr. to T. Lange, Esq., Heathfield House, Gateshead, stood well to the front, having, amongst others, a grand example of Encephalartos; Mr. Battensby 2d. Six Ferns: Mr. Wilson was again in front. In his group there was a preponderance of tree species. Second, Mr. J. Storrie, gr. to B. Noble, Esq., Gloucester House, Newcastle. In the division for amateurs the best three blooming plants came from Mr. J. Oliver, consisting of Statice profusa, Allamanda Chelsoni, and Trachelospermum jasminoides; Mr. Battensby 2d.

Pelargoniums.—For so late in the season these were well done, Mr. May, of Bedale, taking 1st in the class for nine large-flowered varieties, as also for six fancies, having amongst the former well bloomed specimens of Ruth, Lady of the Lake, Desdemona, and Purple Gem. Mr. May's best fancies were Delicatum, Sylvia, and Mrs. Hart. In the amateurs' class for six large flowered kinds Mr. Adams took 1st easily. He had, with others, the fiery coloured Prince Leopold. Zonales were extensively shown and neatly grown and flowered. For six Mr. R. Gardner, Dunston, was 1st with an even bloomed half dozen; Mr. Stockley, Elswick Park, a very close 2d, showing larger trussed varieties, such as Mrs. Turner, deep pink; Miss Blanche, and the semi-double Wonderful.

Roses.—These were largely exhibited, and for the middle of July in good condition. Forty-eight single blooms: Messrs. Cranston & Co., Hereford, stood out conspicuously with magnificent flowers of Beauty of Waltham, Marguerite de St. Amand, Horace Vernet, Monsieur François Michelon, and Senateur Vaisse; Mr. Prince, Oxford, 2d; and Messrs. Paul, the Old Nurseries, Cheshunt, 3d, both having fine blooms; Mr. H. May and Mr. J. Davison, Hereford; and others, also exhibited in this class. For thirty-six varieties the competition was equally numerous, Messrs. Cranston again taking 1st with a splendid lot of blooms, Messrs. Paul 2d, Mr. G. Davison 3d. Twelve Roses, any variety: Messrs. Cranston 1st, showing a dozen magnificent Alfred Colomb, fresh, full, and possessing a beautiful deep shade of colour; Mr. J. Davison 2d, Mr. Prince 3d. Twelve Tea Roses: Mr. Prince, 1st; the executors of the late J. Harrison, The Nurseries, Catterick Bridge, 2d. Twelve yellow Roses: 1st, the executors of the late J. Harrison. In the amateurs' class for twenty-four, the competitions were both numerous and close: 1st, Mr. E. R. Whitwell, Barton Hall; 2d, Mr. J. Burrell, Heighton, Darlington; 3d, Mr. Mayo, Oxford. Twelve: 1st, Mr. C. Laws, Pouteland.

The Table Decorations, for which liberal prizes were offered, were none of them well done, being too heavy, the flowers used in most cases too large and clumsily arranged; 1st, Mr. M. Thompson, gr. to L. Wood, Esq.; 2d, Messrs. J. Gellender & Sons, florists and fruiterers, Newcastle; 3d, Mr. Methven.

Fruit was not largely shown, but the greater portion good in quality. For six dishes, Mr. Jowsey, gr. to G. G. Brown, Esq., Sedbury Park, was 1st, with an even well finished collection; Mr. Service, Maxwell Town, Dumfries, 2d; Mr. Jowsey was also 1st for four dishes, as likewise for four varieties of Grapes. Two bunches black Grapes: 1st, Mr. T. Aitken, Kirkleatham Hall, Redcar. Two bunches white Grapes: 1st, Mr. J. Mavin. One Pine: 1st, Mr. J. Brown, gr. to E. Joicey, Esq., Whinney House, Gateshead. Six Peaches: 1st, Mr. J. Brogdon, gr. to Mrs. Morrison, Jesmond Park. Six Nectarines: 1st, Mr. J. R. Metcalfe, gr. to W. Hornby, Esq., Elsham House, Grantham. Mr. Jowsey had an extra award for one of the finest examples we have seen of Venn's Black Muscat Grape, which, whether distinct or not from Muscat Hamburgh, was, as shown here, a grand Grape. Mr. Witherspoon, Chester-le-Street, received an extra prize for fruit trees in pots, consisting of Grapes, Peaches, Nectarines, and Apples, creditably shown. Messrs. Veitch, Chelsea, had a very fine miscellaneous collection of plants, including Orchids, Nepenthes, Sarracenias, and ornamental-leaved subjects. Mr. J. Watson exhibited a very good assortment of coniferous and taxaceous trees in pots. From Mr. J. Thompson, Ravenside Nursery, came a miscellaneous collection of flowering and fine-leaved plants.

Redruth Horticultural: *July 16 and 17.*—This Society held its second annual exhibition on the above date. The weather was all that could be desired, and financially the show has left the Society in a very prosperous condition. The show was in every respect a great improvement on its predecessor, the exhibits being superior to those shown on the previous occasion, though it is still hoped that, with better prizes, an increased competition may ensue. The prizes offered now, however, are as good as at any other show in the country. Contrary to Cornish

exhibitions generally, everything shown was on this occasion for competition. It is too often the case that the competitive collections are conspicuous by their absence, owing to the reluctance of many of the gentry to compete with each other, while the non-competitive forms the staple of the shows, and of course removes that interest which would otherwise be felt. Among the most successful exhibitors are the names of W. H. Lean, Esq., Falmouth, (gr. Mr. Stuthridge), who showed some of the best plants in the exhibition; among them an Allamanda Hendersoni, large in size and well-flowered, by far the best flowering plant in the show; also a good Vinca rosea, some good Crotons and Palms. A. Lanyon, Esq. Redruth, (gr. Mr. Bowden), was also a very successful exhibitor, his twelve Ferns being very fine, while his white Grapes were a long way ahead of anything in this class. In the class for nurserymen, Mr. R. T. Veitch, of Exeter, figured very prominently. The local nurserymen also showed good collections of plants. Class 1 was for twelve stove and greenhouse plants, not specified as flowering or fine foliage, which of course left a great margin to exhibitors. There were three entries in this class, Mr. Lean taking the lead with six flowering and six foliage, the flowering section being the weaker part; but there were two very good plants, viz., the above-mentioned Allamanda Hendersoni and Vinca rosea. Among the foliage plants were Cissus discolor, Latania borbonica, and Areca lutescens, in good condition; Mr. Lanyon was 2d, his best plants being Clerodendron Thomsoni and Dracæna magnifica; Mr. Bickford 3d. Class 2: six plants of the same character.—Mr. Lean was awarded 1st, with a nice fresh lot, including a good plant of Clerodendron Thomsoni. Mr. Lanyon was a good 2d. Class 3: Twelve fine foliage plants.—Here Mr. Lean again asserted his supremacy, although it was a close run between him and Mr. Lanyon, whose plants were the fresher of the two, but not sufficiently so to counterbalance the size and quality of Mr. Lean's, who had Croton angustifolius and variegatus of good size and well coloured; also Corypha australis and a monster specimen of Pandanus utilis. Mr. Lanyon's best were Maranta tubispatha, Anthurium magnificum, and some good Dracænas, all fresh, medium-sized plants. In the class for twelve miscellaneous plants Mr. Pendarvis was 1st, Mr. Lanyon 2d. These were only of medium merit. There were two classes for Fuchsias, twelve and six. The six shown by Mr. Lean were very well done and did the grower credit, while the twelve were a very indifferent lot.

Exotic Ferns were quite a feature of the show. Mr. Lanyon took the lead with a capital group of twelve very creditable specimens, including a well-grown Adiantum farleyense, also a good Adiantum gracillimum, which were very much admired; Mr. Bickford taking 2d honours. There was also a class for six; here the Rev. W. W. Butlin and Mr. Lean were the competitors, taking the prizes in the order named. In the 1st prize lot was a specimen of Adiantum cuneatum about 5 feet across and very beautiful.

Class 18 was for a collection of plants shown by nurserymen. There were three competitors in this class. Mr. Veitch, of Exeter, took 1st prize with a valuable collection, among them a fine specimen of Cycas revoluta, the best foliage plant in the show; good plants of Alocasia Sedeni, Stephanotis floribunda, several Ericas, notably a fine plant of Erica pulcherrima; several nice plants of Cocos Weddelliana, a Phœnix reclinata, Dracænas ferrea, stricta, and Baptistii, two or three Orchids, including a good variety of Saccolabium ampullaceum; while a pan of Sarracenia purpurea came in for a share of attention. Mr. J. Nicholls, Redruth, also showed a very interesting lot of plants, small, but in capital health. To particularise them would be a task, as their number was legion. Mr. Smith, Redruth, also exhibited in this class a very well-grown lot of plants, such as Ferns, Fuchsias, Pelargoniums, &c.

In the cut flower department the Roses, as usual, seemed to attract most attention. Messrs. Curtis, Sandford, & Co., Torquay, carried off all the 1st prizes, with a fine lot of bloom, Mr. Smyth, St. Austell, taking 2d honours. In bouquets, both table and hand, Mr. Painter, Clowance, took the 1st prizes with a couple, very well arranged. The others were far below them in merit.

The fruit classes were not very strong. The 1st prize-dish of black Grapes were of medium size, and nicely coloured, G. L. Basset, Esq., Tehidy, being the exhibitor. Mr. Bowden, gr. to A. Lanyon, Esq., showed a beautiful dish of white Grapes, Buckland Sweetwater, in prime condition, and easily secured the 1st prize, the other exhibitors showing Muscat of Alexandria, fine in bunch and berry, but not ripe. There was a nice dish of Peaches shown, and several Melons, the best from Mr. Grose, gr., Trevince, first-rate in size and flavour.

In the cottagers' department there were some good fruits and vegetables shown, but the competition was confined to a very limited number. This is a department the society wishes to encourage, the few prizes offered being but the nucleus of a cottagers' show, which they intend to establish. *R. G.*

Luton Show: *July* 18.—This exhibition was held on the above date at Luton, and formed an important part of the annual meeting of the Bedfordshire Agricultural Society, which included a poultry exhibition also. All was under the care of a central committee with a special committee to carry out the details of each. One admittance fee franked the visitor to every part of the exhibition ground.

The opinion was generally entertained that the horticultural department was the best feature of the meeting. One very large circular tent accommodated the plants, the fruits, vegetables, and cut flowers, and the cottagers' produce filled two long tents of a roomy character. The huge plant house was too large for the size of the foliaged and stove and greenhouse plants grown round Luton; but Mr. Butters, the gardener at Luton Hoo Park, the residence of Mrs. Gerald Leigh, very kindly sent a number of Bays in tubs, several fine Palms, &c., and these proved of great value in furnishing the large space within the tent.

The leading class was for twelve stove and greenhouse plants in or out of flower, and these were grouped on a raised stage round the centre pole of the tent, where they formed an imposing feature, as they contained fine examples, especially in the way of foliaged plants. The exhibitors were Mr. C. Butters, Luton Hoo Park; Mr. J. Parker, nurseryman, Rugby; and Mr. J. Howse, Eastgate Nursery, Peterborough; and the prizes were awarded in the order of the names given. Mr. Butters' fine collection included Allamanda Schottii, Clerodendron Balfourianum, Kalosanthes coccinea, Begonia weltoniensis, finely grown; Gleichenia speluncæ, a huge Cyathea princeps, of splendid proportions; Croton angustifolius, C. pictus, Pandanus Veitchii, Cycas revoluta, Areca robusta, and Dracæna Baptistii. The flowering plants were past their best, but any defects in this respect were amply compensated for by the fine character of the foliaged plants. The remaining collections were pretty well balanced, but the freshness of Mr. Parker's plants give him the advantage over his rival, Mr. Howse. In the class for eight stove and greenhouse plants Mr. Butters, the only exhibitor, staged a capital group. He was also 1st with six fine-foliaged and variegated plants, and also with six stove and greenhouse Ferns. With six fine-foliaged plants Mr. Hedley, gr. to Colonel Sowerby, Putteridgebury, was 2d; and in the class for nine exotic Ferns the 2d prize went to Mr. J. Freeman, gr. to Sir J. G. S. Sebright, Bart., Beechwood, Herts.

Foliaged plants, such as what are usually shown under this heading, Ferns, Caladiums, &c., were plentiful enough, but it was remarkable that in the leading classes for Fuchsias, the various sections of Pelargoniums, Lilies, &c., there were no entries. This greatly interfered with an effective arrangement in the large tent, and with the exception of the stove and greenhouse plants in flower the only colour to give life to the green foliage of the plants was that supplied by Crotons, &c. Balsams were fairly well shown, and there were some nice Cockscombs, but nothing else in the way of flowering plants.

Messrs. Veitch & Sons, Exotic Nurseries, Chelsea, Mr. B. S. Williams, Victoria Nursery, Holloway, and Mr. John Wills, Onslow Crescent, South Kensington, sent to Luton large and varied collections of new and rare plants, that supplied much to delight and fill with wonder the country people who swarmed to see them. Messrs. Lane & Son, Berkhampstead, sent six large Vines in fruit in pots, and these appeared to be a veritable surprise to the Luton people.

In the open class for seventy-two cut Roses, Messrs. Paul & Son, Old Nurseries, Cheshunt, were 1st; Messrs. W. Paul & Son, Waltham Cross, 2d; and Messrs. E. P. Francis & Son, Hertford, 3d. Notwithstanding the hot weather some fine blooms were staged. In the other classes some good blooms were shown, the season considered. There were also collections of cut flowers of stove and greenhouse plants and a few other things, supplemented by fine collections of cut Roses sent from their Ealing nurseries by Messrs. C. Lee & Son, and from Messrs. W. Paul & Son.

The collections of wild flowers botanically arranged were an interesting feature. There were five competitors, the 1st prize being taken by Mr. J. Saunders, of Luton, who had 160 species, all gathered with but one exception within a radius of 12 miles from Luton. They were scientifically arranged in their classes and natural orders. The 2d prize was awarded to Miss H. Paybody, Luton, who had 160 species, and the third to Miss D. M. Higgins, Luton, with a collection of about 140 species. A collection sent by John Edge, one of the under gardeners at Luton Hoo Gardens, was highly commended.

The best collection of eight dishes of fruit, as also that of twelve distinct kinds of vegetables, came from Mr. Geo. Sage, gr. to Earl Brownlow, Ashridge, Herts. Mr. John Day, Norton, near Daventry, was 2d, with a collection of fruit, and Mr. Norman, Hatfield Gardens, 3d. The 2d prize for vegetables went to Mr. G. Robinson, gr. to F. Howard, Esq., Abbey Close, Bedford, and the 3d to Mr. J. Freeman, Beechwood Gardens. There were many other classes for vegetables and fruits, but space will not admit of their being detailed.

Woodford Horticultural: *July* 17. — This delightful suburban show was held in the beautiful grounds of Monkhams, by the kind permission of Henry Ford Barclay, Esq. One huge tent comprised the main part of the exhibition, attached to which centrally on either side were two ante or small tents, containing on the one side vegetables and wild flowers, and on the other the gratuitous exhibits made by some of our leading nurserymen and others.

Passing rapidly through the tents we observed that fruit was excellent, more especially the small fruits in season. For collection of Palms, W. Mellis, Esq. (Mr. McNie, gr.), was a good 1st, and Mr. Grove, gr. to E. N. Buxton, Esq., was 2d. For six plants in bloom, &c., open, Mr. Monk won the 1st prize with neat young plants. Exotic Ferns, though small, were neatly shown, Mr. Pearce being 1st. Foliage plants were well staged by Mr. McNie. Mr. Grove was 1st with neat Lycopods. For single plants Mr. Simmons and Mr. Grove had the best Gloxinias, and Mr. Nott and Mr. Simmons Achimenes. Mr. Fisher was placed an equal 1st with a good Cattleya crispa, and a splendid plant of Lilium auratum respectively. Hanging baskets and Verbenas were also best shown by Mr. Simmons. With baskets of pot plants Messrs. J. Rumbel & Grove had the best, and six dinner-table plants were admirably staged by Messrs. McNie, Rumbel & Grove. With collections of plants arranged for effect, Messrs. Monk & Simmons were an admirable 1st and 2d. Amongst the fruits we noted that the best Grapes were shown by Messrs. Simmons, Grove, Kennard, and Searing; Peaches, by Mr. Beadle; Nectarines, Mr. Kennard; Melons, Mr. Searing; and for vegetables, Mr. Darvel. The Messrs. Wm. Paul & Son staged some excellent Roses. Mr. Rumsey showed Roses in admirable trim; Messrs. Daniels Bros., Norwich, being strong in Phloxes, Tropæolums, Pelargoniums, &c.; they also staged an excellent dish of Old King Noble Potatos. An immense collection of garden implements was arranged around. The company was numerous, and much credit is due to Mr. Taylor, the secretary, and the committee, who so ably carried out the arrangements. *W. E.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JULY 24, 1878.

MONTH AND DAY	BAROMETER: Mean Reading Reduced to Sea-level	BAROMETER: Departure from Average of 18 years.	TEMPERATURE OF THE AIR: Highest	TEMPERATURE OF THE AIR: Lowest	TEMPERATURE OF THE AIR: Range	TEMPERATURE OF THE AIR: Mean for Day	TEMPERATURE OF THE AIR: Departure of Mean from Average of 18 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Degree of Saturation 100	WIND. Average Direction.	RAINFALL
July	In.	In.	°	°	°	°	°	°	°		In.
18	30.14	+0.04	84.5	60.7	23.8	70.3	+7.7	61.4	73	NNE N.	0.00
19	30.06	+0.26	87.5	63.3	24.2	72.7	+10.2	61.2	67	N.E.: E.: E.S.E.	0.00
20	29.93	+0.14	84.1	58.8	25.3	69.2	+6.8	59.1	71	E.S.E.: S.E.	0.00
21	29.81	+0.02	82.2	61.0	21.2	70.1	+7.8	63.4	79	E.N.E.	0.00
22	29.83	+0.05	80.8	59.2	21.6	67.9	+5.6	63.2	84	E.S.E. E.N.E.	0.05
23	29.75	−0.02	74.5	56.0	17.6	63.2	+1.0	59.1	87	E.N.E.	0.00
24	29.52	−0.25	74.0	59.0	15.0	65.0	+2.8	62.8	92	S.E.: E.N.E.	0.07
Mean	29.86	+0.08	81.1	59.8	21.3	68.3	+6.0	61.5	79	E.	sum 0.12

July 18.—A fine warm day, partially cloudy. Cloudless at night.
— 19.—A very fine, clear, hot day. Gentle breeze.
— 20.—A fine, bright, hot day. Strong breeze.
— 21.—A very fine hot day. Partially cloudy
— 22.—Fine, but frequently dull. Warm and partially cloudy. Distant thunder heard at noon; smart shower of rain at 1 P.M.
— 23.—A fine day. Warm. Dull in morning. Frequent thunder heard in evening. Vivid flash of lightning seen at 8.15 P.M.
— 24.—Dull and showery in morning, then fine till 6 P.M. Distant thunder and frequent showers of rain between 6 and 7 P.M. Fine after. Cloudless at night.

LONDON: *Barometer.*—During the week ending Saturday, July 20, in the vicinity of London the reading of the barometer at the level of the sea increased from 30.04 inches at the beginning of the week to 30.35 inches by the morning of the 18th, and decreased to 30.09 inches by the end of the week. The mean reading for the week at sea level was 30.22 inches, being 0.25 inch above that of the preceding week, and 0.24 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 87½° on the 19th to 70° on the 15th; the mean value for the week was 79¼°. The lowest temperatures of the air observed by night varied from 52° on the 16th, to 63¼° on the 19th; the mean value for the week was 56½°. The mean daily range of temperature in the week was 22¾°, the least range in the day being 15¾° on the 15th, and the greatest, 27½°, on the 17th.

The mean daily temperatures of the air, and the departures from their respective averages, were as follows:—July 14th, 60°.7, — 1°.9; 15th, 60°.3, — 2°.4; 16th, 62°, — 0°.7; 17th, 66°.2, + 3°.5; 18th, 70°.3, + 7°.7; 19th, 72°.7, + 10°.2; 20th, 69°.2, + 6°.8. The mean temperature of the air for the week was 65°.9 being 3°.5 above the average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 157° on the 19th, 156½° on the 20th, and 141½° on the 18th; on the 15th the reading did not rise above 100°. The lowest readings of a thermometer on grass with its bulb exposed to the sky were 41½° on the 16th, and 42¾° on the 14th; the mean of the seven low readings was 48¼°.

Wind.—The direction of the wind was North, and its strength gentle. The weather during the week was generally fine, dry, and warm. No rain fell.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 90° at Sunderland, 89½° at Bradford, 89° at Eccles, 88½° at Cambridge, and 87½° at Blackheath; the highest temperature of the air at Liverpool was 76¾°, and at Portsmouth 79°; the mean value from all stations was 84¾°. The lowest temperatures of the air observed by night were 46¾° at Brtstol, 47½° at Cambridge, 48° at Hull, and 49° at Truro and Nottingham; the lowest temperature of the air at Liverpool was 56½°, and at Leeds was 56°; the mean value from all stations was 52°. The range of temperature in the week was the greatest at Cambridge, 41½°, and the least at Liverpool, 20½°; the mean range of temperature from all stations was 32¾°.

The mean of the seven high day temperatures was the highest at Cambridge, 80½°, Bristol, 80°, and Blackheath, Leeds, and Sunderland all about 79¼°; and the lowest at Liverpool, 68½°, and Wolverhampton, 71½°; the mean from all stations was 76¾°. The mean of the seven low night temperatures was the lowest at Cambridge and Nottingham, both about 53¼°, and Bristol, 53¾°; and the highest at Portsmouth, 60¾°, and Sunderland 60½°; the general mean from all stations was 57°. The mean daily range of temperature was the least at Liverpool, 9¾°, and the greatest at Cambridge, 27½°; the mean daily range from all stations was 19¾°.

The mean temperature of the air for the week from all stations was 65°, being 7¾° higher than the value for the corresponding week in 1877. The highest were 68° at Sunderland and 67¼° at Leeds, and the lowest were 61¾° at Wolverhampton and 62° at Liverpool.

Rain.—The weather during the week was fine, warm, and very dry. At Eccles 0.02 inch of rain fell, and at Liverpool 0.01 inch fell; at all other places no rain fell.

The mean temperature of the air for the week at Sunderland was no less than 11¼° higher than the value for the corresponding week last year.

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 85° at Dundee to 71¼° at Greenock; the mean from all stations was 78¾°. The lowest temperatures of the air varied from 45° at Dundee to 54° at Paisley; the mean value from all stations was 50¾°. The mean range of temperature from all stations was 28¼°.

The mean temperature of the air for the week from all stations was 63¾°, being 6¼° higher than the value for the corresponding week in 1877. The highest was 66° at Dundee, and the lowest 60° at Greenock.

Rain.—The amount of rain measured at Greenock was 0.05 inch, and at Aberdeen, 0.02; at Glasgow, Edinburgh, Dundee, Paisley, and Leith, no rain fell; the average fall over the country was but 0.01 inch.

DUBLIN.—The highest temperature was 79°, the lowest 52¾°, the range 26¼°, the mean 66°, and the fall of rain 0.01 inch.

JAMES GLAISHER.

Variorum.

SHUT YOUR OWN GATE BEHIND YOU.—A week or two devoted to going among others engaged in similar pursuits—and this need not, of necessity, be very far from home—will give one a freshening up that will be worth more than all it costs, and the good influences of which will last all the year. To all who make use of the comparative leisure of midsummer to visit the orchards, gardens, and ground of others, we (*American Agriculturist*) have one bit of advice to give:—"Shut your own gate behind you!" When you leave your garden, fruit patch, or grounds, of whatever kind, shut the gate, and leave whatever is behind it there—don't take it with you. Recollect when you visit the place of another you go to see what he has to show, and learn what he has to teach. If you would be a welcome visitor, and be dismissed with a pressing invitation to come again, place yourself in a receptive mood; be for the time the attentive pupil and not the teacher. When others visit your place, will be the proper time to teach. Of all the intolerable bores who visit us is the man who brings his own place with him, and who, whatever may be shown him, at once institutes a comparison with his own, and at once begins to tell that "mine are much better than that,"—"I can beat you on so and so," and, ignoring the thing before him tells us, "Ah, you should see my Strawberries," "my Roses," "my Tomatos," and so on all through—in short, the man who did not "shut his own gate behind him." Those who are so thoroughly satisfied with their own that they cannot forget it for a few hours, should not visit, but remain upon the scene of their remarkable achievements—at home. We would not imply that one in visiting the grounds of another may not, on occasion, drop a useful hint drawn from his own experience, or that he may not give his host any information that he may ask for. But we have been so annoyed at receiving visitors, and worse still, in visiting strange grounds in company with those whose only object in visiting appears to be to boast of their own affairs, that we feel called upon to protest again it. Those who thoughtlessly fall into this unpleasant error need only to be reminded of it, and they will sensibly avoid it. From the chronic boaster of his own achievements we hope to be delivered.

Enquiries.

He that questioneth much shall learn much.—BACON.

THE MEXICAN TORCH THISTLE.—Will some of your numerous correspondents kindly say where plants or seeds of the so-called Mexican Torch Thistle are to be had? The botanical name of the plant is Erythrolæna conspicua. It is a grand thing, and some years ago was not uncommon, but appears, unaccountably, to have got out of fashion. *Christopher Musgrove, Edmonton.*

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

BEES AND BIRDS: *J. N.* We believe the bees have been decapitated by some insect-eating bird, not by the honey-bee.

CARNATIONS AND PICOTEES: *A Novice.* The flaked flowers are Carnations; those with a white ground and coloured edges Picotees. The florists divide the Carnation into six sections, which they place in the following order:—Scarlet bizarres, crimson bizarres, pink and purple bizarres, purple flakes, scarlet flakes, and rose flakes. The tri-coloured flowers are bizarres, the flaked flowers those with one colour on a white ground. The colour in a Picotee should be disposed round the margin of the petals, the pure white ground being free from spot or bar. The "edges" are described as heavy, medium, and light. The red-edged flowers are the most highly favoured, the purple-edged varieties standing second, and rose and scarlet edges third.

CLEMATIS: *Old Sub.* Star of India is the best of the Jackmanni type that we know of, blooming at the present time. Most of the plants that we have seen during the last week or two, have been perfect sheets of purple.

CLIMBING ROSE: *J. H.* You will find Jaune Desprez, a strong, vigorous growing, and free flowering variety, of a light colour.

DOUBLE PRIMULAS: *Y. Z.* These are propagated by taking off the side shoots and inserting them as cuttings singly in small pots in a sandy compost, keeping them in a close frame or pit till rooted, and being very careful not to over-water. If the plants have no side-shoots you must destroy the centre carefully, and wait for them. Many strains of Primula, however, bring a good proportion of doubles from seeds.

GRAPES: *See and Say Nothing.* The Grapes sent were what is termed "shanked," and the entire method of treatment described by you as that practised by your superior tends to such results.

INSECTS: *A Constant Reader.* The Wood Leopard Moth, Zeuzera æsculi.

NAMES OF PLANTS: *D. M.* Send better specimens and not withered scraps, and please remember, if fresh when sent, they are shrivelled when received if not well packed.—*G. S. 1*, Echium violaceum; 2, Œnothera serotina; 3, Ruscus hypophyllum var. hypoglossum; 4, Cotoneaster acuminata; 5, probably Azara celastrina, but too imperfect to be certain.—*W. H. B.* Calliphruria subedentata.—*Inverness.* 1, Diplacus glutinosus; 2, Arauja albens; 3, Calathea sp.—*W. E.* Acacia retinoides.—*K. and F.* 1, Poa compressa; 2, Festuca duriuscula; 3, Bromus racemosus var. without awns. Could you oblige us with a few good specimens, with locality, for the herbarium? 4, Festuca elatior; 5, Brachypodium sylvaticum; 6, Eleocharis palustris.—*Mary Andrews.* Funkia ovata. *E. Moore.* Oncidium planilabre.—*J. H. G.* Pteris hastata macrophylla.—*J. Scott.* It is the common Gladwyn Iris fœtidissima. The seed pods have been sold in the markets in winter under the name of Wagga-Wagga Holly.—*X. Z.* 1, Blechnum occidentale, probably, but not mature enough; 2, Adiantum assimile; 3, Onychium japonicum; 4, Adiantum affine; 5 and 6 are varieties of Coleus which we cannot attempt to name from such materials.—*E. G. H.* 1, Diplacus (or Mimulus) glutinosus; 2, Salvia Grahami; 3, Probably Dietes (or Moræa) iridioides, but the flowers had perished long before the specimens reached us, being very fugacious.—*Dr. Morton.* One of the Funkias, probably F. ovata.—*J. H. Cylas.* 4, Stenactis speciosa; 5, Cineraria maritima; 6, Begonia Sutherlandii; 7, Veronica salicifolia; 8, Chrysanthemum segetum; 9, Achillea Ageratum.

PELARGONIUM CORSAIR: *X. O.* It is decidedly one of the best bedding Zonal varieties that Mr. Pearson sent out, a neat habited plant with fine solid-looking trusses of scarlet blossoms. Wherever we have seen it this season it has always been good.

PETUNIAS: *J. Gill.* A fine strain. Some of the double-flowered varieties are especially attractive. Those named Exquisite, D, and Bride, all light colours, are more to our taste. Mrs. Gill, somewhat darker; and F, a fringed purple, are also showy sorts. Perhaps for quality E is the best flower, fringed petals, very full, large, the colour a deep lilac prettily veined. This and Exquisite are very fine.

RAGGED KALE: *C. R. Freeman.* The leaves are remarkable for the mossy outgrowth from the upper surface. These outgrowths take various forms, but we do not think yours are more developed than others we see in cultivation. The colours are not as yet very telling for decorative uses.

TO DRY LEAVES AND FLOWERS: *Young Gardener.* Get some old newspapers; lay them together in packets of six or eight pages; on the top place your specimens, which cover with an equal number of pages; then put some more specimens on the pile, and cover as before. On the top of all place a flat board, with a brick or other heavy weight. Change the papers every twenty-four hours for the first two or three days, taking away the damp sheets and replacing them by dry. The necessity to change the sheets, and the time required to dry the plants, depend on the nature of the plants, &c.

TREATMENT OF GRAPES: *H. C.* 1. If the Grapes are approaching maturity, there was nothing injudicious in the proceeding. 2. Quite right so far as we can judge without knowing all the circumstances.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

COMMUNICATIONS RECEIVED.—D. T. F.—W. B.—Sir T. L.—J. V. & S.—S. J.—J. T.—One of the Committee (you have not complied with our rules, by sending your name and address)—Amateur.—T. King.—R. G. (many thanks).—J. S.—T. W. R. (No, as in that case it would be an advertisement).—J. G. B.—H. W. Sargent.—H. & B.—G. H. W. H. F.—G. M.—Marquis Corsi Salviati.—H. N. E.—Rutherglen.—E. C. C.—M. V.—L. P.—A. J. B.—W. W. S.—C. J. H.

Markets.

COVENT GARDEN, July 25.

The supply of soft fruit has sensibly diminished the last few days, and prices are somewhat higher. The demand for hothouse fruit is not so brisk. Peaches more particularly realising lower figures. Pines still in demand. Vegetables plentiful and good. Trade quieter.

PLANTS IN POTS.

	s. d.	s. d.
Begonias, per doz.	6	0–12 0
Bouvardias, do	12	0–24 0
Calceolarias, p. doz.	4	0–12 0
Campanula, per doz.	6	0–12 0
Coleus, per dozen	3	0– 9 0
Crassula, per dozen	9	0–24 0
Cyperus, do	6	0–12 0
Dracæna terminalis	30	0–60 0
— viridis, per doz.	18	0–24 0
Euonymus, var., doz.	6	0–24 0
Ferns, in var., doz.	4	0–18 0
Ficus elastica, each	2	6–15 0
Foliage Plants, various, each	2	0–10 6
Fuchsias, per dozen	4	0–18 0
Hydrangea, per doz.	9	0–18 0
Mignonette, per doz.	3	0– 9 0
Musk, per dozen	3	0– 6 0
Myrtles, per doz.	6	0–12 0
Palms in variety, each	2	6–21 0
Pelargoniums, per dozen	6	0–24 0
— scarlets, zonal, per dozen	2	6– 9 0
Petunias, per dozen	4	0–12 0
Rhodanthes, p. doz.	6	0–12 0
— Fairy, per doz.	9	0–12 0

CUT FLOWERS.

	s. d.	s. d.
Abutilon, 12 blooms	0	6– 1 0
Bouvardias, per bun.	1	0– 4 0
Calceolaria, 12 bun.	9	0–18 0
Carnations, 12 bunch.	4	0–12 0
Cornflower, 12 bun...	3	0– 6 0
Eschscholtzia, 12 bun	1	0– 2 0
Eucharis, per doz.	4	0–12 0
Gardenias, 12 blms.	3	0– 9 0
Gladioli, various, 12 spikes	1	0– 4 0
Heliotropes, 12 sp.	0	6– 1 0
Jasmine, 12 bunches	4	0– 9 0
Mignonette, 12 bun.	3	0– 6 0
Myosotis, 12 bun.	3	0– 6 0
Pinks, var., 12 bun.	4	0– 9 0
Primula, double, per bunch	1	0– 2 0
Pyrethrum, 12 bun.	3	0– 6 0
Roses (indoor), doz.	1	6–12 0
— (outdoor), 12 bun.	4	0–12 0
Stephanotis, 12 sp.	3	0– 9 0
Stocks, 12 bunches	4	0– 9 0
Sweet Peas, 12 bun.	2	0– 6 0
Sweet Sultan, 12 bun.	6	0– 9 0
Tropæolum, 12 bun.	1	0– 4 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per dozen	1 6-	3 0	Oranges, per 100	6 0-	12 0
Figs, per dozen	1 6-	6 0	Peaches, per dozen	4 0-	12 0
Grapes, per lb.	1 0-	6 0	Pine-apples, per lb.	2 0-	8 0
Lemons, per 100	4 0-	12 0	Strawberries, per lb.	0 6-	3 0
Melons, each	3 0-	8 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0-	4 0	Herbs, per bunch	0 2-	0 4
Aubergines, p. doz.	3 0-	..	Horse Radish, p. bun.	4 0-	..
Beans, French, per lb.	0 4-	0 6	Lettuces, Cos, Eng., per score	1 6-	2 6
— broad, per bush.	3 0-	..	Mint, green bunch	0 4-	0 6
Beet, per doz.	1 0-	2 0	Onions, young, bun.	0 4-	0 6
Cabbages, per doz.	1 0-	2 0	Parsley, per bunch	0 4-	..
Carrots, per bunch	0 4-	0 6	Peas, green, per qr.	1 6-	2 0
Cauliflowers, per doz.	4 0-	6 0	Radishes, per bunch	0 1-	0 3
Celery, per bundle	1 6-	2 0	— Spanish, doz.	1 0-	..
Chilis, per 100	5 0-	..	— New Jersey, doz.	2 0-	..
Cucumbers, each	0 4-	1 6	Shallots, per lb	0 6-	..
Endive, per doz.	1 0-	2 0	Spinach, per bushel	2 0-	3 0
Endive, Batav. dozen	1 6-	..	Tomatos, per dozen	2 6-	3 0
Garlic, per lb.	0 6-	..	Turnips, new, p. bun.	0 6-	..
			Vegt. Marrows, doz.	6 0-	..

Potatos;—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

SEEDS.

LONDON: *July* 24.—No change of importance has occurred this week in the value of any kind of agricultural seeds. The article most in request has been Trifolium incarnatum, which has readily found buyers for export to France; for the moment, owing to the French demand, the tendency of quotations is upwards. The domestic inquiry for this article is at present very meagre: as to the quantity, whether great or small, which will be wanted later on for home consumption, it is difficult, as yet, to form any opinion: a great deal will, of course, depend on the weather. Of new Essex Rape seed there is a good supply at market; the quality is satisfactory and prices are moderate. For white Mustard the sale continues slow. With regard to Clover seed the market is without life, but values keep exceedingly firm; and it now appears probable that the quantity supposed to be remaining in the hands of farmers in Canada and also in the United States has been largely over-estimated. In Trefoil there is nothing yet doing; the supply of new English increases week by week. There is no alteration in the rates for either Hemp or Canary Seed. Feeding Linseed keeps very steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was very quiet, and no material change took place in prices. As regards foreign Wheat rates were rather well supported. English Wheat was altogether nominal. Barley had a dull and drooping market, and little different can be said as regards Malt, Oats, Maize, and the other descriptions of produce, although in the absence of business no alteration was reported.—On Wednesday trade was dull and prices not very well supported. Of English Wheat the supply was short, and the small amount of business done was at some reduction from the prices of last week. Foreign Wheat, the supply of which was liberal, changed hands at an occasional decline. Barley, Oats, and the other descriptions of produce tended downwards, but there was no disposition to force sales.—Average prices of corn for the week ending July 20:—Wheat, 44*s.* 5*d.*; Barley, 35*s.*; Oats, 27*s.* 6*d.* For the corresponding period last year:—Wheat, 63*s.*; Barley, 32*s.* 5*d.*; Oats, 28*s.*

CATTLE.

At Copenhagen Fields on Monday, although there was a much shorter supply of beasts than on the previous Monday, trade being dull, the top price of that day was scarcely reached. The number of sheep was about the same as last week, but the demand was not so good; prices on the average were lower. There was a fair demand for lambs; our top quotations were exceeded in a few instances. No alteration was noted in trade for calves. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.* 4*d.*; lambs, 7*s.* to 8*s.*; pigs, 3*s.* 8*d.* to 4*s.* 8*d.*—On Thursday supplies were tolerably good, amongst the beasts being a fair lot of Americans. Prime qualities both of beasts and sheep were in demand, and realised steady prices, otherwise trade was quiet. Lambs were better, and calves sold at about late rates.

POTATOS.

The Borough and Spitalfields market reports state that there are moderate supplies, and for the better class of Potato trade may be reported steady. The following are the prices:—English kidneys, 120*s.* to 140*s.*; Regents, 110*s.* to 140*s.*; Shaws, 80*s.* to 110*s.*; Jersey kidneys, 130*s.* to 150*s.*; Cherbourg ditto, 120*s.* to 150*s.*—The imports are still very moderate. During last week 153 packages were landed at London from Boulogne, 96 bales from Dunkirk, 350 bags from Rotterdam.

COALS.

Business at market on Monday was quiet, at previous quotations. On Wednesday the demand was small for all descriptions, and prices showed no change. Bower's West Hartley, 15*s.* 3*d.*; East Wylam, 16*s.*; Walls End—Hawthorns, 15*s.* 6*d.*; Walls End Original Hartlepool, 17*s.*—Ships at market, 18; sold, 4; contracts, gas, &c., 11—15; unsold, 3; at sea, 5.

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Can be worked by a Lady.		
To cut 8 inches		2 10 0
Can be worked by a Lady.		
To cut 10 inches		3 10 0
Can be worked by a strong Youth.		
To cut 12 inches		4 10 0
Can be worked by a Man.		
To cut 14 inches		5 10 0
Can be worked by a Man.		
To cut 16 inches		6 10 0
This can be worked by one Man on an even lawn.		
To cut 18 inches		7 10 0
Can be worked by Man and Boy.		
To cut 20 inches		8 0 0
Can be worked by Man and Boy.		
To cut 22 inches		8 10 0
If made stronger, suitable for Donkey, 30*s.* extra.		
To cut 24 inches		9 0 0
If made stronger, suitable for Donkey, 30*s.* extra.		

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The superiority of our Machines over those of all other makers is universally acknowledged. They will Cut either Long or Short Grass, Bents, &c., wet or dry.

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BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 5*s.* 6*d.* per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21*s.* per ton.

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4 bushel bags 4d. each.

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TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards 20*s.*

NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowl, 2 yards wide, 6*d.* per yard; 4 yards wide, 12*s.* per yard; ¾-inch mesh, 4 yards wide, 12*s.* 6*d.* per yard.

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It is most economically applied with a Vaporiser, price 2s.

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Agents :—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Duck Radclyffe & Co., 128, High Holborn, W.C.; W. Cutbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Balmoral; Derking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, F. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, T. Jackson & Son; Beverley, G. Swailes; Waverley, J. Dewar & Co., Newcastle-on-Tyne J. Thompson; Worksop, T. Ma ris.

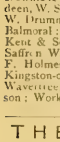
Agents wanted in every district.

THE "CHATSWORTH"
VAPORISING FUMIGATOR.

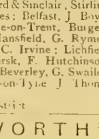
(J. S. Ellis' Patent, No. 1395)

KILLS THRIPS, KILLS MEALY BUG, KILLS RED-SPIDER, KILLS SCALE, &c.

Price 37s. 6d.



This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective mode of ridding them of that enemy to Cultivation, *Fifth*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation; *for it is self acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Plants or Flowers.*



Testimonial from Mr. Speed,

Gardener to His Grace the Duke of Devonshire, Chatsworth.

"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Spunks, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug and most Scale, is a thing to be remembered.

"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being vaporised before passing into the house make it quite safe to be left until the combustion is finished.

"THOMAS SPEED,

"The Gardens, Chatsworth, October 9, 1877

"Mr. Ellis, Norfolk Foundry, Sheffield."

Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

KREPIN.—A new patented liquid for Garden, Field, House, and Stable use, for the immediate destruction of all kinds of Insects, Eggs, Larvæ, without injury to Plants, Fruits, or Animals. Approved of and recommended by the German Ministry of Agriculture, and other high authorities on the Continent.

Sold in Bottles at 1s. 6d., 2s. 6d., and 10s. each. Extra for Vaporisers, 1s. 3d. and 3s. 6d. May be obtained through all respectable Nurserymen and Seedsmen. Chief Depôt—

H. AND F. BONTEN, 116, Queen Victoria Street, E.C.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.

Sold Retail by Seedsmen in Boxes, 1s., 2s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

IRON ROOFS for SALE, Cheap.—Several Iron-framed Roofs, from 20 feet to 40 feet span (not curved, no skilled labour required in fixing), covered with galvanised corrugated Iron. Apply

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Greenhouses.

H. FREEMAN AND SONS, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 42 feet long, 13 feet wide, £50; 21 feet by 13 feet, £28; 12½ feet by 10 feet, £15 Estimates given in wood or iron.

SIR JOSEPH PAXTON'S HOTHOUSES FOR THE MILLION

ARE CHEAP, PORTABLE AND LASTING.

Send for the Shilling Handbook (of sixty pages), fully describing above, with twenty-eight Illustrations, Plans of Heating, &c., and Directions for Vine and Fruit Tree Culture, by a Practical Gardener.

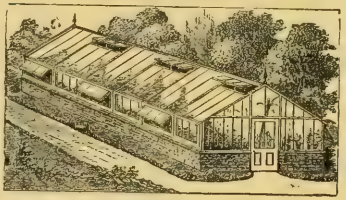
A smaller Pamphlet, with views, testimonials, &c., 3d., post-free. Carriage-paid Priced LISTS gratis.

Estimates given for any kind of structure in Wood and Glass, also for Heating Apparatus.

Glass Boundaries and Winter Gardens arranged.

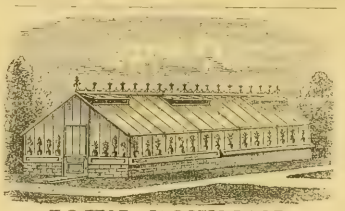
HEREMAN AND MORTON, 2, Gloucester Street, Regent's Park, London, N.W.

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Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS	Each
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Portable Box with One Light, 6 feet by 4 feet, glazed good 16-oz sheet glass, painted four coats, and packed ready for use	35 0
Portable Box with Two Lights, as above, each light 6 feet by 4 feet	65 0
LIGHTS ONLY.	
3 feet by 4 feet light, not painted nor glazed	3 6
Ditto glazed, good 16-oz sheet glass, and painted 4 coats	10 6
6 feet by 4 feet, not painted nor glazed	6 0
Ditto glazed and painted	16 0



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Timber and Mahogany Importer and Merchant,

HORTICULTURAL BUILDER,

WEST END STEAM JOINERY,

NEWCASTLE-ON-TYNE.

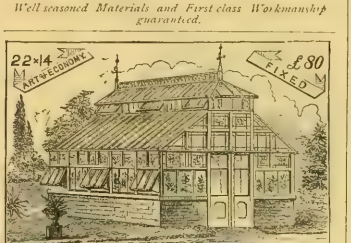
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PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } 35s.

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Estimates given for Conservatories and Greenhouses of every kind.

Well seasoned Materials and First class Workmanship guaranteed.



BECKETT BROS.,

HORTICULTURAL BUILDERS AND HOT-WATER ENGINEERS.

Patentees & Manufacturers of the Self-adjusting Throttle Valve, now so much in use for Horticultural purposes.

See Illustrated CATALOGUE, Two Stamps.

Designs and Estimates on application.

WORKS: ANCHOR STREET, CHELMSFORD.

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HORTICULTURAL WARMING ENGINEERS VENTILATING & SANITARY



NEW CATALOGUE

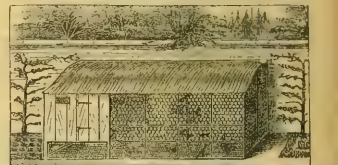
Of CONSERVATORIES and GREENHOUSES in Wood and Iron, architecturally treated and designed expressly for this work. Post-free 1s.

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BOULTON & PAUL, NORWICH.

NEW PORTABLE LEAN-TO POULTRY HOUSE.



The Night House is made of wood, painted green outside and lime-whited inside, with run underneath for shade and shelter; new O.G.-shaped galvanised roof, which is very ornamental, and affords good ventilation; fitted with shifting perches, sliding window, large door and lock for attendant, small door for fowls, and hen ladder, no nest boxes. Strong galvanised Wire Run, with corrugated iron roof, door, and lock, and all necessary bolts and nuts complete.

Prices - Carriage paid to any railway station in England:

1st size, No 7, with run complete, 12 feet long, 4 feet wide £7 5 0

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Illustrated Catalogue can be had on application.

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BUNYARD'S NETTINGS,

for Garden use: 2 yards wide 2d., and 4 yards wide 4d. per yard.

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36 inches 4d., and 72 inches 6d. per yard; ditto Cotton, 60 inches, 4d., 5d., and 8d. per yard.

BUNYARD'S LAWN TENNIS NETS,

White and Tanned.

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Ready in Stock.

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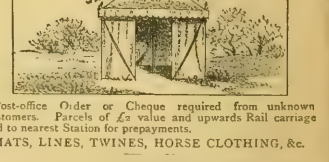
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Square, Round, French Canopy, and all other Shapes in Stock.

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Are the Cheapest and Best.



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Protect Fruit Trees from Frost and Birds.

B. EDDY AND CO., Torleven Works, Porthleven, Cornwall. — New GARDEN NETTING, 4 yards wide, 6d., 7d., and 8d. per yard run. Repaired FISHING NET, 4 yards wide, 3d., 4d., 5d., and 6d. per yard run. HORTICULTURAL SHADING, good protection against frost. FISHING, PHEASANT, PARTRIDGE, and RABBIT NETTING. Samples and prices on application.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.



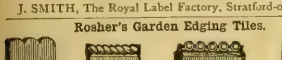
The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The Gardeners' Magazine says :—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price Lists free.

J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design

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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.

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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

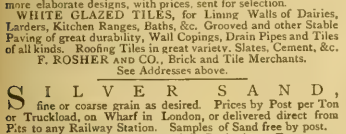
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KENT PEATS or LOAM supplied at lowest rates in any quantities

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N.B.—Orders promptly executed by Rail or to Wharves.

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GREAT VARIETY.

Garden Seats, Awnings and Tents, Rustic Tables, Chairs, and Flower Stands, Lawn Mowers, Garden Rollers, Water Barrows, Wheelbarrows, Garden Tools, Fancy Wirework, Birdcages, Hammocks, and all kinds of Garden Furniture at lowest marked prices. *Catalogues post free.*

THE PANKLIBANON, 56, BAKER STREET, W.

GREEN'S PATENT GRASS EDGE CLIPPER,

Specially Designed for

Cutting the Overhanging Grass on the Edges of Walks, Borders, Flower Beds, &c.

It is simple in construction, is easily worked, and reduces labour immensely.



Size—8 inches wide, with roller 9 inches diameter, £1 10*s.*

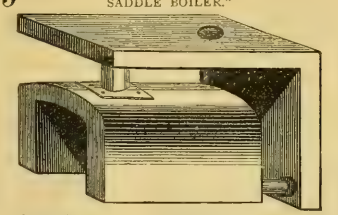
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THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS;

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

JONES'S PATENT "DOUBLE L" SADDLE BOILER."



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ *s.* *d.*
20 in.	18 in.	13 in.	3 0	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1000	16 0 0
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28 ,,	28 ,,	60 ,,	1200	25 0 0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873:*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

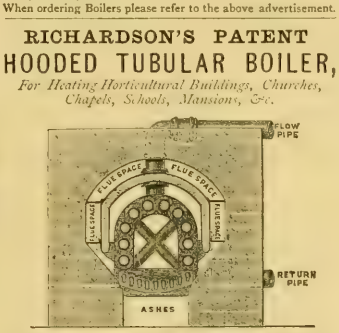
PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.

J. JONES AND SONS, Iron Merchants, 6, Bankside, Southwark, London, S.E.

When ordering Boilers please refer to the above advertisement.

RICHARDSON'S PATENT HOODED TUBULAR BOILER,

For Heating Horticultural Buildings, Churches, Chapels, Schools, Mansions, &c.



This Boiler has a larger area of direct heating surface than any other that is made.

60 *per cent. less fuel is used than with a plain Saddle Boiler of equal power.*

Apply for particulars and Price List to the Patentees.

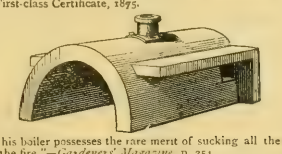
W. RICHARDSON & CO.,

HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS,

DARLINGTON.

Silver Medal, 1874.

THE TERMINAL SADDLE BOILER.—First-class Certificate, 1867; Highly Commended, 1873; and First-class Certificate, 1875.



"This boiler possesses the rare merit of sucking all the heat from the fire."—*Gardeners' Magazine*, p. 254.

"I have no doubt the Best Boiler, that will burn any kind of fuel, is the Terminal Saddle."—*Journal of Horticulture*, p. 327.

"For moderate cost and real efficiency the Terminal Saddle is one of the very best."—*The Garden*, p. 95.

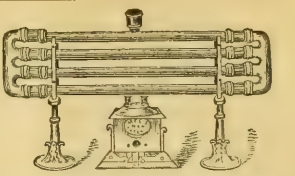
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Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.



KEEP OUT THE FROST, DRIVE OUT THE DAMP, and WARM YOUR GREENHOUSES or other Places, by MEE'S PATENT PORTABLE COMBINATION HOT-WATER APPARATUS.

Price, with packages, £4 10*s.*

F. AND J. MEE, Hot-water Engineers and Patent Boiler Makers, 11, Wood Street, Liverpool.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

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To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.

"*The Ryleys, Alderley Edge, Manchester*—Messrs. Hill & Smith.—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted.—Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

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WORTHINGTON G. SMITH.

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7	,,	..	..	0	4	6	18	,,	..	..	0 10 0
8	,,	..	..	0	5	0	19	,,	..	..	0 10 6
9	,,	..	..	0	5	6	20	,,	..	..	0 11 0
10	,,	..	..	0	6	0	21	,,	..	..	0 11 6
11	,,	..	..	0	6	6	22	,,	..	..	0 12 0
12	,,	..	..	0	7	0	23	,,	..	..	0 12 6
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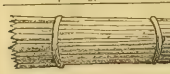
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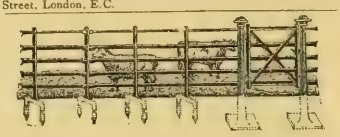
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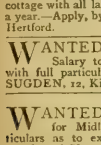
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and as the safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.

DINNEFORD'S MAGNESIA.

E. LAZENBY AND SON'S PICKLES, SAUCES, and CONDIMENTS.—E. LAZENBY AND SON, sole proprietors of the celebrated recipes, and manufacturers of the pickles, sauces, and condiments so long and favourably distinguished by the name, beg to remind the public that every article prepared by them is guaranteed as entirely unadulterated.—92, Wigmore Street, Cavendish Square (late 6, Edward Street, Portman Square), and 18, Trinity Street, London, S.E.

HARVEY'S SAUCE.—CAUTION.—The admirers of this celebrated sauce are particularly requested to observe that each bottle prepared by E. LAZENBY AND SON bears the label, used so many years, signed "*Elizabeth Lazenby.*"

HOLLOWAY'S PILLS.—This cooling medicine has the happiest effect when the blood is overheated, and a tendency to inflammatory action is set up in the system. One Pill taken shortly before dinner does away with the indigestion, fulness, and flatulency indicative of a weak stomach or disordered liver. A few Pills taken at bedtime act as alteratives and aperients: they not only relieve the bowels, but regulate every organ connected with them; overcome all acrid humours, and encourage a free supply of all the secretions essential to our well-being. Holloway's Pills thoroughly cleanse and perfectly regulate the circulation, and beget a feeling of comfort in hot climates and high temperatures, which is most desirable for the preservation of health.



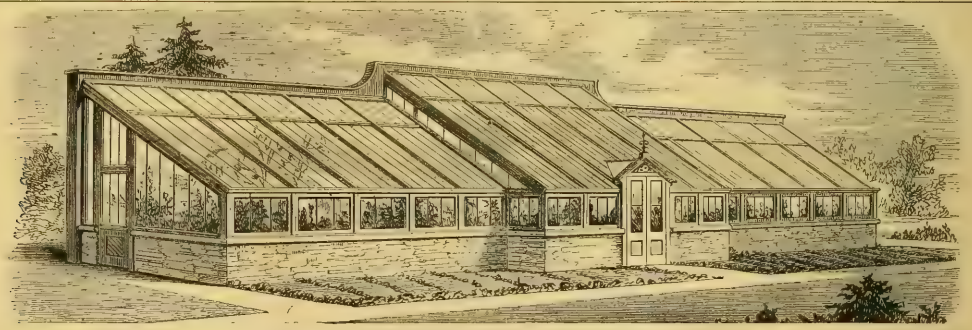
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MANSION HOUSE BUILDINGS,
QUEEN VICTORIA STREET, LONDON, E.C.,

CONSERVATORY AND GREENHOUSE BUILDERS,

AND

HOT-WATER ENGINEERS.



JOHN EDMONDS & CO.,

HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, LILLIE BRIDGE, WEST BROMPTON, LONDON, S.W.

Conservatories, Greenhouses and Hothouses of every description Erected and Heated in any part of the Kingdom or Abroad.
Kiosks, Summer-houses, Verandahs, Glass Approaches, &c.—Pit Lights, Garden Boxes, Hand Glasses, &c., in Stock.

PATENTEES OF THE "TUBULAR SADDLE BOILER," THE BEST CAST-IRON BOILER.

Illustrated Catalogue free by Post. NOTE.—*The Works adjoin West Brompton Station, Metropolitan District Railway.*

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH,

MANUFACTURERS of PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.

DESCRIPTIVE LISTS Free by Post. *Orders amounting to 40s. Carriage Paid.*

36-GALLON SWING WATER BARROW.



The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

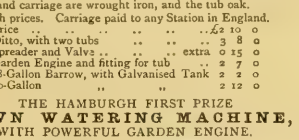
Cash prices. Carriage paid to any Station in England.

Price	£2 19 0
Ditto, with two tubs	3 8 0
Spreader and Valve	extra 0 15 0
Garden Engine and fitting for tub ..	2 7 0
18-Gallon Barrow, with Galvanised Tank	2 2 0
30-Gallon ,, ,,	2 12 0

THE HAMBURGH FIRST PRIZE.

LAWN WATERING MACHINE,

WITH POWERFUL GARDEN ENGINE.



Cash Prices. Carriage paid to any station in England.

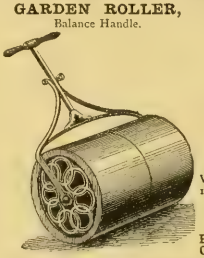
Complete (36 gallons)	£6 10 0
If without Pump	3 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLLER,

Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in.	long by 18 in.	diam...	£1 17	6
20	,, 20	,, ..	2 5	0
22	,, 22	,, ..	2 12	6
24	,, 24	,, ..	3 5	0

DOUBLE-CYLINDER.

18 in.	long by 16 in.	diam...	£2 5	0
20	,, 18	,, ..	2 12	6
22	,, 20	,, ..	3 5	0
24	,, 22	,, ..	3 15	0
26	,, 24	,, ..	4 5	0

PORTABLE PUMP.

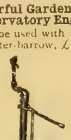


For Liquid Manure or Water.

With stand .. £2 5 0
10 feet of India-rubber Suction Pipe, with Clip and Strainer .. 1 10 0

Powerful Garden and Conservatory Engine.

Can be used with a pail or Water-barrow, £2 2s.



IMPROVED GARDEN ENGINE.



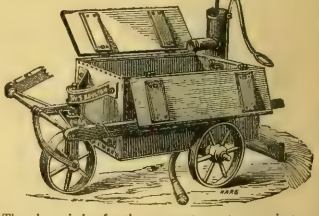
A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices. Carriage paid to any Station in England.

15 gallons, £3 10s. | 20 gallons, £4 | 25 gallons, £4 10s.

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

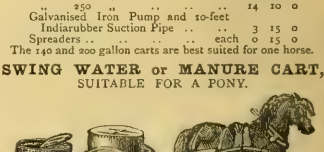
Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£10 10 0
,, 200 ,, ...	12 10 0
,, 250 ,, ...	14 10 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	3 15 0
Spreaders .. .. .. each	0 15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

To hold 60 gallons with one tank ..	£6 0 0
,, 100 ,, ...	8 0 0
Valve and Spreader for ditto	1 5 0

Goods amounting to 40s. sent carriage free to any of the principal Railway Stations in England. Cash or reference respectfully requested with transmission of all first orders.

Editorial Communications should be addressed to "The Editor," Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 240.—Vol. X. { New Series. } SATURDAY, AUGUST 3, 1878. { Registered at the General Post Office as a Newspaper. } Price 5d. Post Free, 5½d.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, August 6, at 11 o'Clock. GENERAL MEETING for ELECTION of FELLOWS at 3 o'Clock. EXHIBITION of BRITISH BEE-KEEPERS' ASSOCIATION. The Band of the Royal Horse Guards will attend.

Admission One Shilling.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to

Mr. THOMSON, Crystal Palace.

BRACKLEY AGRICULTURAL and HORTICULTURAL SOCIETY.

The ANNUAL FLOWER SHOW of this Society will be held on TUESDAY, August 6, 1878, by Mr. Weston's kind permission, in the picturesque grounds at the rear of the College Chapel, Brackley. The magnificent Band of Her Majesty's Coldstream Guards has been engaged for the occasion. Schedules and all information will be afforded upon application to the Hon. Secs.,

R. J. AND A. H. RUSSEL, Brackley.

MAIDENHEAD HORTICULTURAL SOCIETY.

The FIRST FLOWER SHOW will be held on THURSDAY, August 29, in the Hambletonian Hall, Maidenhead.

Admission 2s. 6d. from 1 until 4 o'Clock, and 1s. from 4 until 7 o'Clock. Tickets may be had of the Treasurer, Mr. H. H. DURRANT; the Secretary; or at Mr. HODGE'S Library.

Entries close August 22, except for Cottagers, who can enter any time before the day of Show.

Schedule and Rules may be had of

Mr. H. J. MOUNT, Honorary Secretary.

BANBURY HORTICULTURAL SOCIETY.

The THIRTY-SECOND ANNUAL SHOW will be held on TUESDAY, August 27. SCHEDULES, including OPEN PRIZES for ROSES and GLADIOLI, and of £10 and £5 for STOVE and GREENHOUSE PLANTS to be had of the Secretary,

Mr. E. J. HARTLEY, High Street, Banbury. Productions conveyed from and to railway.

SANDY and DISTRICT FLORAL and HORTICULTURAL SOCIETY (Open Show).

The TENTH ANNUAL EXHIBITION of FLOWERS, FRUIT, VEGETABLES, CAGE BIRDS, and POULTRY, will be held at Sandy, Bedfordshire, on FRIDAY, August 30. Prizes ONE HUNDRED and EIGHTY POUNDS. Ten Stove and Greenhouse Plants in flower, 1st prize, £10, 2d prize £6. Schedules on application to WILLIAM GREEN, Sec., Sandy.

The Cabbage that will not run is HENLEY CHAMPION.—It is the earliest and best Cabbage in cultivation. It may be sown and planted at any time of the year, and will not run. 1s. per ounce, post-free. E. JONES, Seedsman, Henley-on-Thames.

Strawberries.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE PRICED CATALOGUE of the above is Now Ready, and will be sent post-free on application.

Highgate, London, N., and Barnet, Herts.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

B. MALLER has yet to offer 2000 GREVILLEA ROBUSTA, fine, in 48-pots; 75s. per 100, 12s. per dozen.

The Nurseries, Lee and Lewisham.

ROSES.—Visitors to the Nurseries are invited to inspect our extensive Collection of ROSES, which are now in magnificent bloom.

CRANSTON'S Nurseries, King's Acre, Hereford.

To the Trade.

STANDARD ROSES.

JNO. JEFFERIES AND SONS offer extra fine Standard ROSES, and will be pleased to quote Special Prices for delivery in Autumn.

JNO. JEFFERIES AND SONS, Royal Nurseries, Cirencester.

Venus' Fly-Trap.

DIONÆA MUSCIPULA.—Nice plants with good traps, of this interesting Fly-catcher, 30s. per dozen.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to

BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

To the Trade.—New Roses of 1878.

GEO. COOLING begs to offer extra fine plants of thirty-two of the best varieties of the above, with plenty of buds for immediate working. List and price on application.

The Nurseries, Bath.

Gentlemen's Gardeners, Amateurs, and Others

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GARDEN POTS of best quality, are requested to send their orders to

J. MATTHEWS, Royal Pottery, Weston-super-Mare.

Price List on application.

CYCLAMEN SEED.—To the Trade.—J. AND G. LOWE have just harvested a fine strain of the above in separate colours and mixed. Price per ounce and pound on application. J. AND G. LOWE, Uxbridge.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

To the Trade.

RAPE SEED and WHITE MUSTARD.

H. AND F. SHARPE have fine samples of the above-named Seeds, suitable for sowing purposes. Prices, &c., may be had on application.

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Grevillea robusta.

SANDY AND SON offer beautifully-grown PLANTS of the above, in 4-inch pots, 1 foot to 18 inches; 50s. per 100. The Nurseries, Stafford.

To the Trade.

SEEDLINGS, Good and Strong, of DRACÆNA AUSTRALIS, at 15s. per 100; ARALIA SIEBOLDII, at 5s. per 100; CHAMÆROPS EXCELSA, at 7s. per 100: ditto, in single pots, 4 and 5 leaves, at 15s.; AGAPANTHUS FL. ALBA, at 10s. per cwt.; RHUBARB, QUEEN VICTORIA, at 4l. per cwt. SEEMANN AND GOEPEL, The Nurseries, Wandsbeck, near Hamburg, Germany.

CALCEOLARIA, superb selection, magnificent colours, beautifully marked.

CINERARIA, of splendid colours and large flowers.

PRIMULA, from exhibition plants.

The above are raised by the best growers in the kingdom. Packets 1s. and 2s. 6d. Supply limited, cannot serve the Trade.

C. R. FREEMAN, Economic Seedsman, Norwich.

To the Trade.

W. CROWDER has to offer at low prices Robinson's Champion Drumhead CABBAGE, Early Enfield ditto, Rape or Cole. Prices on application.

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Geranium Cuttings.

WANTED to Purchase, cuttings of choice Gold and Silver Tricolor, Bronze and Zonal GERANIUMS. Send list of sorts, and price per 100 or 1000, to

DANIELS BROS., The Town Close Nurseries, Norwich.

WANTED to PURCHASE or RENT on LEASE, about 3 ACRES of first-rate GARDEN LAND in a sheltered situation. The Southern, Western, or South Midland Counties preferred. A small residence and some glass also no object. Address

NEPTUN, W. H. Smith & Son, Bookstall, Bedford.

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WANTED, a few hundreds of the pods of Prince of Wales. Send sample and price.

BUTLER, McCULLOCH & CO., South Row, Covent Garden Market, London, W.C.

To the Trade.

ROMAN HYACINTHS, white and blue; NARCISSUS, double Roman and paper white; SNOWDROPS, single and double. Special low quotations on application to

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Hyacinths, Tulips, and Other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C,

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

Dutch Bulbs, First Quality Only.

C. G. VAN TUBERGEN'S Wholesale CATALOGUE of Hyacinths, Tulips, &c., will be forwarded free to the Trade on application to

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C. G. VAN TUBERGEN, Nurseryman, Haarlem, Holland.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.

The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

For Autumn Exportation.

J. VANDER SWAELMEN'S ENGLISH TRADE CATALOGUE is now ready, containing the most commercial Plants and Bulbs. Free on application.

The Lily Nursery, Ghent, Belgium.

New Plant Catalogue.

HEATH AND SON beg to announce their New Illustrated CATALOGUE of ORCHIDS, FERNS, STOVE PLANTS, &c., is now ready, and will be forwarded, gratis and post-free, to all applicants.

HEATH AND SON, Nurserymen, &c., Cheltenham.

To Amateur Strawberry Growers.

RUNNERS, strong and well-rooted, are now ready, from H. D. Thury, President, Sir J. Paxton, and B. Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants post-free, 1s.

Manual on Strawberry Culture, 6d.

W. LOVELL, Strawberry Grower, Weaverthorpe, York.

To the Trade.

LILIUM AURATUM, 12s. per dozen, extra fine; HYACINTHS, White Roman; JONQUILS, double; NARCISS, paper-white and double Roman; ANEMONE FULGENS; SNOWDROPS, double and single; BEGONIA ROEBELI, double white NARCISS. Prices low, quality extra.

F. SANDER AND CO., Seed Growers, St. Albans.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

To the Trade.

NEW ENGLISH SOWING RAPESEED.

H. AND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.

Seed Growing Establishment, Wisbech.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.

CATALOGUES and Prices on application. Special terms to the Trade.

HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH AND CO. (established 1822), Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the world.

To the Trade Only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE for 1878 79, first part (332a), is Now Ready, and may be had free on pre-paid application by Nurserymen, Florists, and Seedsmen. The Catalogue contains complete collections of Hyacinths, Tulips, Crocus, Narcissus, Fritillarias, Ranunculus, Anemones, Lilies, Iris, Gladiolus, Pæonies, Amaryllis, &c. The second part of this Catalogue (332c), containing a complete list of miscellaneous Bulbous and Tuberous-rooted Plants, will be sent out beginning of August.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.

BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

SALES BY AUCTION.

Auction Mart, Tokenhouse Yard, near the Bank of England.

IMPORTANT SALE of a celebrated collection of ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 19, at 12 for half-past 12 o'Clock precisely, a magnificent COLLECTION of ESTABLISHED ORCHIDS in the best possible health, including several handsome specimen Cypripediums, Saccolabiums, Vandas, Cattleyas, &c.; also fine plants of Odontoglossum vexillarium and Roezlii; Masdevallia Harryana, Lindenii and coccinea; Lælia purpurata, majalis, flava, autumnalis, albida and anceps; Cattleya gigas, eldorado, Mendelii, superba and marginata; Dendrochilum filiforme; Oncidium concolor, præstantum, Marshallii, dasytyle, cheirophorum, and other rare varieties; Cymbidium eburneum, C. Mastersii; Cypripedium Parishii, Sedenii, Stonei, Harisii; Odontoglossum Alexandræ, pulchellum majus, Leopardium grande and Phalænopsis; Pescatorea cerina; Pleione humilis, maculata; Saccolabium ampullaceum, Blumei, curvifolium, præmorsum, guttatum; Sobralia macrantha; Sophronitis coccinea and grandiflora; Vanda cœrulea, tricolor formosa, Parishii, suavis, and undulata; Paphinia cristata; Miltonia; Lycaste Skinneri, Opidendron vitellinum majus; Dendrobium Ainsworthii, Cambridgeanum, chrysotis, Devonianum, Falconerii, heterocarpum, nobile, Schroderii, thyrsiflorum, and Wardianum.

On view morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

New Oncidium Edwardi Reichenbach, Odontoglossum PARDINUM, some with flower-spikes.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 8, at half-past 12 o'Clock precisely, on and for account of Mr. B. Roezl, an importation in finest health of the new ONCIDIUM EDWARDI REICHENBACH, discovered by Mr. Edward Klaboch, and fully described by Professor Dr. Reichenbach, in the *Gardeners' Chronicle*, June 8th. It is a new violet-coloured variety of great beauty, the flowers are produced in enormous quantities in stout 3 feet long stems, and the effect of its mass inflorescence is grand. At the same time will also be sold an importation in altogether unusually fine masses of ODONTOGLOSSUM PARDINUM, the pieces are in the finest possible health and freely set with breaks. The masses of Odontoglossum pardinum, through having been brought home and packed in a peculiar manner, are in such a marvellous fine condition that some of them have actually made flower-spikes on the journey, and we do not think that an Odontoglossum in any description has ever reached this country in such fine or better health than these Odontoglossum pardinum.

On view the morning of Sale, and Catalogues had.

Blounts Farm, Sawbridgeworih, Herts.

IMPORTANT ANNUAL SALE of CROPS and HAY.

G. E. SWORDER begs to announce that he has been favoured with instructions from John Prout, Esq., to SELL by AUCTION, on the Premises, on TUESDAY, August 6, 1878, the excellent GROWING CROPS of CORN, upon 370 acres, including 120 acres of Wheat, 215 acres of Barley, 35 acres of Oats, together with the whole of the Straw; also 70 acres Second Cut CLOVER, seven stacks of First Cut CLOVER HAY, and two stacks TARE HAY.

Luncheon at 11 o'Clock.

Catalogues may be had of the Auctioneer, Bishop's Stortford.

FOR SALE, Cheap, a Small FLORIST'S BUSINESS—all Glass, well stocked, Heated with Hot Water. Apply on the Premises.
W. FISHER, Myrtle Cottage, Green Lane, South Street, Greenwich.

To Builders, Master Gardeners, and Others.

TO BE SOLD, a Bargain, Five 2-inch Gun Metal HYDRANT VALVES, with caps and chains complete, 560 feet lengths of best canvas HOSE lined with indiarubber, each length fitted with gun metal unions to screw on valves, five brass NOZZLES, 18 inches long, to screw on hose unions, fitted with ¾ cocks to screw on and off, five pairs of COUPLING IRONS for hose unions. The whole made by C. Jakes & Co., Engineers, London.
Can be seen at 5, Granby Street, Hampstead Road, N.W.

Kent.

COUNTRY HOUSE to LET on LEASE.—Rent £90 per annum. Situate at Merewoith, two miles from S.E.R. The house contains ten Rooms, and there is Stabling, Coach House, and Gardener's Cottage. The house stands in a valuable FRUIT PLANTATION, returning about £40 annually. The whole being about 2 acres.
For particulars apply to GEORGE BUNYARD, The Nurseries, Maidstone. No Agents need apply.

Nurserymen and Growers for Market.

TO LET, a large GARDEN, well stocked; about 4,000 feet Glasshouses, Twin Boilers, adjoining Cottage, large Sheds, Stables, Office, &c., most conveniently fitted for a good trade; mile from station.
G. MIDWAY, Bradford-on-Avon.

Camellias, Indian Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate that his stock of budded plants of Camellias and Indian Azaleas and of Decorative Palms is unusually fine this season, and will be ready for delivery at very moderate charges on and after September 1. Also the following desirable plants are in prime condition:—Ghent Azaleas, Azalea mollis, Spirea japonica, and Lilies of the Valley, Greenhouse Ferns for furnishing and general nursery stock as well.
The new CATALOGUE will be issued shortly.
A. VAN GEERT, the Continental Nurseries, Ghent, Belgium.

TO BE SOLD, or EXCHANGED for small Stove or Greenhouse Plants, Ferns, or Roses, the following fine Specimen Plants, all in perfect health and forming part of a famed Collection:—Cyathea dealbata, 3 feet stem; Dicksonia antarctica, young plant, 20 fronds; a splendid basket Ferns, Gompholobium subauriculatum, very fine Lemon tree, 8 feet high, in fruit; pair of Orange trees, 5 feet by 4 feet, well furnished; Croton pictum, 6 feet high; 2 plants of Australian Flax, 6 feet high; very fine Rhododendron Veitchii, 5 feet by 4 feet; R. Edgworthii, same size, well furnished; 3 Pitcher-plants, including Nepenthes Hookerii, 12 fine plants of Yucca variegata, and other plants.
Particulars on application to TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.
SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)
Agents: Messrs. C. J. BLAKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

To the Trade.

NEW TURNIP SEEDS FOR PRESENT SOWING.

H. AND F. SHARPE have just harvested the following varieties of TURNIP SEEDS suitable for present sowing, viz.:—

Stratton Green Round	Pomeranian White Globe
Devonshire Grey Stone	Lincolnshire Red Round
Sutton's Mammoth Purple Top	White Stone or Stubble

They are ready for immediate delivery. Prices may be had on application.
Seed Growing Establishment, Wisbech.

Four Choice and Handsome Orchids.

MR. WILLIAM BULL offers:—
AERIDES FIELDINGII (FOXBRUSH),
DENDROBIUM BIGIBBUM,
CYMBIDIUM EBURNEUM,
CŒLOGYNE BARBATA,
at the extremely low price of 10*s.* 6*d.* each.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

FOR FORCING.
SPIRÆA JAPONICA, 20*s.* per 100.
„ PULMATA, 25*s.* per 100.
By 100 or 1000, an immense stock finely ripened; smaller Palmatas for planting, 10*s.* 6*d.*, 15*s.*, and 20*s.* per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS.
Booked for Autumn, 12*s.* per dozen, 75*s.* per 100.
CHARLES NOBLE, Bagshot.

ORCHIDS.—Thousands of choice Orchids from Brazil, West Indies, Colombia, Assam, &c., in fine imported pieces, at 3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* A choice selection of Established and Semi-established plants, growing freely and in good health, also kept in stock. Orchid growers are respectfully requested to make an early application to the NEW PLANT AND BULB COMPANY, Lion Walk, Colchester, in order to secure the best pieces.
N.B.—The Brazilian Orchids are to hand, in fine condition. 20,000 Orchids from Colombia have arrived.

STRAWBERRY PLANTS.—Well rooted, strong runners, of following varieties, purchaser's selection, 3*s.* 6*d.* per 100, our selection, 2*s.* 6*d.* per 100, 20*s.* per 1000, true to name:—Aromatic, Amateur, British Queen, Bicton Pine, Black Prince, Cornucopia, Comte de Zans, Crimson Queen, Comte de Paris, Dr. Hogg, Duke of Edinburgh, Elton Pine, Eleanor, Exquisite, Early Prolific, Enchantress, Eliza, Garibaldi, John Powell, Grosse de Sucree, Oscar, Marguerite, Lucas, Prince Arthur, Prince of Wales, President, Premier, Royalty, Sir C. Napier, Sir J. Paxton, Sabreur, Scarlet Pine, Souvenir de Kieff, Stirling Castle, Traveller, The Countess, Viconntesse de Thury, Dr. Nanz Frau, Wonderful, W. J. Nicholson. Not less than twenty-five of a sort supplied at 100 rate; 100 plants in twenty sorts, 5*s.*, 100 in fifty sorts, 7*s.*
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

PRIMULAS, CINERARIAS, CHOICE GERANIUMS, &c.—Striped Vesuvius and Salmon Vesuvius, 1*s.* 6*d.* each; White Vesuvius and Dr. John Denny, 2*s.* each, post-free; twelve fine distinct Geraniums for pot culture, winter blooming, &c., 4*s.* and 6*s.*, post-free. Primulas and Cinerarias, 2*s.* per dozen, post-free; Roman Hyacinths, fine bulbs, 2*s.* 6*d.* per dozen, 17*s.* per 100.
STOVE and GREENHOUSE PLANTS in great variety.
CATALOGUES on application. Special cheap offers to Gentlemen furnishing new Conservatories, Greenhouses, &c.; also to those planting Herbaceous Borders of Herbaceous and Alpine Plants, Florist's flowers, &c.
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SPECIAL OFFER to the TRADE of HARDY BULBS and FLOWER ROOTS.

Camassia esculenta, 20*s.* per 100.	Narcissus biflorus, 4*s.* per 100.
Colchicum autumnale, fl. pl., 25*s.* per 100.	„ odorus (Campernel Jonquil), 4*s.* per 100.
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Dielytra spectabilis, strong plants, 25*s.* per 100.	„ Tazetta aureus (Grand Soleil d'Or), 9*s.* per 100.
Erythronium dens-canis, fl. roseo, 7*s.* per 100.	„ telamonius, fl. pl., 7*s.* per 100.
Hemerocallis fulva, 12*s.* per 100.	Orchis maculata, home grown, 10*s.* per 100.
Iris cristata, 17*s.* per 100.	Ornithogalum splendens, 3*s.* per 100.
„ germanica, the best named varieties, 13*s.* per 100.	Platycodon grandiflorum, fl. cœruleo (Campanula grandiflora), 17*s.* per 100.
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„ tigrinum, 5*s.* per 100.	„ patula albida, 7*s.* per 100.
„ „ fl. pl., 67*s.* per 100.	„ patula atro-cœrulea, 7*s.* per 100.
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Canarina campanula, 34*s.* per 100.	Cyclamen persicum, fl. roseo, 25*s.* to 67*s.* per 100.

All grown in pots.

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Spiræa Aruncus, 25*s.* per 100.	Spiræa japonica (Hoteia), 14*s.* per 100, £5 17*s.* per 1000.
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Our Revised LIST for 1878 is now ready, and will be handed to all Gardeners and Amateurs, post-free, on application to Messrs. MERTENS AND CO., Forwarding Agents, 5, Billiter Square, London, E.C., or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.



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CINERARIA and CALCEOLARIA, each 2*s.* 6*d.*
CYCLAMEN PERSICUM GRANDIFLORUM, 1*s.* and 2*s.* 6*d.*
PANSIES, best English and blotched flowers, each 1*s.* 6*d.*
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The above Prize will be given in one sum to the Grower of the best Specimens of Garden Produce from Seed supplied by
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Bedding Plants, strong and healthy; Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.
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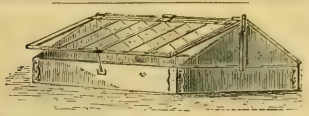
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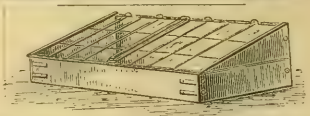
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With 2-inch sashes and 1½-inch red deal frames, secured at each corner with two wrought-iron strap bolts. Glazed, without putty, with 21-oz. glass.

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8 feet by 6 feet, 2 lights	..	3 12 0	20 feet by 6 feet, 5 lights	..	8 15 0
12 feet by 6 feet, 3 lights	..	5 7 6	24 feet by 6 feet, 6 lights	..	10 10 0

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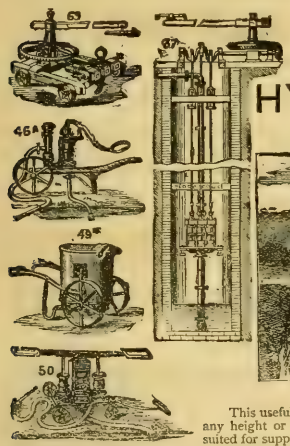
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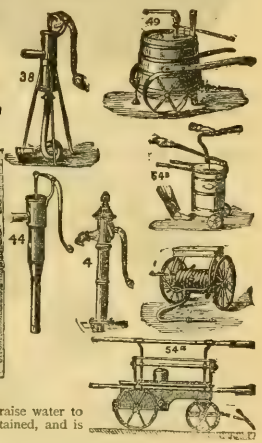


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Sutton's Imperial. The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use Heads cone-shaped, very large, firm, and of mild flavour. *1s. per ounce.*

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ONION.—New Queen.

A valuable, new, and distinct variety, being the earliest of all Onions. Sown in March it comes to maturity in July, or sown in July it is fit for use the following autumn. It is of beautiful mild flavour, and strongly recommended.

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LARGE EARLY WHITE ITALIAN	1 3
GIANT LATE RED ITALIAN	1 3
GIANT LATE WHITE ITALIAN	1 3

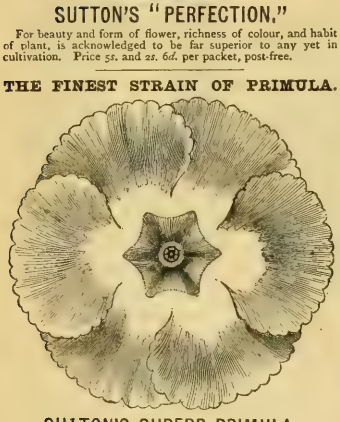
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VINES—VINES—VINES.

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Having received an Importation from Torres Straits of this new and handsome DENDROBIUM, is now sending out good plants at Three and Four Guineas each.

An inspection of these is invited, as of many thousands of other choice ORCHIDS, which can be supplied at moderate prices, having been received from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago.

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Desire to direct attention to the following Novelties:—

TORENIA BAILLONI.

A pretty novelty from Cochin China. It has the habit of T. asiatica and T. Fournierii, but the flowers are bright yellow, with a dark purplish brown tube. It is free flowering, and will prove quite as useful as the other varieties of Torenia.

Price 5s. each.

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A beautiful semi scandent evergreen hardy shrub, a native of Valdivia, from whence we introduced it through the late Mr. Pearce.

It is figured in the *Gardeners' Chronicle*, July 27, 1878, page 108, and mentioned in the following terms:—

"This is one of the most desirable of hardy shrubs—for such it is at least in Messrs. Veitch's nursery at Combe Wood. The plant was described from Messrs. Veitch's specimens in these columns in 1873, p. 947. Its dense masses of white flowers have some resemblance to those of some of the Spiræas, but the botanical structure is quite different and the foliage of a richer green than in most Spiræas. We congratulate Messrs. Veitch on the introduction of so beautiful a shrub, which amply justifies our commendations."

Price 7s. 6d. each.

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And all CASTINGS for HORTICULTURAL PURPOSES.

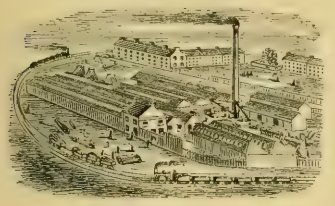
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Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

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Visitors should see the "Boyd-Wills" Conservatory, which is generally admitted to be one of the sights of the Exhibition, and was honoured with a *special* visit from their Royal Highnesses the Prince and Princess of Wales, and the Crown Prince and Princess of Denmark, &c.



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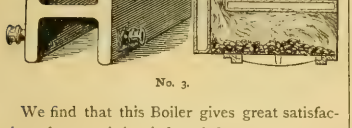
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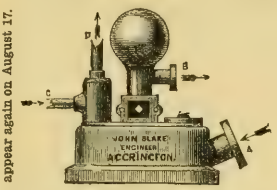
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on August 17.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. Sotheron Estcourt, *Estcourt Park, Gloucestershire, September 6, 1875.*

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain Townshend, *Wineham, February 10, 1877.*

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From John Barnes, Esq., *Contractor, Chalburn and Hellifield Railway, Contractor's Office, March, 1877.*

"Dear Sir,—I have the pleasure to inform you that the three Hydraulic Rams you erected for me on this contract about two years ago, have continued to work very satisfactorily, without requiring any repairing. With a fall of 5 feet sufficient water has been raised daily by each ram to supply two of my locomotive engines: they have fully answered my expectations and all that has been said of them."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. Hanmer."

From Mr. Thomas Mason, *Alkincoates Hall, Colne, September 30, 1871.*

"Sir,—Your self-acting Hydraulic Ram gives me entire satisfaction; it has been at work about fifteen months, and has only been seen once during the last six months; it is forcing about 1400 gallons per day of twenty-four hours to a height of 194 feet."

From John Pennington, Esq., *Emmott Hall, near Colne, December 21, 1868.*

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,

ENGINEER, ACCRINGTON.



SATURDAY, AUGUST 3, 1878.

AMERICAN NOTES.

(*Continued from p. 74.*)

PROGRESS and transformation are quite as obvious in the Canadian towns as in the general aspect of the country, and if I may draw a parallel from the old world, there are several orders of architecture which are in quick process of successive replacement. Canada has had its wigwam period, its log-hut period, its painted wooden-villa period, and its matured brick and stone-building period. In the embryo towns the three latter types are seen side by side curiously mingled. Hamburgh, in the Province of Ontario, is a good representative of a rising place, neither village nor town, yet perhaps aspiring to the future status of a "city" laid out with broad roads representing its future intentions, which are some day to be realised in the replacement of its present strange mixture of habitations by proper streets and orderly buildings.

The log hut is but occasionally seen looking grimly substantial and solid, a sort of old friend that cannot be dispensed with, often annexed to an uncongenial smart-looking painted villa constructed wholly of wood. The wooden villa is the present pervading type, varying from handsome roomy houses to neat little habitations looking like educated bathing machines without wheels.

These framed wooden dwellings possess the advantage of being movable entire from place to place, and men who make it their trade are able to shift about on rollers to a fresh location a six or eight-roomed house, family included, without interrupting the domestic routine.

Through the streets of Hamburgh, wide and miscellaneous in their aspect, "stores" of every grade, rows of wooden villas, the smouldering ashes of a burnt block, a handsome stone fire insurance office, churches and chapels, lots of brightly painted agricultural implements staged in the streets, and great piles of "lumber" all dotted about and intermixed, we emerge into the country between snake-fences along a road which has been heaved up bodily by the late winter's frost, and is just settling down again into small hills and valleys over which the high-wheeled buggy is dexterously guided.

The fields on either side present every variety of agricultural progress, some with level-sown crops as neat as culture can make them; then blocks of virgin forest, neatly pruned orchards, or boggy thickets, most inviting for a botanical stroll; and again, large areas in every stage of transformation; partly cleared land, with the timber hewn and the crops sown amongst the weird-looking dead stumps and the great transported glacial boulders; other fields from which the stumps have just been grubbed up, with the plough gradually reducing the natural inequalities of the ground. Labour is so valuable in Canada, and the exigencies of the farm-work so pressing during the six or seven months of open weather, that every expenditure on levelling ground or mere neatness of detail has to be dispensed with. The farms are mostly freeholds, of from 70 or 80 to 150 or 200 acres, and worth in the best cleared districts from £8 to £25 or £30 an acre; in more remote districts not nearly so much. Taxation is but light, and mainly for local purposes, about half the total being devoted to education. The school

organisation, which is national and unsectarian, is of a somewhat higher standard than in our own elementary schools, and is said to be efficient and free from our "religious difficulty" without being irreligious.

The other main item of public expenditure is for highways, the local roads being kept in repair by a contributory assessment of manual and team labour within limited districts, or money payments in lieu of labour.

The neighbourhood of Hamburgh and Haysville is a great milk-producing district. The production of cheese has for many years been centred in special factories, formerly under a sort of joint arrangement, the farmers paying for the manufacture; but now the milk is purchased and collected by the factories, and converted into cheese, and the ready sale of milk at 8*d.* a gallon to the factories is one of the most profitable branches of Canadian farming. The manufacture of butter on the same plan is also being commenced.

A drive of 6 miles brought me to Nyth Grove, near Haysville, a pleasant location on a terrace above the River Nyth, a pretty trout-stream winding amongst rich meadows and beautiful woods, where I enjoyed some hours' interesting botanical research. The prevalent plant in the meadow fronting the house was the curious Aroid, Symplocarpus fœtidus, or Skunk-Cabbage, so called from the offensive odour emitted from any bruised part of the plant. The boggy portions of the meadow produced an Andromeda, and a very handsome variety of Lilium canadense, not yet in flower, but which I have had under culture from this source. Cypripedium candidum occurs sparingly, also Sarracenia purpurea, several species of Viola, Smilacina stellata, &c.

The Canadian Forests.

The "Bush" close by struck me as being the most beautiful woodland scenery I had ever seen, set off by the winding river passing through it, a complete canopy of bright green spring foliage high up on a labyrinth of tall bare stems, intermixed with Hemlock Spruce, and a perfect garden of verdure under foot, mixed up with prostrate trunks in every stage of decay. The old age, death, decay, and replacement of trees in a natural forest is a novelty to anyone from a land of plantations and periodical felling, where every tree is much alike from a fair and equal start, and is artificially protected from natural competition. In most of the Canadian woods we have the picturesque charm of Nature working in her own way. Here are the seed-beds of young trees as thick as Mustard and Cress; many perish in their babyhood, and others struggle on to middle life, a few only growing up into the gaps left by the death and decay of the patriarchs of the forest, so that there is a constant round and unbroken scene like the continuous life of a nation, the individual lives overlapping and overlapped by their contemporaries.

The deciduous trees of the forest look much alike, and are monotonous in their habit and aspect, but include double or treble the number of species found in any European wood. Maples are prevalent, and two species occur here —Acer rubrum, the red or "soft" Maple; and Acer saccharinum, the sugar or "hard" Maple. The former is generally a smaller tree than the latter, and grows in swamps and low grounds. It assumes its brilliant scarlet colour earlier than the Sugar-Maple, often in July and August patching the green forests with brilliant scarlet and crimson. It is largely used for fuel, and varieties known as the "curled," "landscape," and Mountain Maple are employed for cabinet work.

The Sugar Maple.

Acer saccharinum is a much larger tree, and is at once distinguishable from the Red Maple by the roundness of the notch between the lobes of the leaves. It is one of the largest trees of the genus, often attaining a diameter of from 3 to 4 feet, and out-topping the other deciduous trees, sometimes reaching a height of over 100 feet. For fuel and charcoal its wood is especially valuable; it also produces the well-known Bird's-eye Maple used in cabinet work, supposed by Emerson to be a distinct variety of the Sugar Maple, but from information given me in Upper Canada, it seems probable that it is only of mere casual occurrence in individual trees. This species is pre-eminently the source of Maple sugar and was known to the Indians before the settlement of the country by Europeans.

I had the advantage of inspecting on the farm of a Dutch gentleman, near Haysville, a section of the forest in which the Maples are tubbed, and the collected sap boiled down for sugar, the particulars of which I record.

A very interesting physiological point connected with the production of Maple sugar is the variability of the flow of the sap dependent on diurnal changes of weather, the whole life-force of the big old trees being apparently ruled by trifling changes of temperature and alternations of heat and frost. Changes of life-action occur unappreciable to the eye in the daily development of the spring growth, but which the flow of sap records with precision.

The rising of the sweet sap commences immediately after the first break-up of the long frost from the middle to the end of February, continuing through March and into the early days of April, but varying in different localities and at different seasons. A cold north-west wind with frosty nights and sunny days in alternation, tends to incite the flow, which is more abundant during the day than the night. It is, however, most sensitive to unfavourable changes, and from a flow of 3 gallons a day from one tree may almost cease in a few hours, and then gradually recover itself. From this it will be seen that the flow given from day to day is uncertain, and that reliable statistics of produce are difficult to record. A continuous course of favourable weather tends to the largest production, a rising and falling supply reducing the total produce of the season.

The time at which the flow commences varies, not only with the season, but with the exposure and elevation of the ground, being earliest in warm and low situations. A thawing night is said to promote its flow, and it ceases during a south wind and at the approach of a storm, and so sensitive are the trees to aspect and climatal variations that the flow of sap on the south and east side has been noticed to be earlier than on the north and west side of the same tree.

There are generally from ten to fifteen good "sap-days" in the sap season, which continues on and off for about six weeks, after which, as the foliage developes, the saccharine matter is reduced, and the sap is said to be "sour" though a restricted flow still continues. Emerson, in his work on the *Trees of Massachusetts*, referring to Michaux's observations, considers that the product of Sugar depends also on the character of the previous summer, and that a season of plentiful rain and sunshine prepares the tree for an abundant harvest of Sugar in the succeeding spring. Open winters are thought to cause the sap to be sweetest, and much freezing and thawing to make it most abundant and of the best quality. The sap of isolated trees is richer in Sugar than that of those which are massed together in the forest.

In the Maple Bush at Haysville the produce of Sugar was at the rate of 1 lb. to each 6 gallons of sap, and the average may be 1 lb. to 4½ or 5 gallons, but Emerson records instances in which 1 lb of sugar has been produced from 3 gallons of sap. With reference to the produce of individual trees, in a good sap season an average tree will run as much as 3 gallons of sap in a day, occasionally more, and produce about 4 lb. of sugar in the season, but Emerson records instances of the production of 10, 20, 33, and 43 lb. of sugar from single trees. Such weights are, however, altogether exceptional. The highest weight was produced from a draught of 175 gallons of sap from a single tree. The average quantity per tree would be from 12 to 24 gallons in a season.

Young trees under twenty-five years old are seldom tapped, the smaller trees scarcely paying for the trouble, apart from the debility it produces in the young growing tree. Repeated tapping of the matured trees produces no apparent injury or effect on their vigour. Emerson records instances of trees that have been tapped for forty consecutive years without injury, and it is said that both the quality and quantity of the sap are visibly improved after the first tapping.

The trees are usually tapped at a height of 3 or 4 feet from the ground with a ⅞ inch auger to a depth of from 2 to 6 inches, into which a perforated plug is driven to lead the sap into the collecting vessels, or a simple notch 1½ inch deep is cut with the axe. From one to three taps are inserted in each tree, and these have to be renewed in succeeding years in fresh places, generally alternated on opposite sides of the tree. The sap is evaporated either in iron chaldrons or shallow boilers, 6 feet long, 2½ feet wide, and about 8 inches deep. Those of copper are preferred to iron, as they are said to yield a whiter sugar.

Care is taken to keep the boilers filled up with fresh additions of sap during evaporation till the syrup attains a sufficient consistency, which is ascertained by its "breaking" or crystallising when dropped into cold water. The syrup is strained during evaporation, a small quantity of lime or soda added to neutralise any free acids that may be present, and a little white of egg or milk to clear it. After straining and skimming, the syrup is poured into pans or moulds to crystallise, and it may be further clarified by gently boiling in tapering cans with a tap at the bottom, towards which the molasses gravitates, and is drawn off as the crystallised sugar sets.

Maple-sugar is made not so much as an article of commerce as for the home use of the producers, and the great bulk being consumed where it is made, it is difficult to arrive at anything like an accurate estimate of the total production. Emerson states that in Massachusetts alone between 500,000 and 600,000 lb. weight of sugar are annually produced from the Maple, and he values it at 8 cents. per lb. In 1874 the price rose to from 10 to 22 cents. a lb. In Canada at the beginning of April last, new Maple sugar was selling at from 10 to 11 cents. a lb., about the price of the best cane sugar.

A considerable proportion of the Maple-sap product is also preserved as syrup without crystallisation, and in this state it is used as sweet sauce and for various culinary purposes.

The Maple sugar production is said to be a growing industry, and if the preparation could be centred in well-ordered factories, on the plan of the cheese and butter factories, there is little doubt that carefully prepared Maple sugar would closely compete in price with cane sugar. As it is, with the simple and almost rude appliance for preparation, there is little to choose between the purchase of Cane sugar and the cost of producing the local home-made sugar from the sap of the Maple. *Geo. Maw, Benthall Hall, Broseley.*

To be continued.)

New Garden Plants.

Mesembryanthemum hirtum, N. E. Br.

Stems perennial, diffuse procumbent, terete, 3—6 inches long, 1½ line thick, dull purple-red, papillate, rather rough, clothed with fine short spreading hairs, at length becoming woody, pale-grey and glabrous. Leaves crowded on the barren shoots, ½—1½ inch distant on the flowering branches, connate at base, suberect-recurving or sometimes the older leaves spreading-recurved, 1½—2½ inches long, 2—3 lines wide, linear, attenuate from about ¼ or ½ below apex to a subacute point, face concave, back obtusely keeled, both surfaces covered with minute glistening papillæ, hairy along the keel and margins otherwise glabrous,

dark green, dull purple-red at base; sometimes the whole leaf is purple-tinted. Flowers terminal, usually solitary, sometimes 2—3 together. Peduncle 1—2¼ inches long, terete, clothed and coloured like the stem. Calyx 5-cleft, tube obconical, lobes leafy unequal, two being about twice as long as the rest, shorter lobes membrane-margined 3—6 lines long, longer lobes 6—11 lines long, semiterete subacute; the whole minutely papillate, clothed outside with fine short hairs, lobes dark green, tube paler. Corolla 1½ inch diameter, petals straight, not very numerous, about 3 seriate, bright purple on both sides, linear, apex obtuse, entire or minutely denticulate. Stamens about ¼ as long as petals, filaments pale yellow, anthers bright yellow. Stigmas 5, slightly shorter than stamens, turgid-cylindric acuminate, apex shortly aristate.

Introduced from South Africa by Mr. T. Cooper.

This species is closely allied to M. Sutherlandi, described last year in the *Botanical Magazine*, but the leaves are much the narrower, the flowers smaller with straight (not falciform) petals, the stigmas with a much shorter arista, and lastly the perennial habit will distinguish it from that species, for M. Sutherlandi is remarkable for its stems dying down to the ground every year, *i. e.*, it produces annual stems from a towards the apex in a wild flower (dried of course). In the living flower it is emarginate at its anterior side, and vanishing gradually, towards the base. The column has no hollow at its base, and a shallow margin with a dorsal apiculus around the anther. I have to thank for fresh, very satisfactory specimens, Messrs. Veitch, who obtained it from Australia under the name of D. Kingianum. I have been lucky enough to see the typical specimens preserved at the Kew Herbarium. The description quoted before is not very satisfactory; but, to crown the work, there comes this remark—"Species praclaro inventori dicata proxime venit D. macrantho et D. calcarato et insula Vanikoro et D. lancifolio a Bouron Malaccarum." Those are species of Achille Richard (*Voyage de Découvertes de l'Astrolabe*). Now, our astonishment will be easily understood by every Orchidist, if we mention that A. Richard's D. macranthum is no Dendrocoryne, but a Stachyobium, with a totally different flower, no doubt widely spread in Oceania (Samoa; Tutailla; Samoe Urala; Taiti; Vanikaro). The D. Achillis, Rchb. f. (calcaratum A., Rchb.) is a Pedilonum near Dendrobium secundum, and D. lancifolium, A. Rich., is a very peculiar plant, like a very thin-stemmed Pedilonum (flowers like those of D. cumulatum, Lind., but lip three-lobed). It has



Fig. 19.—Mesembryanthemum hirtum. Flowers purple.

perennial rootstock, a peculiarity that I think is possessed by no other known species of the genus.

This and M. Sutherlandi belong to the section Relaxata, and should range next to M. relaxatum. *N. E. Brown, Herbarium, Kew.*

Dendrobium Mooreï, *F. Mueller, Fragmenta*, vii., p. 29.

It is very pleasant to see this species alive, the more so since we may hope to have D. Petri soon at the same place—the Chelsea Royal Exotic Nursery—in flower. This species is far more slender in its bulb than Dendrobium Kingianum, and has as many as four oblong acute, bidentate leaves, of the texture of those of the just-named species. The inflorescence of five to ten flowers bears those organs in very different directions, nodding, upright, and turning inverse. They are as white as those of a Lily of the Valley, except a slight greenish hue on the ovary, and the pedicel, too, is white. Both sepals and petals are very narrow and connivent, and the spur just equalling the ovary, and not reaching the pedicel, is rather flat on the hinder back side and retuse. The narrow, linear-lanceolate acuminate lip has a triangular blunt lobe on each side in the middle or below it or towards the base, and between these lobes a fleshy callosity is placed. This callosity is easily understood by an Orchidist, and I found it trapezoid, bilobed towards the base, three-lobed the inflorescences terminal and lateral, and has but one affinity, with D. Huttoni, Rchb. f., only known from the establishment of Messrs. Veitch. What can a perplexed author do when a species is compared at once to such different things—if he is not so lucky as to get a type? But this is not enough. Mr. Robert D. Fitzgerald, whose great merit it is to give representations taken from the living Australian terrestrial Orchids, begins now to publish in Australian public papers! It is by a lucky accident (by the kindness of the Colchester New Bulb Company) that I obtained a description of a Dendrobium falcoglossum, more poetical than scientific, from the *Sydney Morning Herald*, November, 1876. If this model were followed botanists would have to subscribe at once for all papers. Sir Joseph Hooker might write in the *Times*; Dr. Regel, in the *Golos;* M. Bureau in the *Débats;* Geheimrath Fenzl in the *Neue Freie Presse;* Professor Baron Cesati in the *Voce della Verita.* The fullest Babylonian confusion would accrue, and at such places as Kew Herbarium, the British Museum, and the Jardin des Plantes, extra rooms would have to be provided with *employés* reading all the papers of the world and hunting for botanical articles. Or the Ministers of Foreign Affairs might place on their staff some botanists, so that the expense of paying all the papers for the botanic articles might be saved, provided botanists of polyglottic education were found. *H. G. Rchb. f.*

Peristeria cerina, Lindl.

It is a quarter of a century since I had a fresh inflorescence of this old Orchid, only two of which were preserved in my herbarium. Now I have the fresh inflorescence of five waxy, light brown flowers, which reminds me of Cœliopsis and Schlimia. It is pendulous, and bears ascending flowers rather larger than those represented in *Botanical Register*, tab. 1953 (1837). It is very remarkable to see the deep union of all three sepals, though the lateral ones are connate even higher. The lateral wings of the lip are very small and incumbent on the nail of the column, which is angular on each side at the base. The epichiliumis concave with serrate inflexed anterior margins and a bilobed, overlapping and thickened apex. Once it was much flowered at Hamburgh with P. pendula and guttata. I remember a Berlin friend's conversatinn, who informed me (it was not jealousy, but not very far from it,) that at the Berlin flower shows those Hamburgh people, Senator Jensch and Messrs. Booth sent their enormous specimen Orchids, grown by Messrs. Kramer, now among the patriarchs of Orchid growers, and Mr. Boysen. Amidst those treasures those Peristerias were beloved plants of the highest attraction. Where are those days? How much has taste changed! I have not seen a living spike of Peristeria pendula in the whole of my life, and so very little of P. guttata and cerina, that I feel the more grateful for the pleasure of sketching Peristeria cerina from fresh flowers Sir Trevor Lawrence very kindly sent me. *H. G. Rchb. f.*

NOTES ON FRENCH HORTICULTURE.

Market Plants.

Plants for the million seem the order of the day in Paris. Most of the plants are more common and more cheap than those offered in the markets or shops of London or other large towns. Not but what good showy plants are cheap enough at home on the outskirts of our markets or carters' carts. The cheapness, not the dearness of plants in our large towns, is what startles and surprises provincials. And to those with the practical knowledge how to buy, good plants are as cheap at home. But they seem even cheaper and far more numerous in Paris. The flower markets are everywhere crowded with plants in pots, in groups of dozens or scores in easily portable wicker baskets or pans, &c., and the greengrocers' shops are equally crowded. There may be few or no flowers, there is sure to be any number of plants.

The most popular and attractive plants in Paris are the Marguerites or large Daisies—or single white Pyrethrum fructicosum or Chrysanthemum leucanthemum or montanum, of which there are several varieties differing osmewhat in their stature and size of flowers, but all being alike in being white and also single. The quantity of those grown and sold passeth comprehension. They are met with everywhere, of all shapes and sizes. Some of them in the flower-shops in the Boulevards and chief streets, are trained table-fashion as standards. These vary from 1 yard to nearly 2 in height, and from 1 to 2 or more yards across, as level as a die, and white as snow. They are very striking as standards, and bear cutting and keeping into form remarkably well. Of course many of those fine plants have seen several seasons, and are kept safe from severe frosts in the winter. But the majority of the Marguerites offered in the market are comparatively small. Nice plants are grown and flowered in 4, 6, or 8-inch pots, and groups of bushy plants are offered in pans or wicker baskets at cheap rates for planting out or growing in window gardens, greenhouses, &c. These white flowers do not seem to be very much used for cutting, at least, not in June, at the time my observations were made. It may seem a rapid ascent from Marguerites to Roses. But possibly owing to the month the Rose seemed next in general use and popularity. And the market Roses in Paris were remarkably well done, and also carefully cared for. Most of the plants seemed in 7 or 8-inch pots. By the way, the Parisian pots are much behind ours in quality and form. Mr. Matthews ought to make a note of this. I noticed Doulton's and other English ware, but did not notice Matthews at the Exposition. If not there he ought to have been with his pyramid of pots of such quality as perhaps no one else can show. Also what a huge mistake the French make by writing all their labels in black on a green ground, colours that almost insure illegibility; but the Roses are good, and I never saw finer bud

of La France, and seldom better of Marie Baumann, Baroness Rothschild, &c., than in Parisian flower shops and markets. The plants were also surrounded by a clean sheet of semi-tissue paper, which kept the leaves fresh, and the buds and flowers from the cutting draught.

After Roses must come Begonias of the Ingramii types; these were liberally offered, and are bedded out in thousands, but so do their seasons change in France that very few of the variegated, and hardly any of the tuberous-rooted Begonias, seemed yet to have made their appearance—at least, not in any quantity, but of red and pink flowering Begonias the quantity seemed literally inexhaustible. There were no great quantities of Fuchsias, nor show Zonal nor fancy Pelargoniums; Zonals were also far fewer than at home, and silver and golden Tricolors might be said to be conspicuous by their absence; neither were any Heaths nor hard-wooded plants seen; Petunias were not numerous, and even Mignonette in pots was nothing like so plentiful nor so fine as at home. For climbers the most popular seemed the old Cobæa scandens and the Maurandya Barclayana. The variegated variety of Cobæa was not seen, and the others were evidently all seedlings rather young and weakly. Very few of the finer, or indeed any Clematis were seen, nor Tropæolums, nor Nasturtiums in pots. The Caladiums were of the commoner sorts, and the variegated Callas offered in considerable quantities. Draccenas were pretty plentiful, and Indiarubber plants numerous. Some of the more elegant annuals, such as Gypsophilas, Rhodanthes, Clarkias, &c., were plentiful, and gave a brightness and a glow of colour to not a few of the stalls, shops, and markets, which one seldom sees at home.

The bedding plants, offered in dozens or scores in small rough wicker baskets, were a new feature and remarkably handy and portable for purchasers. In asking the price of some of these and betraying our nationality, we were politely informed that distance from home was no object, as they sent plants to Londres, or any part of Angleterre. These groups of bedding plants were remarkably clean, strong, healthy, well-established, and carefully hardened off, and from their number, variety, and cheapness, showed how many thousands must depend on the flower-markets for the furnishing of the window-boxes, flower-beds, or parterres. A few dozen of these baskets of plants, and the desolate garden of to-day becomes the blooming Paradise of to-morrow. Seldom have I seen finer Begonias, Bouvardias, Petunias, Verbenas, Ageratums, Calceolarias, Iresines, Coleus, Phlox Drummondii, Amaranthus, Cannas, Alternanthera, Lobelia, Echeveria, Sempervivum, Pelargoniums, &c., than those offered in the Parisian markets. These, in fact, enable any one with moderate means to have their window-gardens, small conservatories, sitting-rooms, or gardens furnished equal to the public gardens or squares, with little trouble and almost less expense. This class of plants seems superior in size and cheaper than those offered in the markets of London and other large English towns. *D. T. Fish.*

INSECTIVOROUS PLANTS.

In the second edition of *Withering's Arrangement* (1787), vol. i., pp. 332—334, occur the following passages:—

"Few persons can have observed the Drosera in its native bogs without seeing some of the leaves doubled up; but the cause of this, I believe, was first ascertained in this kingdom by the attention and ingenuity of my friend Mr. Whateley, now a surgeon in London. In the month of August, 1780, that gentleman, being upon a visit in Derbyshire, and gathering some specimens of the Drosera, examined some of these folded leaves, and finding a dead insect in each, was prompted to irritate the upper surface of other leaves by touching them with a pin. The effect was, as he expected, a sudden contraction of the leaf upon the pin. He communicated this curious fact to me, and though the experiment has since failed in my hands, I am satisfied he saw what he described. . . . . Two or three years after Mr. Whateley had sent me an account of his discovery, I was much pleased to find the following account of the Drosera in a German author, which, though it differs in some respects from the observations of Mr. Whateley and Mr. Gardom [a friend who accompanied and corroborated him] yet upon the whole it tends further to illustrate the singular properties of these curious plants:—"July, 1799, Dros. rotundifolia and D. longifolia. I remarked that many leaves were folded together from the point towards the base, and that all the hairs were bent like a bow, but there was no apparent change on the leaf-stalk. Upon opening these leaves I found in each a dead insect. Hence, I imagined that this plant, which has some resemblance to the Dionæa muscipula, might also have a similar moving power.

"With a pair of pliers I placed an ant upon the middle of a leaf of the D. rotundifolia, but so as not to disturb the plant. The ant endeavoured to escape, but was held fast by the clammy juice at the points of the hairs, which was drawn out by its feet into fine threads. In some minutes the short hairs on the disk of the leaf began to bend, then the long hairs, and laid themselves upon the insect. After awhile the leaf began to bend, and in some hours the end of the leaf was so bent inwards as to touch the base. The ant died in 15 minutes, which was before all the hairs had bent themselves. On repeating the experiment, I found the effects to follow sooner or later, according to the state of the weather. . . . The same experiment being made on the D. longifolia the same effects followed, but more rapidly." . . . *Wroth. Bytrog.*, p. 64. These accounts will, I hope, occasion numerous observations to be made upon this British Fly-trap, which so nearly approaches in its wonderful properties to the Dionæa muscipula or Venus Fly-trap, a native of the bogs of Carolina. It is natural to inquire whether this destruction of insects be not necessary to the welfare of the plant?"

So far Withering. One word as to another property held in common by Drosera and Pinguicula, that from which the latter derives its technical name, and also its vernacular one of "Butterwort." This is the coagulation of the "curd" or "casein" in milk. This is done artificially in cheese-making by "rennet," the prepared inner membrane of the "abomasum," or fourth stomach of the calf. This secretes the "gastric juice," which is mainly water with free hydrochloric acid, and a minute quantity of pepsin. Dilute acid alone takes days to dissolve albumenoid substances, though it will separate curd from whey almost instantaneously, so much of the digestive power of the gastric juice must be attributed to pepsin. Either pepsin or a closely allied substance had been found in Nepenthes, and probably in Drosera, but, though needful for digestion, it is not so for coagulating casein. This occurs spontaneously—for instance, when the sugar of milk is converted by a micro-fungus into lactic acid, *i.e.*, when milk turns sour.

These facts may have some bearing on some well-known phenomena connected with a very beautiful tree, Carica Papaya, the Papaw. This remarkable plant, whose Stephanotis-like flowers, and Fig-like foliage I recently had the pleasure to see at Sir George Macleay's, has a fruit said to contain fibrin, to taste like meat, and to be very antiseptic, whilst the whole tree renders meat tender, when it is suspended amid its branches. Now fibrin, like all other albuminoids which occur in meat, is remarkably unstable. A little acid soon acts upon them, and they themselves act as "ferments" in spreading that solution of previously insoluble albuminoids, which is the first stage both in digestion and in putrefaction — rendering meat "tender." It is possible that the initiation of this "indirect fermentation" may act as a check on that produced by septic organisms. May we soon get some more light on these problems of vegetable physiology. *G. S. Boulger*, 11, *Burlington Road, Westbourne Park, W., July* 18.

THE DISTRIBUTION OF THE NORTH AMERICAN FLORA.*

Whatever countries beyond the seas we may visit, in the temperate regions of the globe, we find that their vegetation has been invaded, and in many cases profoundly modified, by immigrant-plants from other countries, and these are in almost all cases natives of North-western Europe. Nearly forty years ago I arrived at night at the Falkland Islands, when a boat was sent ashore to communicate the ship's arrival to the Governor; and, being eager to know something of the vegetation of the islands, I asked the officer in charge of the boat to pluck for me any plants he could feel for, as it was too dark to see anything, and the armful he brought to me consisted of nothing but the English Shepherd's purse. On another occasion, landing on a small uninhabited island,† nearly at the Antipodes, the first evidence I met with of its having been previously visited by man, was the English Chickweed; and this I traced to a mound that marked the grave of a British sailor, and that was covered with the plant, doubtless the offspring of seed that had adhered to the spade or mattock with which the grave had been dug.

It was hence no surprise to me to find myself, on landing at Boston last summer, greeted by Western European plants that had established themselves as colonists in New England. Of these the first was the wild Chicory, growing far more luxuriantly than I ever saw it do elsewhere, forming a tangled mass of stems and branches, studded with turquoise-blue blossoms, and covering acres of ground; the very next plants that attracted my attention were the Ox-eye Daisy and Mayweed, which together whitened the banks in some places, and which I subsequently tracked more than half-way across the Continent.

These, and more than 250 other Old England plants, which are now peopling New England, were for the most part fellow emigrants and fellow colonists with the Anglo-Saxon, having (as seeds) accompanied him across the Atlantic, and having, like him, asserted their supremacy over and displaced a certain number of natives of the soil.

Turning to the hotter parts of North America, the same process of invasion by natives of the Old World is going on; a British-Indian plant* has established itself in the streets of Savannah, and so entirely simulated the habit of a native weed, that American botanists gave it a new name, regarding it as indigenous; and one of the most curious cases of plant invasion known to me is that of the Mango tree in Jamaica, which reminds one of the accounts of captured tribes, which, after being carried into their conqueror's country, have so increased and multiplied, as eventually to dispossess and supplant their captors. In 1782 Admiral Rodney took a French ship, bound for St. Domingo from Bourbon, with living plants of the Cinnamon, Jack-fruit, and Mango, sent to the Botanical Gardens of the former island by that of the latter. These undistinguished prizes the Admiral presented to the Jamaica Botanical Gardens.

There the Cinnamon was carefully fostered, but proved to be (as it is to this day) difficult of culture in the island; whilst the Mango, which was neglected, became in eleven years as common as the Orange, spreading over lowlands and mountains from the sea-level to 5000 feet above it. On the abolition of slavery immense tracts of land, especially Coffee estates, relapsed to a state of Nature, and the Mango being a favourite fruit with the blacks, its stones were flung about everywhere, giving rise to groves along the roadsides and settlements; and the fruit of these again, rolling down hill, gave rise to forests in the valleys and on their slopes. The effect of this spread of the Mango has been to cover hundreds of thousands of acres, and to ameliorate the climate of what were dry and barren districts, by producing moisture and shade, and by retaining the rainfalls that had previously evaporated, besides affording food for several months of the year to both negroes and horses. It may well be, that by future generations in Jamaica, Admiral Rodney will be known less for his victory over Count Grasse, and being the first to "break the enemy's line," than as the capturer of the Mango tree in the Spanish Main.

And it is the same in all countries colonised by the Anglo-Saxon; so firmly have the plants he has brought with him established their foot, or, rather, root-hold, in the soil, that were he and all other evidence of his occupation to disappear from North America, these, his fellow-emigrants, would remain as witnesses of his former presence, not only on the shores and in the forests of the older States, but in the interior prairie and the newly settled valleys of the Rocky Mountains themselves.

Time does not permit me to dwell longer upon this subject of immigration during the historic period. I must now hasten to consider the flora of North America as it was for an indefinite period before the arrival of the Anglo-Saxon, embracing prehistoric and geological epochs: we have to regard this flora as a whole, and as subdivisible into local floras, characterised by the prevalence of certain assemblages of plants; to connect these local floras with the geographical features of the areas they occupy; to account for their position and composition by a reference to the countries from which their components may have been derived, and to the means of communication

* An address by Sir Joseph Hooker, K.C.S.I., Pres. R S., on April 12, 1878, before the members of the Royal Institution.

† Lord Auckland's Island, south of New Zealand.

* Fragaria indica, Andr. (Potentilla Durandii, Torr. and Gr.).

which exist, or may in former times have existed with these countries.

Before proceeding with this inquiry I will indicate, with the aid of the map, those prominent features of North American geography, which have regulated the distribution of its plants.

PHYSICAL CONFORMATION OF AMERICA.

In the Arctic regions the three northern continents approach, and the hydrography and geography of those regions favour the assumption that in former times they may have been connected. Next we observe that in the American continent (unlike the European and Asiatic), the great obstacles to the intermingling of floras, the mountain chains, are longitudinal; as are the principal valleys, which are the great aids to their diffusion. If we now run a section across the continent along its principal parallel (that near 40°), which approximately coincides with the isotherm of 55°, we find that such a section represents tolerably well any other parallel to it in those meridians in which there is the greatest development of a temperate vegetation. Commencing on the east, there is first the Atlantic seaboard, bounded to the westward by mountain ranges of moderate elevation (rarely attaining 6000 feet), which under various names extend from New Brunswick, in lat. 48°, to Alabama and Georgia, in lat. 34° (and which have been collectively called the Appalachian chain). Westward of this chain are the broad, low, well-watered valleys of the Ohio, Mississippi, and Missouri, the latter in its intersection with our principal parallel being nearly midway across the continent and 1300 miles from the Atlantic. From the Missouri the ascent is very gradual to the elevated region of the Rocky Mountains, which consist of a complicated series of rocky ridges rarely exceeding 14,000 feet elevation, occupying a belt 300 miles broad from east to west. These ridges inclose very large, well-watered, open grassy valleys, called Parks, the rivers from which usually discharge from the range through narrow gorges, called Cañons.

The parks and valleys to the east of the mountainous belt present the gray-green (grassy) vegetation of the prairie, those on the west, the hoary sage-bush (Artemisia) vegetation of the dry country to the westward; and these often intersect, so that a transverse ridge may separate a green and well-watered park from a hoary and dry one.

The descent from the Rocky Mountains on the west, is on to a tract elevated upwards of 4000 feet above the sea, extending for 400 miles to the foot of the Sierra Nevada. This tract is intersected by several short ranges 8000 feet high and upwards; its climate is dry, its soil saline, and many of the rivers lose themselves in salt lakes and marshes, whence the local names of Great basin, and of the Sink, Salt-lake, and Desert regions. The Sierra Nevada succeeds, rising steeply to an elevation of 12,000 and sometimes of 15,000 feet. Under various names it traverses America, with little interruption, from Alaska to Southern California, at a distance of 100 to 150 miles from the Pacific; but its breadth is nowhere so great as that of the Rocky Mountains. The descent from it to the westward is into the great valley of California, whose floor is raised but little above the sea-level, and between which and the Pacific are the low and narrow coast-ranges, of which the southernmost in southern California unites with the Sierra Nevada.

Turning now to the flora of North America north of the tropic, we find that the distribution of its plants is in remarkable conformity with its geographical and climatal features, being in meridional belts from the Arctic Ocean to the Gulf of Mexico; the botanical components of these belts differing more and more in advancing south, till in the principal parallel that we have traced, the diversity between the eastern and western belts is greater than between any two similarly situated regions on the globe.

POLAR AREA.

Commencing in the Polar area, the Arctic American flora, though on the whole a uniform one, is distinctly divisible into three; the first extends from Behring's Straits to the mouth of the McKenzie River, and is marked by the presence of certain Asiatic genera and species that advance no farther eastward: the second extends thence onwards to Baffin's Bay, and presents various American genera and species not found either eastward or westward of it; and the third is that of Greenland, which is almost exclusively European, and presents several anomalies, which I shall hereafter discuss. Besides this eastern and western distribution of the Arctic flora, it streams southward along the three meridional mountain chains of the continent.

BRITISH NORTH-AMERICAN FLORA.

South of the Arctic flora is that of the British possessions, that is of temperate America north of the 47th parallel; it consists of a mixture of North European, North Asiatic, and American genera, in very different proportions, disposed in five meridional belts. 1, to the eastward, the Canadian forest region; 2, the woodless region, a continuation of the prairie region farther south; 3, the Rocky Mountain region, where Mexican genera appear; 4, a dry region, a continuation of the Desert or Sink regions to the south of it; and 5, the Pacific region, which assimilates very closely in its vegetation to that of Kamtschatka.

UNITED STATES FLORA.

It is on entering the United States that the flora of temperate North America attains its great development of genera and species in all the meridians, and that the boundaries of the meridional belts of vegetation are most strictly defined.

I. The Great Eastern Forest region, extending over half the continent, and consisting of mixed deciduous and evergreen trees, reaches from the Atlantic to beyond the Mississippi, dwindling away as it ascends the western feeders of that river on the prairie. It is

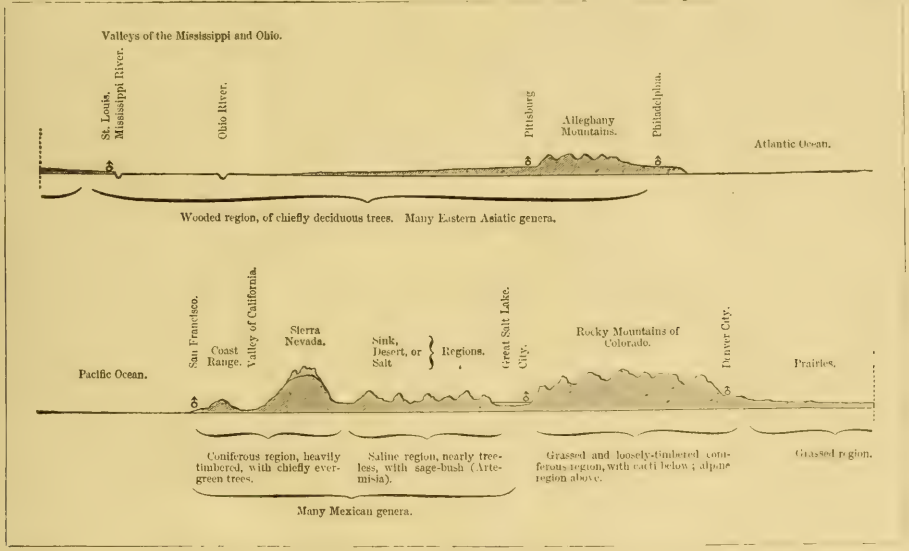


FIG. 20.—SECTION OF THE NORTH AMERICAN CONTINENT IN ABOUT LAT. 40°.

noteworthy for the number of kinds especially of deciduous trees and shrubs that are to be found in it, even on a very limited area. Of this I shall select two examples from my Journal. One was a patch of native forest, a few miles from St. Louis, on the Missouri, where in little more than half an hour, and less than a mile's walk, I saw forty kinds of timber trees,* including eleven of Oak, two of Maple, two of Elm, three of Ash, two of Walnut, six of Hickory, three of Willow, and one each of Plane, Lime, Hornbeam, Hop-hornbeam, Laurus, Diospyros, Poplar, Birch, Mulberry, and Horse-Chestnut; together with about half that number of shrubs.

The other example was afforded me by Goat Island, which divides the great cataract of Niagara, and covers less ground than Kew Gardens. Here the vegetation was more boreal and less varied than in Missouri; but with Dr. Gray's aid I counted thirty kinds of trees, of which three were Oaks, and three Poplars, together with nearly twenty different shrubs.

I know of no temperate region of the globe in which any approach to this aggregation of different trees and shrubs could be seen in such limited areas, and perhaps no tropical one could afford a parallel.

* For the indication and names of them I am indebted to Dr. Engelmann of St. Louis, who took me to the forest.

No less remarkable is the composition of the flora of the Eastern States. Professor Gray has shown that most of its genera are common to Europe and Asia, but very many are all but confined to North-eastern Asia and Western America. This generic identity, however, gives but a faint idea of the close relationship between the East American and East Asiatic, especially the Japanese, floras, for there is further specific identity in about 230 cases, and very close representation in upwards of 350; and what is most curious is, that there are not a few very singular genera, of which only two species are known, one in East Asia, the other in East America; and in some of these instances the Asiatic species is a wide-spread plant in East Asia, whilst the American is an extremely scarce and local plant in its country, which and other considerations render it conceivable that the Asiastic element in East America is a dying-out one.

Leaving out of consideration the purely American genera of this flora, there remain the genera common to Europe, Asia, and America; the genera confined to America and Asia; and the genera confined to America and Europe. I shall give an illustration of the proportions in which these occur by a reference to the principal trees and large shrubs only, their names being familiar to you, though the smaller shrubs and herbs afford infinitely more numerous and striking examples; thus, of those common to the three northern continents, I find in America thirty-eight genera with about 150 species, these include Maples, Ashes, Hollies, Elms, Planes, Oaks, Chestnuts, Nut, Hornbeam, Birches, Alders, Willows, Beech, Poplars, &c. Of those confined to America and East Asia I find in America thirty-three genera and fifty-five species, including Magnolias, Tulip tree, Negundo, Wistaria, Virginia Creeper, Gleditschia, Hydrangea, Liquid-amber, Nyssa, Tecoma, Catalpa, Diospyros, Sassafras, Benzoin, Mulberry, Walnut, and others, which, not being European, are unfamiliar to you. Lastly, of those confined to Europe and America I find only one genus, namely, the Hop-Hornbeam, of which there is but a single representative in each country.

Here, then, is conclusive evidence of the close botanical relationship of North-Eastern Asia and Eastern North America; a relationship of which there is but little evidence in the vegetation of the Prairies and Rocky Mountains, and still less, perhaps, in the regions farther west.

The Prairie Region.

II. The Prairie region succeeds, a grassy land with many peculiar herbaceous American genera, including Mexican types, of which last the most conspicuous are a Yucca and Cacti, which latter increase in number as the Rocky Mountains are approached, where they form a noticeable feature in the landscape.

In the parks and lower valleys of the Rocky Mountains deciduous trees are few and scattered, and the forest is an open one of Conifers, amongst which a Pine, allied to the American Nut-Pines, P. edulis, first appears. Higher on the mountains the Coniferous forests are dense, and almost the only deciduous tree is an Aspen, which forms impenetrable brakes on the slopes and in the gullies. Above the forest region are the subalpine and alpine regions, presenting a mixture of European, Asiatic, and American types.

III. Descending to the Sink region the Cacti and Yucca almost disappear, though they increase to a maximum farther south in this meridian. Deciduous trees are very few, and confined to the gullies of the mountains, and Mexican genera increase in numbers. The Hoary Sage-bush (Artemisia) covers immense tracts of dry soil, and saline plants occupy the more humid districts.

Another Nut-Pine of Mexican affinity (P. monophylla) traverses the centre of this region in a narrow meridional strip, and the proportion of endemic plants, herbaceous especially, is very large.

IV. The Sierra Nevada is clothed with the most gigantic Coniferous forest to be found on the globe, amongst which a very few species of deciduous trees are scattered; but none of these are identical with trees of the eastern forests, though several are representative of them. New Mexican genera occur at all elevations from the crest of the range to its base, and thence extend across the Californian valley and the coast-ranges to the Pacific, mixed with northern West American genera and species.

(To be continued.)

THE CARNATION AND PICOTEE.

The promoters of the National Exhibition held at South Kensington must be gratified by the extended notice of the show, and also by the prominent Editorial remarks in last week's *Gardeners' Chronicle*. Others besides the Editors noted the white cards used to support the flowers, and probably went away with the notion that the cards were used solely to keep flowers together that had burst their calyces; if so, they are in error. The cards are used to show off the flowers to the best advantage. Your readers will probably be surprised to learn that many collections there did not contain a single flower with split pods. There always used to be a clause to the effect that any collection containing a flower with a split pod would be disqualified. The committee erased that clause in this season's schedule, as it was thought it might keep small growers from exhibiting.

The best way to arrive at a satisfactory conclusion whether flowers would show to the best advantage with or without cards, would be to set up a stand both ways, and place them together; if this were done I fancy most people would select the carded collection. Many of the best flowers, such as Admiral Curzon, S. B. Carnation; and Mrs. Lord, rose edged Picotee, ought always to be bloomed on cards; the petals reflex so much backwards that the effect of the brilliant colours of the one, and the delicate rose edge of the other, is altogether lost. On a card they are amongst the best in their individual sections. As to the colour of the cards, it is certain that no other answers so well as white. If I do not advocate any changes in the arrangement of the flowers and stands, I do think that the stands might be arranged more effectively. In such a large exhibition the long lines of stands look formal and monotonous to the general visitors.

The growers themselves are so much interested with the individual specimens that they seldom think much of the general effect. The stands are either arranged on both sides or only on one side of long tables. In either case I would have a single or double row of Ferns and foliage plants in 5 or 6-inch pots behind the stands. It would also be desirable to divide certain classes by a group of plants of a different character; large plants would be out of place, nor should the groups used to divide the classes be taller than from 2 to 3 feet. The groups might be formed of such specimens as are exhibited by Messrs. Veitch, Bull, Williams, and others of the principal nurserymen. I may on another occasion return to this subject; in the meantime I should like to hear the opinion of Mr. Dodwell and others.

I would just like to make a few further observations on the most noteworthy flowers. Beginning with Carnations, one is struck with the large number o flowers that have been in cultivation for more than a quarter of a century, and some even fifty years old are yet as good if not better than those recently introduced. In the principal class of Carnations, Scarlet bizarres, old Admiral Curzon is still the best flower, and True Briton (Hepworth) another old sort, took the first prize in its class. The old florists studied refinement in the flower, brilliant and decided colours, with breadth and smoothness of petal. Flowers with a bunch of petals that must needs burst the pod, before they could expand themselves, were rejected. The best of the modern raisers still hold to the same opinions, notably Mr. Ben. Simonite, of Sheffield; he considers 25 petals a sufficient number for the best flowers; a larger number looks confused and breaks up the outline. In the next class Crimson bizarres, Jenny Lind was first in the classes, although it was not the best C. B. in the show. J. D. Hextall (Simonite) is probably the best in this class; but Rifleman, Eccentric Jack, John Simonite, and Capt. Stott are all in the first place. In Pink and purple bizarre the good old delicately tinted beauty Sarah Payne is quite the best, but James Taylor is a very desirable sort. Purple flakes have been much improved in recent years. James Douglas (Simonite) was first in the class, and I fancy it is the best purple flake. Mr. Ben Simonite himself gives this honour to Dr. Foster, a flower well coloured with him, but always wanting in colour "down south." Earl Stamford is also a very fine flower. The Scarlet flake John Bailey (Dodwell) took premium; as shown it was very well marked. It must have been very gratifying to Mr. Dodwell to see a flower raised by him more than twenty years ago in such a high position. Clipper was also fine, and Sportsman, which usually stands in the highest place, was eclipsed by Jackson's Annihilator. In Rose flakes a rather new flower named Sybil (Holmes) is very fine, and gained the first prize in its class; but Flora's Garland, raised fifty years since, was well shown, and John Keet, James Merryweather, and Rose of Stapleford, are always to be depended upon.

Coming now to the Picotees, we find that all the best flowers are of comparatively recent date. In red edges, J. B. Bryant (Ingram) gained premium this year, an honour which fell at the show in 1877, to another heavy red named John Smith. Princess of Wales added to these will make a trio of heavy-edged reds not easily matched. Light reds is a weak class, there are some flowers raised by Mr. Simonite not yet sent out, but they will when well known take a leading place. At present Thomas William (Flowdy) must take the highest place, but Mrs. Bower (Bower), Clara (Bower), and Rev. F. D. Horner are very fine. Heavy edged purple flowers were well represented by Zerlina, a fine new flower raised by Mr. Robert Lord of Todmorden, Alliance (Fellows); Norfolk Beauty (Fellows), Mrs. Summers (Simonite), were all in good form. The new variety, Mrs. Albert Chancellor, is a decided acquisition in heavy purples. There are some singularly beautiful flowers in the light purple edges. Mary (Simonite) was first and second in the class, and stood very high in the stands; there is no Picotee has a broader, smoother or more massive petal. Ann Lord (Lord) was better last year than it has been this, still it is a very pretty sort with fine wire edge. Lord's Minnie; Mrs. Little (Hooper); Mrs. Douglas (Simonite), are all good and distinct. In Rose and Scarlet edges, the heavy class was well represented by Edith Dombrain (Turner) a pale edged flower with much refinement. Fanny Helen (Niven) is very clear in the white, and has a distinct smooth edge. Juliana is the best and Obadiah the second best of the Scarlet edges. Royal Visit, raised by Dr. Abercrombie, and exhibited by Mr. C. Turner, is a grand heavy edge, rather brighter in colour than Edith Dombrain. In the medium and light edges Miss Wood, Mrs. Allcroft, Ethel and Miss Williams are usually to the fore, as they were also this year. Of new varieties Mrs. Payne, a medium edge, and Victoria light, exhibited by Mr. Turner, promise to hold high positions.

Before concluding these remarks a word of commendation should be given to Mr. Turner for his fine set of yellow Picotees, raised from Prince of Orange. All of them possess the strong constitution of that useful variety. All the pot plants that gained him the first prize were seedlings from that sort. Ophir is a fine clear yellow; Earl of Beaconsfield is very distinct; Alice is probably the best of the set, the petals are broad and smooth, flaked and edged with scarlet. Henry Tait and Eleanor are also distinct sorts. The above received first-class certificates. *J. Douglas.*

Notices of Books.

Australian Orchids. By R. D. Fitzgerald, F.L.S. Parts 1, 2 and 3. Thomas Richards, Sydney, New South Wales. Folio, Coloured Plates.

This charming work is a valuable and most interesting contribution to our Orchid literature; the three parts now before us contain together twenty-seven plates, representing thirty-nine species, and although it is only five years since the Australian Orchids were monographed in the *Flora Australiensis*, yet out of these thirty-nine species no less than eleven are new to science, or rather more than one-quarter. From this we may expect that the species yet to be discovered will be nearly or quite as numerous as those already known. Perhaps the most interesting of the new species is Adenochilus Nortoni, inasmuch as the only known species of the genus is a native of New Zealand, and has apparently only been found by one collector. The discovery of a member of this genus in Australia serves further to connect the floras of the two countries.

The plates are all coloured except the first, which illustrates very fully the various parts of the flower in such a manner, that any one previously unacquainted with Orchid structure may easily comprehend it. All are drawn from Nature by the author, and are faithful lithographic illustrations, giving very full details of structure. They are printed on pale stone-coloured paper, though we cannot but think they would look much better on white paper. They are not numbered

or arranged in any order, the author stating that "the order of publication is not that of final arrangement."

Australian Orchids will form a companion work to Bateman's *Odontoglossum* and Warner's *Select Orchids*, &c., but is a much more interesting book, Mr. Fitzgerald having made it highly attractive by the manner in which he has described the mode of fertilisation of many of the species; in this respect it stands almost unique among descriptive botanical works, and can only be compared with Darwin's fascinating book on the *Fertilisation of Orchids*. Mr. Fitzgerald's language is simple and expressive, and his style somewhat like that of our great naturalist, of whom it is evident he is a great admirer and supporter. The much-vexed question as to what should constitute a species and what a variety is well argued under Pterostylis cycnocephala and P. mutica, where he writes:—

"The objection so often raised against the Darwinian theory, in the form of a demand that any absolute (that is, present or recent) alteration in species be pointed out, can only, it seems to me, be answered through such investigation and determination as to whether the form called a variety reproduces the form called a species. . . . The first step towards such proof must be through the most accurate description or careful delineation, so as to stereotype present forms for future comparison, and the forms best suited for the purpose are those that, generally resembling each other, differ on some one specific point. The salient point of difference between P. cycnocephala and P. mutica is, that in one where the labellum closes the flower, the point of the appendage to the labellum turns down into a little hollow just large enough to receive it, in the other it turns up. It would be easy to include both under one name and species by inserting in the description such words as "appendage variable either turned up or down. But does the one form ever produce the other? And, if not, why should they be forced together by a union only in name? On the other hand, if they were once the same—and there has been a variation that does not relapse into the original form—is not the variety a new species? Or in what respect is it not a new species? Though of course both can be included under the one name, and the departure lost sight of by an extension of the specific description, which is nothing more than a begging of the question, unless it be ascertained that, with or without change of soil or climate, the one relapses into or reproduces the other."

This is perhaps as good a definition as can be given of species and variety, and is adhered to in all cases by Mr. Fitzgerald, but it is not always possible to apply it, though it might be applied much oftener than is done with profit, for it has become a common thing for botanists to place two or more forms together as varieties of one species without any evidence to prove them such, and this grouping or lumping together of distinct forms is oftentimes an inconvenience rather than a benefit, especially to those who know the forms in a wild state, and, as Mr. Fitzgerald says in another place: "To include a great number of very distinct varieties under one species cannot, if it be possible to avoid it, be satisfactory. The general reason for thus including them is that intermediate forms have been obtained. This may not have been sufficiently attended to formerly, but is not too much being made of it now? Could it not, and should it not, to be consistent, be carried out to the union of all our species, or nearly so, of Eucalyptus into one species, all our Acacias, &c.? And, if all the forms of the world were brought together, might not many others, such as Hibiscus, be similarly united?"

The introduction contains much interesting matter concerning distribution, fertilisation, fertility, &c. Concerning the fertility of the Australian species, it is shown that in many species which are fertilised by insect agency an abundance of flowers may be produced, but few or no capsules result. As an instance he cites a specimen of Dendrobium Hillii, which in 1872 bore about "40,000 flowers, and yet did not produce a single seed," whilst in the self-fertilising species all or most of the flowers produce seed. Apart from this the fertility of the seed is estimated, for although a plant may produce very few capsules, yet each capsule contains a vast number of seeds, but it is found that only a very minute proportion of the seeds vegetate. After citing several instances, the debtor and creditor account, as Mr. Fitzgerald calls it, of Dendrobium speciosum is thus stated:—"Against it that not one flower, say in a thousand, produces a capsule. For it that that one capsule contains half a million of seed. Against it that possibly, if not probably, out of the half million not one seed vegetates. For it that it is long-lived and hardy. This statement cannot be considered to place D. speciosum in a very solvent position, and were it not for the last item, I believe it would long since have become extinct. In support of this opinion, it may be stated that in any situation, even on the summit of flat moss-covered rocks, where they frequently grow, and where the seed might well be expected to vegetate, the masses consist of a few large plants, and very few young ones are to be seen, notwithstanding the quantity of seed that must fall and rest in such a place when even one capsule bursts over it."

These statements are quite in accordance with similar ones put forth by Darwin in his *Fertilisation of Orchids*.

The book is written entirely from the Darwinian point of view, and a strong point is made in favour of the theory of evolution in the Introduction, where Mr. Fitzgerald compares the manner of fertilisation of Thelymitra ixioides with that of T. carnea. He says:

"Much has been made of 'design,' which might be viewed in a different light, as adaptation. Certain parts of plants and animals, being wonderfully designed (or adapted for certain ends, to the palpable benefit of such plant or animal), it is argued that their life or existence, being dependent upon such design, they must have been so created. But what, except inheritance, can account for the extension of similar parts to others where they are evidently useless? The flowers of Thelymitra are of a beautiful blue colour, and are borne in attractive spikes. In the centre of each flower is placed the stigma or female part of the flower; it resembles a shield, covered with viscid matter. At the top of it is inserted, in a notch, a little boss or button called the rostellum, connected with which, and behind the stigma, are the pollen masses, and on either side arms stretch out, supposed to attract and guide to the rostellum. Touch this rostellum, which is covered, as it were, with glue, with the point of a pin, and then withdraw it, and the pollen masses are at once withdrawn from behind the stigma. Return the pollen masses, now firmly attached to the point of a pin, again into the flower, and the greater part of them adhere to the viscid surface of the stigma, and the flower is fertilised. Such is the process, and the only one, by which it can be impregnated; but in nature the proboscis, or some part of an insect, acts as the pin has done in the experiment. Left to themselves under a bell-glass, not one flower of T. ixioides will produce seed. Can there be a more perfect example of predetermined design? The bright colour to attract the insect—the arms to guide it—the projecting rostellum for it to touch—the viscid matter on the rostellum to adhere to the visitor—and the expanded shield-like stigma, covered in its turn with gum to lay hold of the pollen, when the insect either returns its head in search of honey or visits another flower. What trace is there of development? It is a well-adapted whole; a whole well adapted to one end. Now examine another species of the same genus, T. carnea. The flowers are bright pink. Here are the extended arms—the shield-like stigma—the sticky rostellum and the pollen masses behind the glutinous stigma; but there is a slight modification, the pollen masses are not only behind but over the stigma, and crumble upon it whilst yet in the bud, and thereby fertilising the flower, which *seldom* opens, and *never* until after fertilisation. What has become of the picture of design? For what is the colour in the flowers, seeing they so rarely open, and then to no purpose? For what are the arms? What use is the rostellum? Without their aid T. carnea is far more fertile than T. ixioides; in fact every flower produces seed. Why are all those parts so necessary to T. ixioides present in T. carnea? Can they be accounted for by any other explanation than relationship through inheritance?"

There seems to be no limit to the modes by which Orchids are fertilised, even two species of the same genus often being fertilised by quite different modes, as shown in the above abstract, and in a still more remarkable manner in the case of Spiranthes australis. Of this plant Mr. Fitzgerald says:—

"No Orchid examined by me has afforded greater pleasure or surprise than S. australis. Having read the very interesting description by Mr. Darwin of the organisation of S. autumnalis, so wonderfully specialised for the intervention of insects, I fully expected to find the Australian species almost identical in the arrangement of a splitting rostellum, boat-like disk, easily removable pollinia, and labellum falling lower as the flower expanded. But, as though to set analogy at defiance, S. australis is as much self-dependent as S. autumnalis is at the mercy of external influences. To obtain the clue to the fertilisation of this Orchid it is necessary to examine the bud in an early stage, when the pollinia will be found slightly overhanging the stigma and enclosed within the anther to a far greater extent than subsequently, when the anther shrinks back by withering. The pollinia, at first loose and easily removable, touch the upper lip of the stigma and fertilise it at an early stage. After the flower has opened, and for some time previously, they cannot be removed, clearly owing to the connection formed, by the extension of pollen-tubes, between them and the stigma, which is much less defined as to its limits than is generally the case. I could discover no trace of a rostellum or disc of any kind. In this flower the persistence with which the pollinia remain behind the stigma, though left naked by the shrinking back of the anther, is very peculiar, no transfer of the substance of the stigma on the point of a pin or bristle induces them after the opening of the flower to come forth for the chance fertilisation of another flower. It even requires some violence to break them up, as the more friable portion is turned towards the anther. In the very many flowers examined I have not noticed the slightest derangement of the pollinia, or trace of pollen upon the stigma; yet every flower produces a full capsule of seed, and the placing it under a bell-glass makes no alteration in its fertility. In my opinion it is never made fruitful by pollen from another flower, nor in any other way than by contact of the extreme edge (and possibly part of the inner side) of the stigma with the pollinia. The modification or absence of parts leading to so great a difference in reproduction in two species so closely related as S. australis and S. autumnalis is very interesting and instructive; it illustrates the very slight degree in which results can be anticipated in the study of Orchids, and how greatly their very existence may depend on alterations that leave the plants in the same genus, or may be, by oversight, in the same species."

Space will not permit us to make further abstracts, but sufficient have been given to show the style of the book. We have only to add that its general plan is to give some account of each genus of which species are figured, then under each species an account of the distribution, habitat, time of flowering, manner of fertilisation, and general description, &c. Altogether the book is a most satisfactory one; there is only one thing that needs remedying, viz., the insertion of the date on which each part is published, which although of trivial matter to the general public is an important one to the botanist.

THE EDELWEISS AND THE FORGET-ME-NOT.

We doubt if even the Rose is so much in favour as the Forget-me-Not. Its story is known to all and, its associations are such as most people feel too tenderly about to be willing to speak of, *coram publico*. A legend similar to that which invests the Forget-me-Not with so much interest, applies to the Swiss Gnaphalium or Leontopodium, its bracteal leaves suggesting a resemblance to the claws of a lion. In the illustration which accompanies this note at p. 149, Mr. Fitch has drawn for us both these plants, the Edelweiss and the Alpine Forget-me-Not, Myosotis alpestris.

The Edelweiss, the extinction of which the Swiss government, we hear, are going to prevent by legal enactments, is more curious than beautiful, and is esteemed a suitable decoration in lieu of a feather, for the wideawakes of Alpine tourists, as a memento of their exploits, in place of alpen-stocks, decorated with the burnt-in names of places, where, perchance, they have never been. The demands of those ambitious of cheap fame, appear to have fostered a host of eradicators, to cater for the Alpine fancy, hence the protective enactment.

In Britain it has been rendered necessary to legislate for the protection of wild birds, for the same reason; but as yet the law has not reached our wild plants, which, owing to the greed of eradicators, under the cognomen of botanists, are becoming more and more rare—nay, some are extinct; and owing to the spread of a taste for having in a garden what would look better wild, we shall soon have to go far afield to find a Primrose or a Fern. Would that eradicators would exercise their spuds on such plants as Docks, Dandelions, and Thistles, and deserve thanks instead of reprobation. We have heard of a collector who, on once calling on a country botanist, to inquire the whereabouts of a rare English plant, Malaxis paludosa, was asked if he were an "Eradicator," and replied that he was a "Botanist," a talismanic term, which so touched the hearer that he kindly took some trouble to indicate the desired spot, when the "Botanist," espying in a damp spot a single specimen, sprang on the devoted plant and uprooted it, much to the horror of the cicerone.

O where are Cypripedium, the Lizard Orchis, &c., &c.? They are in Herbaria, if not eaten by beetles, and the fortunate owner of the last specimen is not ashamed to boast its possession. If it were the last Dandelion or Shepherd's Purse, he would be more deserving of credit.

The plant associated with the Edelweiss in the cut—which is perhaps rather an artistic liberty—is the Alpine representative of the common Forget-me-not, but it does not affect the same spots as the true one. Our variety grows on the mountain ranges of the North, where it is only seen by few, consequently it is much admired by the lowland many, and coaxed by sundry nurserymen to put forth its charms in lower latitude in some shady corner till it merits the publicity it eschews.

But no plant, however shy, can escape if it becomes celebrated or notorious, and guides who esteemed the plants on their favourite mountains, have been heard to express a regret for the gradual disappearance of some peculiar plants which made the hill one flush of flowers—nay, we have been told of sacks having been brought and filled by collectors for scientific purposes—truly sacking the place. The innocent guide supposed that the plants were to be used for medicinal purposes, for why otherwise should such a quantity be required; he never recked that they were to be distributed to medical students at the Botanical lectures they are obliged to attend as part of their curriculum; and who, as the professor was descanting thereon, perhaps made use of them to tickle the ears of the students before them, or inserted them beneath coat collars.

Such is the story as it is told to us. We must say we doubt its strict accuracy, and our experience leads us to the opinion that the Swiss guides and the Swiss peasantry are quite as much or more to blame than the tourists.

ON THE DESIGNING OF FLOWER-BEDS.

THE following extract from a copiously illustrated essay on the subject of designing flower-beds has been obligingly sent to us by Mr. J. F. Johnson, of Belfast, who has already gained some reputation for his works as a landscape gardener. Mr. Johnson's ideas are



FIG. 21.

very comprehensive; and in so wide a subject, a portion like the present, no doubt, suffers from being detached from its context, but we have endeavoured to eliminate such references as would not be understood. Mr. Johnson writes:—

In working out the present series of designs, I have endeavoured to use the forms in most general use, so

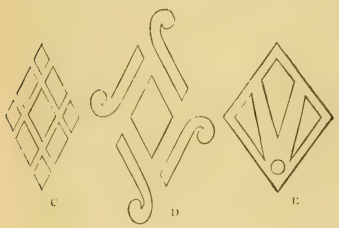


FIG. 22.

as to benefit, as far as possible, by the labours of others. I have collected them from every source, and adapted them in a general way to fit in with what I regard as natural principles. One change I have generally had to introduce is, to make those long sharp points, which look so well on paper, into forms more suited for growing plants. These beautiful fine lines are far more delicately rendered by plant life

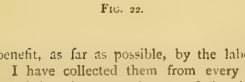


FIG. 23.

than they can be by the hand of man, and therefore, if proper plants are selected, no design need be wanting in fineness. My guide has been Nature. The greatest assistance I have obtained from others has been, I fancy, derived from the illuminators of the middle ages. It is often charming to see how they follow Nature's laws; how each figure differs from each, and yet how pleasantly they all blend together, so as to appear to grow out of each other. Nature's forms present us with a world of wonder beyond these; but, nevertheless, these illuminations assist us to understand what we see with our eyes; they help us to clear away mental blindness, and lead us to the Infinite Maker of all beauty. Some of us might miss seeing much of this beauty were not these stepping-stones by mighty men of old time planted for us.

There are several reasons why I have confined myself to small designs, and these I should like to state here. First, I believe that general designs of too large a scope are more frequently adopted than is required by the necessities of the case from which the designs have sprung. Moreover, my time and means would not allow me at present to give the series as complete as I could wish. Those who require large designs should always secure the advantages of professional advice, which is far cheaper and better than wasting their time and labour without realising any good results. When the true principles of the art are understood, a formal garden can be made of any size free from the confusion too often exhibited. The amount of variety which it is necessary to include in



FIG. 24.

working out a series, is more easily understood in the case of small designs than of large.

The faults I have mentioned as being necessary to correct in the formation of beds, will naturally require equal correction in grouping beds. The object of formal designs, as already stated, is to bring man's formal ideas into harmony with Nature, so as to secure a succession of effects. They serve as margins to mansions, giving the latter a clear base, and causing the lines to flow out, as it were, into union with the surroundings. The usual square brick designs are unsuited *in toto* for this object, the feeling expressed by many of these expensive designs being as lifeless as the bricks or stones employed; but as art should flow into nature, as nature flows into life and form, the flow of the lines should be suitable to the object. In formal gardening there is not much scope in this respect, for the buildings of the mansion give the base from whence the formal lines must spring, thus giving the lines of action into the landscape. Now with the type of bed shown in fig. 21 A and B power is given suited to elevation of plants or ground, as it contains so much of Nature's principles. Every view being different, it possesses



FIG. 25.

great capabilities of effect when properly planted, on account of its ever varying outline, which is an important consideration in making designs, but does not cover the whole art.

Beauty builds upwards its effects with trees and shrubs, carpeting plants, and climbers, and no landscape is complete without this combination, not that the garden need to be a forest or wood, but it should be in harmony with tree form.

The general detail and proportion of designs requires careful consideration. I can give no definite guide on paper. Proportion can be learnt by studying Nature; it is a thing to be felt and acted upon, but not easily explained.

Elevation is not only important in building up effects, but it is also important for seeing the general effect of any ground of considerable extent. The terrace of the Italians and mound of Lord Bacon, I fancy, had these objects in view; and, if gentle undulating paths were properly introduced, many, very many beauties might be seen that are now hidden in landscapes by the levelling system. Every foot of ascent or descent gives a new effect; and it is surprising what an impression of command is gained by even slight elevations. Therefore, in planning a garden, plan also how it is to be brought into sight, in other words how it is to be seen.

The square form is the first comprehended, and students and others before they have gained knowledge of the forms that satisfy their feelings, prefer it to others. Thus it is that they cut their square shapes all over the country and call them gardens, whereas in this mediator of art it is the very opposite that is wanted, for any form is better than the square for securing harmony in the landscape, since all other forms gain the power of light and shade which produce infinity more easily than the definite square. How-



FIG. 26.

ever, as we seem naturally to learn straight lines before undulations, I give one or two figures developing these into designs according to the principles named. Fig. 22 C simply shows diversification without any object gained; fig. 22 D shows means used that would assist an union with Nature; while fig. 22 E more fully illustrates the principles advocated.

In designs for groups of three beds it is usual to see merely variations of fig. 23, but other combinations, as figs. 24, 25, 26, 27, and 28, are obvious, and these I consider of great use for large or small places. Some of those, indeed, which are in my private book of designs, I have developed into gardens. The designs sufficiently explain themselves.

The same remarks apply to designs for groups of four or more beds, of which figs. 29 and 30 are examples. As these embrace both plain figures and those which are more developed, it will be well to say one word about the scale. The scale must, of course, vary according to the object for which the design is intended, but I consider that a point should not be less than 3 feet wide a short distance from its extremity; thus the designs here given would be from



FIG. 27.

12 to 16 feet to the inch. Such designs of four beds, &c., are suited for south fronts of buildings, and may also be adopted for the front of summer-houses, or the margin of mansions, according to circumstances.

In regard to the meeting or confluence of walks I offer some examples in which the walks are furnished

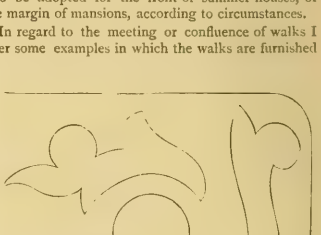


FIG. 28.

with beds near them, each being shown in a different character, and every bed varying. The beds are not arranged along the sides of walks like the sarcophagi in a graveyard, but are adapted to please the eye of

taste. These sketches (figs. 31, 32, 33) show the advantage of natural arrangement, and the proper way of arranging beds on the sides of walks in general. *Joseph Forsyth Johnson, Knockmahore, Green Island, Belfast.*

A PEDESTRIAN TRIP ACROSS SOUTH AFRICA.

(Continued from p. 110.)

From Pretoria's Kop (an isolated mount) at the confines of the fever country, we commenced a gradual ascent, through a well wooded, broken and rugged

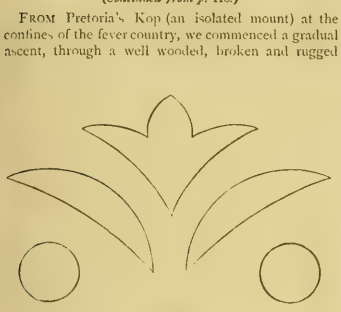


Fig. 31.

district, which is plentifully supplied with water, and is one mass of rounded hills, and deep precipitous valleys. In traversing this part, we had to keep to the grassy ridges—as most of the valleys were filled with an impenetrable jungle and usually very rocky—so that we were compelled to go many miles out of the direct line to the mountains. But, how delightful the journey was,—ahead of us could be seen the bold, lofty, and perpendicular sides of the Northern end of the Drakensburg mountains, running as far as the eye could reach, north and south. Over these stupendous cliffs, at various parts, waterfalls were tumbling their torrents of sparkling waters, which after a run through this beautiful and rugged country, unite and form the Sabia River of the fever and fly-cursed plains of the coastlands. On nearing this gigantic and almost continuous plateau, the vegetation became thicker, trees taller and more abundant; the range appeared higher; waterfalls larger, and caves and ravines increased the beauty of the mountain before us. As the hitherto grassy hills were now covered with trees, we took to the bed of a small river, the Macamac, a tributary of the Sabia, and followed it up to the foot of the mountains.

Up one of the broad, deep ravines we traced the creek. On either side, Fern and Aloe clad cliffs were towering over 1,000 feet perpendicular above our heads. What scene in this world could surpass the Fern-growth of this ravine; the tall and robust Cyathea Dregei; the elegant Amphicomia riparia,



Fig. 33.

with its lovely and delicate anomalous pinnæ, sparkling with the everlasting dew of these damp natural ferneries. This tree fern, when seen growing with all its natural surroundings, is one of the most fascinating sights of the vegetable kingdom; it produces a dark stem, seldom exceeding 6 feet in height and 6 inches in diameter; tripinnatifid fronds, often over 8 feet by 2 feet 6 inches, but what gives the charming effect is the trichomanoid anomalous pinnæ—covering the bases of the fronds and the crown of the stems, with what appears to be a brilliant green gauze, and is often mistaken for a species of Trichomanes. It grows in the rocky vegetable soil of these damp shady ravines. Todea africana, with robust green fronds, over 8 feet in length, and Maratta evecta, under two forms, were growing in all directions. In after rambles up these numerous and enchanting ravines, I often came across scenes which were made up by the intermingling of these few gigantic ferns—all blending their distinct forms, in such a manner as to lead one to think they must have been planted and mixed by some ornamental gardener. Besides these, there were numbers of Nephrodiums, Aspleniums, Adiantums, and Polypodiums, covering rock, tree and ground. When looking upon these natural ferneries, with the sparkling stony stream in front; the green trees on either side, lichen and moss-covered rocks and old stumps, with the damp towering cliff in the background—all setting off the richness of the ferns, which always appeared so profuse in growth and healthy in appearance, I thought of our ferneries at home, and have, since then, through close observation, come to the conclusion that this richness, this beauty, this elevating and refining scenery, could be attained in England. I firmly believe that these tree-ferns, and numerous other plants, growing at this altitude, where frosts are often very severe, would, by proper study, care, and cultivation, flourish in the "open air" of England: and that many floral beauties, now limited to hothouses and "stew-pans," could be eventually made to flourish, and so beautify our out-door scenery.

After following up the Macamac Creek for about half a mile, into this mighty gorge, which gradually became narrower, we suddenly came upon a grand

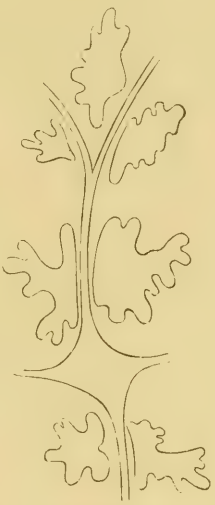


Fig. 34.

and majestic scene, excelling all I had seen, read, or heard of. It consisted of the ravine terminating in a large waterfall; on measuring this fall, I found it exceeded 370 feet of a clear and uninterrupted drop, and where the water tumbled over, about 60 feet in width. In times past this waterfall must have been far larger and something awful in height, for the deep cutting the river has gradually made and is still making into the plateau, is like the shape of the fourth letter of the Greek alphabet, with the side nearly half a mile in length; these still retain their waterworn and perpendicular faces. This great inroad into the mountain is partly effected by the bed-rock being decomposed grey granite, which is easily dissolved or disintegrated by the back current of the lower stream, so undermining the upper strata, which eventually become separated from the mountain side. Near to the base of the waterfall, Trichomanes, Adiantum, Selaginellas and a species of Balsam were luxuriating in the perpetual vapour, and high up on the dry rocky sides, Aloes and other succulent plants were struggling for an existence. With great difficulty we ascended this plateau, and found the highest point to be a little over 4,000 feet above the sea-level. The country at this elevation assumed a grassy aspect, with slight undulations, almost entirely devoid of trees, except at the verge of the declivities, where the arborescent vegetation of the ravines has escaped to the top. Following the stream at this elevation for about 15 miles, we arrived at a still higher range of mountains, from whose rocky and perpendicular sides it springs. Here we found a similar vegetation to that of the lower range, but on arriving at the top, we got into the region of Proteads and Heaths, at an altitude of 7,000 feet above the level of the sea.

On reading the foregoing it will clearly be seen—that from the coast to the interior, there is a succession of altitudes, or in other words, a series of steps or plateaus, from the sea level to the 7,000 feet of the Highlands. This is the peculiar feature of South

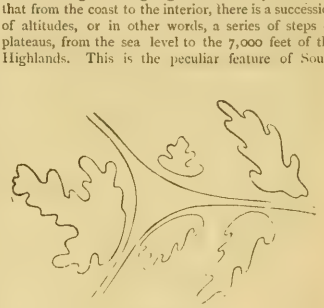


Fig. 32.

Africa, and to behold it, is to have impressed upon the mind the fact, that the Continent of Africa has been formed by a series of successive elevations or recedings of the water. To stand on the edge of the highest of these stupendous and lengthy cliffs, commanding a full view of the deep ravines, which jag its otherwise unbroken outline, and which originate small streams, whose sparkling waters tumble over the various elevations on their way to the lowlands; to behold as far as the eye can reach to the eastward, a low flat country enveloped in haze and cursed with fever, and know that here, up in the mountains, one is in a healthy country, nearly 7,000 feet higher than the lowlands in the distance; to go back in imagination to the time, when the world of waters was dashing and foaming in fury against the very cliff on which one is standing; to think of the eternity of time which must have intervened between then and now; of the past eternity it must have taken the water to wear away these mountain sides into perpendicular and gigantic faces, and to make this country a land of plateaus, coppices and plains; and to think (what is here forcibly displayed) of the marvellous, incomprehensible and past-eternal manner of development of this world. On looking at and thinking of all these things, how insignificant our little span of time appears, and how trifling the greatest of human abilities, when we behold the Creator in His past and present work, and think of that great and wonderful Design, in which He



Fig. 35.

originated the world, watched over its numerous changes, and brought it to its present state. *C. Mudd.*

(To be continued.)

Forestry.

In my last article of the 20th ult., I made reference to some things, which foresters in general are too little conversant and familiar with, and which it may be well to specify and describe somewhat more clearly. In that article I ventured to suggest that the kind of education most needed by foresters, is more that of observation and experience in the wood and forest, than what is acquired from books within the walls of a school. Not that I believe a man can be a proper forester without book education, but still less do I believe he can be one without observation and experience. The first recommendation is that the forester

should know accurately how many trees he has charge of, which require attention at his hand. The way in which this can be ascertained is by finding how many trees are standing upon the ground, after the first thinning has been effected, assuming that at ten years old, the pine, fir, or mixed plantation is thinned out to 8 feet apart, or say 700 trees to the acre, which is the distance or nearly so at which the trees should stand after the first thinning. There are various means of ascertaining the average distance apart, or number of trees upon an acre, but that which I find sufficiently near for all practical purposes is just to lead a tape-line, or better for the purpose,a gig-rein, marked with feet and inches like a common tape-line, through the plantation in several directions, measuring from tree to tree in a zig-zag manner, always taking the next nearest tree, and jotting down in two columns, the one containing the distance apart, and the other the species of trees. I do not take time to write down more than the initial letter of the species, as L. for Larch, S. for Spruce, and S. P. for Scot's Pine, and so on.

The average distance apart, and the number of trees, are easily found by dividing the aggregate measurements by the number of distances.

Again, in after thinnings, all the trees cut, whether dead or alive, are noted in the Book of Thinnings, kept for the express purpose.

The practice of taking one-fourth of an acre, here and there, throughout a plantation, and counting the trees upon each, is a false practice, and attended with bad results.

To find how much growth plantations are making, and the value of that growth, each must be taken separately, in the following manner:—A plantation, whose timber value is by the foot, is found thus—Length or height of tree, 50 feet, or 600 inches; girth at centre, 2½ feet or 30 inches, and thickness of layer, or zone, one-eighth of an inch. 600 × 30 = 18,000 ÷ 8 = 2222 inches ÷ 1728 = 1¼ feet nearly; and at 8*d.* per foot, would be 1*s.*, which the tree is making annually. If, therefore, there are 300 trees upon the average acre, the annual return will be £15 per acre. Few plantations are in such vigorous growth as to produce an average annual layer of one-eighth of an inch thick; but it is by no means an unusual growth, and such, moreover, as is both attainable and desirable.

Trees below timber size, such as prop-wood and spar-wood, are not sold by cubic, but by lineal measure, and their growth is easily known by observation.

The market value of a tree may be said to begin when, at 6 feet from the ground, it girths 9 inches; that is, it constitutes a pit-prop or a fence-post at that size, and every year's additional top growth is just so much additional length of post or prop.

Taking a plantation, for example, after its first thinning, when it contains 700 trees per acre, and at the stage of growth when the trees girth 9 inches at 6 feet from the ground, at that stage it is a fair computation to put the top growth at one foot, equal to 700 lineal feet per acre; and at ½*d.* per lineal foot, which, in the case of very young plantations is too much, and in the older class too little, 700 halfpence is = £1 9*s.* 2*d.*, which is the value of the annual growth per acre. It is the practice of some valuators to put the various growths at the same value, such as prop, spar, and timber trees; but this is found to be an erroneous method, as, by it, young trees would represent a sum far beyond what they are worth, either in the market or as an estate subject of property. Pine and fir trees are exceedingly sensitive, and cannot endure any derangement of the current of their sap and other fluids. [With reference to this point, see Mr. Maw's remarks on the flow of the sap in the Sugar Maple, p. 138.] It is this that renders the work of thinning so precarious, hurtful, and often fatal to resinous trees, and makes any forester, who knows the sensitiveness of the plant, guard and protect it against any species or form of injury. *C. Y. Michie, Cullen House, Cullen.*

Foreign Correspondence.

King George's Sound.—I write a few lines, to inform you of the progress made by me here in South West Australia. While completing my tour from Swan River I went along the base of the Darling ranges to the Collie and Preston River, through much forest land, timbered prevailingly with Eucalyptus marginata, among which E. calophylla is interspersed, as is the case in all the so-called Mahogany forests of West Australia.

I did not expect to find many novel forms, but wished, while journeying, to watch the distribution and association of species. I may instance that the lovely Goodenia Eatoniana, which was only known from the Blackwood River, extends from the Preston to the Shannon, Walpole, and Gordon Rivers, being a forest plant of humid valleys. Another pretty blue-flowered Goodenia, G. leptoclada, of which, like of so many other of Drummond's plants, we did not know the natural localities, belongs to the forest heaths of the Hay River and Torbay, as I have just found out. Previously I met G. Hassallii on the Murchison River, the Irwin, and Arrowsmith River, also on the Upper Greenough River. The best plant of this latter part of the journey is a stately Xerotes from the valleys of the Lower Shannon. It attains a height of 8 feet, the caudex increases finally to a diameter of nearly ½ foot, while the leaves are Typha-like and the panicles purplish, of which flowers are large and formed on the model of those of X. Brownii. This species is still grander than X. Banksii, and I have named it in honour of General Sir Harry Ord, the new Governor of W. Australia, His Excellency having evinced a great interest in my researches here. My attention was directed to this showy plant by Mr. Muir, who had previously noticed it in the few localities to which it is confined, and I shall have seeds of this Xerotes to introduce into European conservatories. The glorious Eucalyptus ficifolia extends from Brooke's Inlet to the western side of Irwin's Inlet. It has a deeper fissured bark than E. calophylla, and is a smaller tree. But the most noteworthy of all the Eucalypts remains, the splendid "Karri," true, E. diversicolor. While the Yarrah or Mahagoni tree has the features of a stringy-bark tree of the Eastern colonies (E. obliqua), the Karri resembles in habit quite the E. amygdalina, and it is also quite as gigantic as that world-renowned species. The conflagrations of the scrubs do not here deface the forests as in so many other parts of Australia, the bark of the Yarrah not catching fire so fully as that of E. obliqua; thus not so many shabby objects of dead trees are found in the woodlands here; indeed the forests look fresh and green everywhere. I discovered a new Ionidium (or, better, Hybanthus), also a Stylidium, twining like S. scandens, and also up to 6 feet high. It is leafless, and the comparatively larger rosy flowers are fringed like those of a small Dianthus. On other interesting plants I will communicate on another occasion. *Ferd. von Mueller.*

Garden Operations.

FLOWER GARDEN, ETC.

It may be said, with great truth, that a gardener's work is never done, that operations requiring attention follow each other in such rapid succession, that it is scarcely possible to keep pace with them; but, perhaps, at this season, when the flower beds and borders are well filled, and the mowing and edging easily kept under, there is a little less pressure than was the case earlier in the season. Care-taking, however, must not be relaxed; the carpet beds will require a considerable amount of attention in pegging out, pinching back to maintain the lines and divisions perfect, and removing all extraneous matter. Beds of scarlet and other Pelargoniums are flowering in great beauty this season, and these too require frequent attention to the removal of decayed leaves and exhausted flower stems, in order to prolong the season of flowering. Any tendency to a rambling growth should be checked at once. The propagation of the scarlet and zonale Pelargoniums, in all their numerous varieties, should be commenced at once, and carried on as fast as cuttings can be secured, without materially injuring the beds. Most of the varieties will strike very well in the open air on a warm border, from whence they may be potted in the autumn; but choicer and more tender sorts are best put singly into small pots, and struck under glass. They will require very little water until the rooting process commences; but plenty of water should be poured upon the plunging medium about the pots. Now is also a good time to propagate, by cutting Noisette, Bourbon, China, and other Roses. These may be either inserted in the open border, and covered with handlights, and shaded for a time, or they may be put into good-sized pots, and placed under glass in a cold pit. The propagation of Pansies should be continued according to the stock required, and the early-struck cuttings will be benefited by being pricked out on to a reserve border. The layering of the border varieties of Clove Carnations should be followed up, as should also the propagation of the many varieties of Pinks, so useful as border plants. Pipings and slips are both available for this purpose. Now is also a good time to insert cuttings of Mule Pinks, Double Sweet Williams, and others of that class of plants, all of which are exceedingly useful to keep the mixed borders well furnished. These borders are now a source of great interest, and the floral display very varied. Almost every week brings some tribe or other prominent to the eye just now. The beautiful varieties of herbaceous Phlox are very conspicuous; so also is the old scarlet Lychnis, and Spirea venusta is also very beautiful. Hardy and tender Annuals likewise contribute no small share to make up the general display of beauty. Now is the time to make notes of the varieties which, by their size, colour, and habit of growth, are most suitable for particular situations. The seed of choice varieties should be collected from time to time, when ripe and dry. A thorough neatness in this department is essential to its enjoyment, so that a constant attention will be requisite to keep all decaying and useless foliage and exhausted flower stalks removed, and support afforded to all plants liable to be blown down by the wind. A general stirring of the surface will complete the operation, previous to which, however, any very conspicuous vacancies should be filled from the reserves of Biennials for next year's flowering. The Double White Rockets, too, must have all the flower stalks removed at once, in order to encourage the young growth for another season. These should never be allowed to stand more than two years without being lifted and divided, and planted in fresh places. The dwarf varieties, both white and purple, should also be subjected to the same routine, and they are all benefited by the addition of some rich compost, at the time of replanting, which is best done early in September. Dahlias will now require a great amount of attention. High winds must be guarded against by strong supports, to which the stems must be frequently securely fastened. The earth should be well loosened about them, and when required very fine it should be left round the stem in the form of a basin, into which occasional doses of strong liquid manure should be poured. The buds also should be thinned out; and if earwigs are troublesome, small pots, placed in an inverted position on the top of the stakes, will trap them; these should be examined daily. Hollyhocks will require the same attention as to fastening and liquid manure. *John Cox, Redleaf.*

FRUIT HOUSES.

Orchard House.—In the early house—that is, where the trees were started in January or early in February with a little artificial heat—all the fruit will by this time have been gathered—that is, premising that no sorts so late as Salway are grown in the house. Any trees requiring to be repotted should be attended to at once. Instructions as to how it ought to be done were given in a previous number. Red spiders are so partial to the leaves of Peach and Nectarine trees that they are almost sure to become infested with them when the syringe or garden engine is withheld to allow the fruit to ripen. As soon as all the fruit is gathered a vigorous application of water in the form of spray to the under sides of the leaves will soon clear the trees from the pest. The roots must be well supplied with water while the leaves remain green, as much of the success of next year's crop depends on the full development of the blossom-buds, and the perfect ripening of the young wood. Of course it is well-known that Peaches and Nectarines are not produced from spurs, but from the young wood of the previous season. The small and medium growths produce the most blossoms, very strong shoots seldom produce any fruit. If the growths (as they are almost certain to be) are too thickly placed on the tree, it requires some experience to be able to thin them out, and also as to shortening those that require it. It is certain that good fruit cannot be produced from trees with much young wood, and the inexperienced are more likely to err on the side of not thinning enough than they are on the other. A mistake may also very easily be made in cutting back the young wood at this season. A succulent-growing shoot, if it is stopped early in the season, will start again and produce two or three weaker growths; they will not do this now. Weak and medium growths must not be stopped at all after this, the stronger growths only that contain triple buds may be cut back, if it is necessary so to do, and they must be cut back at one of those buds; the centre buds in triplets are leaf buds. The buds at the point of weak and medium growths are always leaf-buds, but as a rule all other buds from the point at which the young growths started are fruit buds, and if the growth is cut at any of these it will certainly die back to the point from whence it started. Those intending to purchase young trees at the nurseries will find the present a good time to select them. See that they are clean and well furnished with promising wood from the base upwards. In the training of young trees from "maidens" I have seen reason to alter my opinion. Following Mr. Rivers' direction, I used to cut the growths back only one-third, certainly not more than half; some of the trees would do very well, others would be badly furnished at the base, and no amount of stopping back closely near the top of the trees would give satisfactory results. Last year, when looking round the nurseries of Messrs. J. Veitch & Sons, Chelsea, at Southfield, I saw a house of Peaches and Nectarines in pots which I could but stand and admire for the perfect manner in which every one of them was furnished with young bearing wood from the base to the summit. I could see at a glance that the foundation of this successful effort was laid in cutting the maiden growths over from 15 to 18 inches from the insertion of the bud. Those intending to

purchase and who cannot visit the nurseries will find the following a good selection arranged in the order of their ripening. Peaches: Early Beatrice, Early Louise, and Early Rivers are very early and have done very well with some growers, but I have discarded them. The earliest now grown here are Hale's Early, a splendid sort from America; Early York, also a constant sort; next in succession we have Early Grosse Mignonne, Grosse Mignonne, Royal George, Bellegarde, Noblesse, Barrington, Walburton Admirable, Exquisite, a fine yellow fleshed American of the largest size; and Desse Tardive. Nectarines: Hunt's Tawny is an early yellow-fleshed sort of second-rate quality, Lord Napier, very fine; Balgowan, Elruge, Pine-apple, Violette Hâtive, Stanwick Elruge, Victoria. A few good Pears for the orchard-house are Beurré Giffard, Williams' Bon Chrétien, Souvenir du Congres, Beurré d'Amanlis, Summer Beurré d'Aremberg, Louise Bonne of Jersey, Beurré Hardy, and Marie Louise. Of Plums the following may be grown:—July Green Gage, Green Gage, Golden Esperen, Transparent Gage, Angelina Burdett, Jefferson, Kirke's, and Coe's Golden Drop. *J. Douglas.*

Vines.—Late Vines now swelling off heavy crops will well repay all the attention that can be given to them. Inside borders cannot receive too much tepid liquid manure, and notwithstanding the heavy spring rainfall, the outside roots should be well protected with good mulching, and watered if necessary to prevent their striking downwards in search of moisture. If the Grapes are well advanced, hard forcing, and the use of fire-heat should be avoided by giving abundance of air throughout the early part of the day, and closing with sufficient sun-heat to raise the house to 90° in the afternoon. Keep up a steady supply of ammonia by the frequent introduction of a few baskets of fresh horse-dung, and ply the syringe every evening to the walls, stems, and foliage, where it can be used without spotting the Grapes. The great extremes of wet, cold, and tropical heat of the past four months having been favourable to the spread of red spider and mildew, observance of the above details will, in most cases, bring these troublesome pests into subjection by producing vigorous growth of leaves and laterals, which should be encouraged by just sufficient thinning and stopping to prevent over-crowding or the exclusion of light. Houses in which ripe Hamburghs are hanging may have some slight shade thrown over the glass to prevent loss of colour. Tanned pilchard nets thrown on loosely answer well, as they do not exclude too much light, neither do they require removal until after the Grapes are cut. It is gratifyng to find there are many fine bunches of Venn's Seedling in different parts of the country. With me the berries are well set, evenly swelled, dense blue black, and thickly covered with bloom. Worked on the Hamburgh it is nearly as early, and is in fine condition for use long after that variety has passed its best. If skilled Grape growers were to devote more attention to the artificial fertilisation of shy setting kinds, the removal of all surplus bunches before they come into flower, and the production of active roots by applying instead of condemning what is termed bottom-heat, we should hear less of shy-setting, cracking, and shanking. Vines in early houses from which the Grapes were cut in April and May, must have every attention in the way of watering and syringing so as to preserve the foliage in a clean healthy state until all the buds are fully matured, when, if movable, the lights may be taken off for a few weeks to be repaired and painted. Examine the roots and prepare the compost for making all necessary alterations or additions to the borders as soon as the foliage shows signs of ripening. Pot Vines intended for early forcing will now be ripe and fit for full exposure or removal to a warm, airy situation out-of-doors. Keep them moderately supplied with water, and protect the roots by covering up the pots with old tan-leaves or litter. *W. Coleman.*

Peaches and Nectarines.—The most important item in the management of late houses is the liberal use of water both to the roots and foliage. Few trees when in growth take more water than the Peach, and more failures may be traced to partial watering than to any other cause. Let all borders, inside and out, be well mulched with good rotten manure. Use the garden engine twice a day, and be very careful in always using soft or other water free from lime. Keep the young growths tied down to the trellis, and turn aside any leaves that shade the fruit, as Peaches, like Grapes, cannot be pronounced perfect where colour is deficient. If the crop, as is sometimes the case, shows to be too heavy when the second swelling sets in, a few of the worst placed may still be removed, with advantage to the current as well as the next year's crop. One good Peach to every square foot of trellis is quite sufficient if trees are to be kept in health for a number of years. Young gardeners will do well to make special note of the above paragraph if they wish their success to be of permanent benefit to themselves and their employers. To have Peaches and Nectarines really good in flavour they should be gathered in the morning, and before they are quite ripe, particularly if they have to be packed for a journey before they are used. Great care is requisite in gathering Peaches, as the slightest pressure causes a bruise and spoils the appearance of the fruit. When large, highly finished Peaches swell half way round the wood on which they are growing, and the latter can be removed without loss, a cut should be made above and below the fruit with a pair of pruning-scissors, the operator having previously secured it with a good pad of cotton-wool placed in his left hand. If the wood on which Peaches are borne must be left, clasp the fruit with a pad of wool and sever the stalk with a finely-pointed pair of Grape-scissors. Place them in squares of soft tissue-paper as they are gathered, and keep in a cool room till wanted for use. *W. Coleman.*

Strawberries in Pots.—The present season, as far as it has gone, has not been at all propitious, either with regard to the development of the plants or the furthering of the work in all its varied details to a successful termination. The young plants since they have been shifted into their fruiting pots do not seem to get away with that freedom and vigour that we would like, therefore no opportunity should be lost to encourage growth by frequent syringings overhead whenever the weather will admit of the operation being carried out. A good bath late in the evening is always beneficial, because the moisture does not evaporate so rapidly through the night. Runners are still being layered in quantities, and are nursed in small pots in a comparatively shaded place, where they make double the progress they otherwise would do if fully exposed to the aridity of the present weather; pot them up on the appearance of a dull day, and they grow away amazingly; their leaves should be a bright oily-like green—an appearance that indicates vigour and health. I invariably notice that plants that get their final shift the first week in August and that are in good condition at that time always turn out the best, but it is not always possible to get out large numbers in a few days. Remove runners as they make their appearance on the earliest potted plants, and keep a sharp look-out for the maggot that attacks and coils itself up in the leaves from this time and onwards. *W. Hinds, Otterspool.*

PLANT HOUSES.

Orchids.—That an early and effective display of Dendrobium nobile may be made during the coming winter (for however much we may and justly do admire this old favourite during the spring and summer months, when size, form, and colour may be compared through the abundance of the specimens, and preference given to those that exhibit these characteristics in a superior manner), still coming back to general utility and a thorough appreciation of choice flowers in winter, there is no manner of doubt that the first opened blooms of this and also many other first-class though old acquaintances are those that are most admired, as they ever seem to have an attractive freshness about them, and are highly prized as a natural consequence. It is by no means difficult to flower this at Christmas time. We lately read of a specimen plant being exhibited at Preston at the Royal Horticultural Show. This I consider a far more difficult task in many respects than the earlier blooming of this species, and one worthy of a special commendation. Go now carefully over the specimens and those that have finished making their growths, the last leaves on the top of the bulbs having expanded should be taken from the house in which up to the present they have been growing, and stood or suspended (if in baskets) in a cooler house, such as a vinery or Peach-house, the object being that the change may mature and ripen the bulbs just made, by the atmosphere about them being of a drier nature, while by less shading being given, and being kept cooler at the same time, a fresh batch of breaks may be prevented from starting away, and thus the formation of the blooming buds for the coming winter and spring may be assisted. As the majority of the Dendrobiums, in fact, finish up their growths, it is far better, for the reasons just stated, that they should be taken, and for a time, longer or shorter, according to the time the growths are made up and the blooming period of the species—placed in a house where such conditions are kept up, that the rest and ripening process may be thoroughly accomplished.

In the Odontoglossum-house it will be needful that an abundance of air be now given, for if this is not attended to, the new breaks now starting away, instead of bringing leaves broad and of a dark shining green, as they gradually develop, are very apt to grow very narrow, and unduly lengthened, and scarcely able to bear up their own weight. Among the gems in this division, more particularly those that have flowers less in size than the majority of the Odontoglossums, may be named the varieties of Oncidium—cucullatum, nubigenum, and Phalænopsis. Choice and lovely, though comparatively small, yet continuing in flower for a very long time, these are seldom to be met with nowadays, though a matter of ten years ago they were much more plentiful, more particularly the two first-named sorts; it would seem that they have gradually died out, and have not been renewed by importation at the same rate to that in which they have disappeared. When grown in pots, in the course of a year or two they almost invariably dwindle away, the growths getting less and weaker, and the roots do not push out so freshly as is to be desired. If, however, they are planted in small baskets or pans, receiving a good supply of water whilst growing, and suspended from the roof, they will, in the greater number of cases, continue making plump and flowering bulbs, and the roots remain in a much more healthy condition than when stood low down on the stage amongst the other plants. If some pieces are fastened on blocks, they will also do better than in pots, the roots appearing to prefer the atmosphere to the confining them in pots. That the strange beauty and singular form of Masdevallia Chimæra may be seen at its best, this, too, should be grown in a basket or pan, and suspended from the roof, taking care that it has a plentiful supply of water when in flower; it will show itself far better through pushing out at the side or through the bottom of the basket than when it is grown in a pot, where the flowers must be pressed from the soil with pieces of sticks, or some lost entirely, through the spikes pushing down through the soil into the crocks at the bottom of the pots. *W. Swan, Fallowfield.*

Natural History.

Instinct of Geese.—Reading over again the story of the pet gander in a last year's number of the *Gardeners' Chronicle*, I was reminded of the singular habit of some geese of this neighbourhood. About thirty years ago the small market town in which I reside was skirted by an open common, upon which a number of geese were kept by cottagers. The number of the birds was very great, and every year as Michaelmas drew near, the various owners used to speculate among themselves upon the value of their property, and every household used to settle upon the articles to be purchased when the geese were sold. Our corn market at that time was held in the street in front of the principal inn, and on the market day a good deal of corn was scattered from sample bags by millers. Somehow the geese found out about the spilling of corn, and they appear to have held a consultation on the subject. Every day, we may suppose, they met in council on the pond and cackled in debate upon the subject of the spilt corn. This is what one may surmise to have taken place; if any person disbelieves that geese debate, I can only say that they had a place of assembly, a pond upon the common, where they met every day and cackled—the House of Commons on an Irish night is not more noisy than they were. They must have discussed the corn question and carried a resolution, for one morning, on the day following the market, they came into the town, marched up the street, and cleared up the scattered corn; they then retired.

From this time they never missed their opportunity, and the entry of the geese was always looked for and invariably took place. On the morning after the market, early, and always on the proper morning, fortnightly, in they came cackling and gobbling in merry mood, and they never came on the wrong day. The corn, of course, was the attraction, but in what manner did they mark the time? One might have supposed that their perceptions were awakened on the market day by the smell of corn, or perhaps by the noise of the market traffic, but my story is not yet finished, and its sequel is against that view. It happened one year that a day of national humiliation was kept, and the day appointed was that on which our market should have been held. The market was postponed, and the geese for once were baffled. There was no corn to tickle their olfactory organs from afar, no traffic to appeal to their sense of hearing. I think our little town was as still as it usually is on Sundays. I think the occasion was that of the Potato blight, or perhaps the cholera; at any rate there was a fast and there was no market, and the geese should have stopped away; but they knew their day, and came as usual. Unfortunately for them the cattle market was being held in the street when they entered. It had been postponed from the day before; but the geese were right so far as coming on the proper day was concerned, and they marched on boldly, cackling as usual, till they had advanced some distance up the street, when they became entangled among the herds of cattle; and what with kicks from the animals and pokes with sticks from men and boys in attendance, they at length retreated beaten and abashed.

I do not pretend to remember under what precise circumstances the habit of coming into the street was acquired. It may have been formed by degrees, and continued from year to year; but how the old birds, who must have led the way, marked the time so as to come in regularly and fortnightly, on a particular day of the week, I am at a loss to conceive. *T. G.*

THE

Gardeners' Chronicle.

SATURDAY, AUGUST 3, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug. 5	Cambridge Cottage Garden Society's Show. Woburn Cottage Garden Society's Show.
TUESDAY,	Aug. 6	Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M.; and Exhibition of the British Bee-keepers' Association (three days). "Pioneer" Bermondsey Amateur Floral Society's Show (two days).
THURSDAY,	Aug. 8	Royal Horticultural Society and Ireland's Summer Show. Sale of Orchids, at Stevens' Rooms.
FRIDAY,	Aug. 9	Cheadle Floral and Horticultural Society's Show (two days).

THE Reports on the POTATO CROP which, by the courtesy of our correspondents, we are enabled to present, is, we are glad to say, on the whole a satisfactory one. From Land's End to John o'Groat's, from Kent to Galway, from Scilly to the Channel Isles, the report is, generally speaking, favourable. In our last issue we published some of these reports, which are supplemented by those now issued. The disease set in in the Southern counties much earlier than usual, and naturally gave rise to much apprehension. The hot dry weather which ensued checked the progress of the disease which, as we have said, was chiefly observed in the Southern counties.

Early sorts yielded good crops, though from the check to their growth consequent on the heat the individual tubers are small. Late Potatos have not looked so well for many years past, so that great hopes are entertained of a full harvest. From the great Potato-growing districts of the North of England and Scotland, as well as from Ireland, there is the promise of a much more abundant yield than for several years past. One natural effect of the defective crops of late years has been to reduce the acreage of Potatos in Great Britain and Ireland. The total acreage in Great Britain devoted to Potato culture in the year 1877 was, according to the returns issued by the Board of Trade, 512,471 acres, an increase of 7383 acres over 1876, though still below those of any year since 1867. In Ireland there has been a still greater decline in the acreage devoted to Potato culture. The improved crop of the present year may possibly lead to an increased quantity of land being devoted to the culture of the tuber. But, on the other hand, if prices rule low, the temptation to increase the cultivation will be lessened. Seeing how precarious the crop has become, and noting how large—thanks to Free Trade—is the importation from abroad, we cannot wish to see the acreage greatly increased, more especially in Ireland, whose damp, warm climate is so particularly favourable to the spread of the fungus. We do not remember a season on the whole less favourable to the development of the fungus. That it was present as abundantly as ever we cannot doubt, but the conditions were not propitious for its development, and thus the balance this year is in favour of the Potato.

—— HARDY FLOWERS IN THE FULHAM NURSERIES.—Messrs. OSBORN & SONS send us a beautiful bouquet, the constituents of which we enumerate, as they are one and all worthy the attention of lovers of such plants. We take the names as we find them:—Verbena venosa, an old favourite with purple flowers, capital for bouquets, and very effective in the border; Bocconia cordata, elegant and uncommon; Polygonum molle, Rhexia virginica, a North American Melastomad, remarkable for its purplish red flowers and bright yellow anthers of singular form—one of the most beautiful as well as curious of hardy plants. Spiræa palmata elegans does not answer to expectations. We greatly doubt its alleged hybrid origin. Rudbeckia grandiflora, a handsome yellow-flowered Composite with a dark centre; Coreopsis lanceolata, a very attractive yellow Composite; Hyacinthus candicans—the very striking and relatively new Hyacinth; the botanists are no doubt right, but this looks as little like a Hyacinth as can well be; Amaryllis longifolia, a beautiful pink crimson, rather too powerfully scented to be pleasant; Lythrum verticillatum and L. roseum superbum, both fine forms of the Loose strife; Tournefortia heliopoides, a plant singularly like the Heliotrope in the flowers; Tradescantia virginica, and var. alba and rubra, all old friends; Linum luteum, bright yellow; Œnothera Youngi, one of the smaller species, with thin wiry branches and yellow flowers of moderate size; Veronica spicata corymbosa, a remarkable form of V. spicata, in which the spike is replaced by a densely branched panicle, covered with small linear bracts, with purplish flowers in their axils.

—— RHEA FIBRE.—There is little chance of this plant being cultivated profitably in cool countries, a tropical or subtropical climate being necessary for it. According to Dr. SCHOMBURGK the plant thrives at Port Darwin, North Australia, and may prove valuable there.

—— THE NEW PARK AT LEICESTER.—Messrs. BARRON & SON, Londscape Gardeners of Elvaston Nurseries, Borrowash, Derby, have been awarded the 1st prize of fifty guineas for their design for laying out the new public park at Leicester. The park, which is over 60 acres in extent, is situated by the river Soar, near the old abbey. As the public are already provided with a large recreation and cricket ground in the immediate vicinity of the proposed park, the whole of the 60 acres is treated as pleasure ground. Messrs. BARRON & SONS' design includes a large piece of ornamental water, with island, rockwork, &c.; an American garden, a Rose garden, archery ground, lawn tennis and croquet ground, bowling-green, &c. They also furnish plans for a pavilion, lodges, entrance-gates, bridges, and band stands. The corporation of Leicester offered 100 guineas in prizes, fifty for the best design, thirty for the second-best, and twenty for the third best. There were twenty-two competitors from all parts of the United Kingdom, and one or two from the Continent. Messrs. Barron & Son are entrusted to carry out the work.

—— LONDON GARDENING.—We have received from Mr. WALLWYN SHEPHEARD, Hon. Treasurer of Euston Square South, a few specimens of flowers raised from seed in the open ground of that Square. He writes:—

"The seed was supplied by CARTER, of Holborn. These specimens comprise the following, which have bloomed well here in the heart of London:—

Oxyura chrysanthemoides	Tropæolum majus
Papaver orientale	Leptosiphon luteus
Eschscholtzia crocea	Collinsia bicolor
Convolvulus atropurpureus	Clarkia elegans
Malope trifida grandiflora	Viscaria cardinalis
Papaver nudicaule	Iberis amara
Myosotis dissitiflora and palustris	Silene pendula
	Nemophila insignis

"The late hot weather caused several of the top branches of the Lombardy Poplars to fall without any warning, thus necessitating the immediate lopping of all other branches which overhung to a dangerous extent the public footway. The sap was well down in the trees, which will look all the better next year. The deciduous shrubs and trees, as well as the Privets, Laurels, and Euonymus have done well this season. The Superintendent of the garden, who visits it once a week to report to the committee, is Mr. KIRK, formerly apprenticed gardener on the Earl of HARDWICKE'S grounds at Wimpole, and lately gardener to EDGAR HANBURY, Esq. The gardener's name is STEPHEN GOSDEN. The committee is formed of several residents in the square."

We heartily congratulate the residents of Euston Square South on being so well served by their officials. The bouquet forwarded to us was bright, fresh, and varied. We should never have supposed that it was the product of a London square. Twenty years ago we used to be told that nothing would grow in London, but since then we have made great advances, to the great benefit of the Londoners. We earnestly hope that other "Squares" may follow the example of that of Euston. It should be noted that the plants sent, though showy and effective, are inexpensive. There is no reason that we know of why many more deciduous shrubs and trees should not be tried.

—— THE PARIS EXHIBITION.—A correspondent in Paris writes:—

"The jury for the judging of the horticultural exhibits was only gazetted in the official paper on June 11 last, though the Exhibition had been opened on May 1, and several horticultural fortnightly shows had taken place. Amongst the judges we notice that a Dutchman is President—Mr. G. J. G. Klerek, formerly Minister of War; first Vice-President (French), M. Joigneaux; second Vice-President (Portuguese), Vicomte de Villa Maïor; Secretaries (French), Comte de Galbert and Verlot. England has not a single member in the Council, nor Belgium. The only representative in the jury of England is Mr. John Wills, and of Belgium M. Linden. The other jurymen, not mentioning two from Holland, are all French, and we notice the following:—Messrs. Barral, Joly, Jolibois, gardener of the Luxembourg Garden; Duchartre, of the French Institute; Truffaut, Sen., of Versailles; Carrière, Editor *Revue Horticole*; Decaisne, Pissot, Superintendent of the Bois de Boulogne; Bureau, Professor of Botany; Quihou, head gardener of the Paris Zoological Garden; Isidore Leroy of Passy, the well-known French Orchid grower; É. André, Editor *Illustration Horticole*; and F. Bergman, head gardener to Baron Rothschild at Ferrières. The shows taking place every fortnight, we suppose the results of the jury will only be known at the end of October. A great many greenhouses and hothouses have been built, and we shall mention them. Beginning first in the Champ de Mars, coming across the bridge Jena, we find on our right hand a very nice iron structure, half pavilion and half greenhouse, built by A. Michaux, of Asnières. We tried hard to get in, but it was locked. Through the glass, however we managed to see some double Pelargoniums exhibited by A. Porrier of Versailles; also from J. Vallerand, of Asnières, a good collection of Achimenes, some 150, and also some Gloxinias, of which he had last week 250, nearly all of different varieties, many seedlings, and good ones too. Further on we find a wooden structure, something in the shape of a bell, built by W. H. Lascelles, of London. Next comes the fine house erected by James Boyd & Sons, of Paisley, containing the gem of the horticultural group, that is, the fine and tastefully arranged exhibition of Mr. John Wills. The borders of the walks and the pillars are covered with vigin cork and climbers. It is refreshing to see such a house after the rubbish exhibited elsewhere. The general collection consists of Nepenthes, Tillandsias, Dracænas, Crotons, Bromelias, Anthuriums, Azaleas, &c. Not far from this house Messrs. Boulton & Paul, of Norwich, show a nicely-built span-roofed structure, which is empty. Further on we find Ozanne's lean-to house in iron, and rather light, also empty. Against the same wall on the other side there is a capital conservatory, built for a gentleman in the South of France, by the Usine de St. Sauveur, of Arras. In that house there is a bed of Pelargoniums, also a few plants from Russia, Dracænas umbraculifera, D. lutescens striata, D. draco, &c. In another wood and glass structure shown by C. Nattier, of Paris, we come to a group of Orchids from Lebatteux, of Le Mans. The plants are of good size, but seem to have suffered from their sojourn here, the house being exceedingly dry, which does not of course suit them at all."

—— CURIOSITIES IN JUDGING.—A correspondent writes:—

"At the exhibition of a provincial Horticultural Society recently held, in which vegetables are both numerously and finely shown, some surprise was expressed at the action of the judges in certain Potato classes, in that dishes of Extra Early Vermont and Snowflake Potatos were struck out from competition, being marked in each case "not a kidney variety." That the exhibitors of these sorts were astonished and not a little indignant, was not to be wondered at. The reason assigned by the judges for this curious decision appeared to be that they were intermediate varieties, neither round nor kidney. It may happen that the exhibitors of these dishes will next season put them into the class for round varieties, and another set of judges would disqualify on the ground that they are not round but kidney varieties. Such a decision as that given above is not only perplexing to exhibitors, but it is contrary to general classification, as any catalogue of Potatos would show. In all Potato competitions we have seen Extra Early Vermont and Snowflake Potatos were admitted as kidney varieties, while the round tubers of these, if shown in the round class, would lead to disqualification. The judges in this particular case were actuated by the best motives; their conduct was above suspicion. The matter for regret is that they were not better informed in relation to a common practice. Want of knowledge on the part of the judges should not be permitted to operate to the disadvantage of the exhibitor. If there is any doubt in the matter, it would clearly be right to give the exhibitor the benefit of it."

—— The Ossenkop System of Propagating Plants.—This matter, which was mentioned by us some time since, and which was even brought under the notice of the Linnean Society, forms the subject of a paper by M. Weber, of the Botanic Garden, Dijon, in a recent number of the *Revue Horticole*. M. Weber confirms our impression that the process has been in use for Vines in France for some time; and, while he admits the correctness of the principle, he altogether doubts the value of its application to practice as an economical procedure. M. Ossenkop took out a patent in various countries, but we fear he is little likely to profit by it. M. Weber's plan of striking Vine cuttings is as follows. As soon as the leaves fall, M. Weber places the cuttings in a sheltered position in a rather light soil, the butt end upwards, and covered with 10—15 centimetres (4—6 inches) of soil. In frosty weather the access of frost is prevented by a thick layer of litter. As soon as danger from frost is over, the litter is removed, as it is essential that the sun's heat should be felt at the callused ends of the cuttings, so as to promote the formation of roots, while the reversed upper portion of the cutting, from which buds will spring, remains in a state of quiescence till the time comes for planting out the cuttings, towards the end of May. M. Weber tells us that last year he experimented on over three thousand cuttings of Vines, repsesenting about a thousand varieties, and that all have, at the time of writing (June 20), made shoots several centimetres in length. The principle that underlies these procedures is simply that of affording more heat and freer access of air to the lower end of the cutting than to the upper, and thus of stimulating the production of roots prior to the formation of shoots and buds; and, as M. Weber points out, this process can be as effectually carried out by simple means than by the patented procedures of M. Ossenkop.

—— Mimulus.—A correspondent, whose letter we have unfortunately mislaid, sends us flowers of a Mimulus presenting some features worthy of comment. The flowers were unfortunately nearly rotten when we received them, but they were still in sufficiently good condition for us to note that the carpels which form the capsule, instead of being two in number and joined together as usual, were five in number and all separate. We have thus an example of regularity in number in a flower in which three out of five carpels are generally undeveloped.



Fig. 34.—The Edelweiss and Alpine Forget-me-not. (see p. 143.)

—— New Mexican Plants.—Mr. W. B. Hemsley, who is engaged in the preparation of an extended catalogue, with numerous illustrations of the plants of Central America, for the splendid publication on the *Biology of Central America*, to be issued by Messrs. Salvin & Godman, has issued in pamphlet form a series of diagnoses of new polypetalous plants. These "diagnoses" will be most convenient to working botanists, and specially to those who may not be able to procure the larger and more expensive work. In accordance with the plan followed by zoologists, Mr. Hemsley writes the

specific name in small type, and not in capitals, even when the specific name is that of a person, thus—Erythrochiton lindeni. Mr. HEMSLEY has precedent for this course, but it is, nevertheless, an inconvenient one. In addition to new plants Mr. HEMSLEY gives us notes on little known plants, and complete lists of the Central American representatives of some genera, such as Fuchsia, Sedum, &c. Other "diagnoses" will follow as Mr. HEMSLEY advances to the Gamopetalæ and other subdivisions. Messrs. GODMAN and SALVIN have been collecting materials during the last twenty-five years for a natural history of Central America and Mexico. It was intended originally to restrict it to the zoology, but about three years ago they thought it would be exceedingly interesting if they could include botany as well, especially for contrasting the laws of distribution in the two kingdoms. All branches of zoology will be critically elaborated—the botany only so far as is necessary for geographical purposes. Kew Herbarium being very rich, and in course of revision for the genera Plantarum and various Floras, it was considered that if this were taken as the basis of an enumeration, the object would be attained. The botany, therefore, will consist of a complete enumeration of all the Mexican and Central American plants in the Kew Herbarium, named and unnamed, as far as species are concerned; but nearly always trustworthy as to genera. Localities, altitudes, collectors' numbers, &c., will also be given, as well as references to original descriptions and plates, general distribution of order and genera and species. The enumeration will also include all published species of which there are no named specimens at Kew, as well as the novelties of the collections made by the French Scientific Commission, access to which has been courteously afforded by the authorities at Paris. Although it was not possible to elaborate species critically, a considerable number of striking new plants will be described, and many new and interesting ones will be figured from drawings by FITCH, and some of them coloured from drawings done on the spot by Mrs. SALVIN. As an appendix to the enumeration there will be a sketch of the history of botanical discovery in the countries under consideration, and an essay on the distribution of the plants of that region. The whole work will be of a uniform quarto size.

—— ARISÆMA TRIPHYLLA. — Mr. MEEHAN kindly forwards us a spadix of this plant which has extended itself beyond the flowers, so that there is above the flowers a long naked spadix, as in Arum. The curious thing is that this prolonged spadix is flattened at right angles to the plane of the spathe, thus — | .

—— THE LILACS.—Adverting to the note of M. DECAISNE in a recent issue, Mr. HEMSLEY sends us the following remarks of Professor KOCH's, which hardly tally with those of his French colleague :—

"At present we know six species of Syringa,* whereof two, S. vulgaris and S. Josikæa, are indigenous to South Eastern Europe; two, S. chinensis and S. oblata, to the celestial empire; and S. Emodi to the Himalayan Mountains, whereas the native country of S. persica is still uncertain. The last played an important part in Persia before the Rose took the first place. According to Mr. WETZSTEIN, who was Consul at Damascus for many years, it was first known to the Persians and Arabs about the year 1200, and it is very probable that it was introduced from Persian gardens into Europe. That it is not a native of Persia is beyond doubt. LERCHE, who died at St. Petersburg in 1780, found this species wild in Eastern Caucasus, but certainly not indigenous. M. DECAISNE believes that it will prove to be a native of South Eastern Europe. [S. persica is cultivated in Kashmir and Lahore; and BRANDIS (*Forest Flora*, p. 306), states that Dr. STEWART found the entire-leaved variety apparently wild near Kánigorum, the chief village of Waziristan, on the Eastern flank of the Suliman range at 8000 feet.] S. rothomagensis is undoubtedly S. chinensis (the S. dubia of PERSOON), and it is a wild species native of North China, as DECAISNE has proved by comparing BUNGE's original specimen."

—— MONSTROUS ORCHIS.—Mr. BOULGER sends us flowers of Orchis pyramidalis, in which the sepals and petals are normal; there is no column, but in the axils of each sepal and of each petal is a stalked bud, consisting of a central growing point with three scales thrown off from its sides. In the axil of each scale secondary axes may be seen developing from above downwards.

—— AGAVES.—Mr. BAKER's revision of this genus, which appeared in these columns last year, is reproduced in the *Bulletin* of the Royal Tuscan Society of Horticulture.

—— SPECIMEN PLANTS BURNT ON A RAILWAY. —We much regret to state that two van loads of plants, belonging to Mrs. Cole and Sons, the Withington Nurseries near Manchester, and containing all their most valuable specimens, were totally destroyed by fire recently in the Whaleley Tunnel. The plants had been to Nottingham for exhibition, and were on their way home at the time of the unfortunate occurrence. The two vans were on trucks next to the engine, and, as we are informed, they were burnt to a cinder.

—— YUCCA GLORIOSA.—An old-fashioned plant truly; but what more striking, and, when in flower, what more lovely? In the garden of Mr. CROASDILL, of Westgate House, Canterbury, there is now a plant some 13 feet high, with a flower-stalk of 7 feet, bearing some 700 blossoms.

—— SPECIAL SOCIETIES.—We call attention to the following remarks on the NATIONAL ROSE SOCIETY, but which appear to us to apply equally well *mutatis mutandis* to each and all of the small societies recently established. The remarks in question were written by one of our foremost horticulturists, a man of large practical experience, whose opinion should receive all the deference that extensive knowledge and lengthened experience demand.

"I was pleased at your remarks about Rose shows and the mode of exhibiting this favourite flower. No good, so far as the improvement of the Rose, is coming out of them so far as I can see. For the last few years there has been little or no progress, and it would almost appear that the Rose is at its best as a florists' flower. This is, in my way of thinking, a great mistake. There is a fine opening to improve the Rose in many ways if our floriculturists would but see the necessity of a change for the better. I shall not be satisfied until I see thorough good Roses in the florists' view produced on plants truly perpetual as to flowering, evergreen in their leaves, hardy in constitution, and either rampant or bushy in character. All this could be obtained by offering prizes for new varieties of the Rose, by carefully hybridising the many fine species which are to be found in some gardens, but which have no place in the estimation of the florist."

—— A FIND.—Here's a chance for British botanists! Platycerium alcicorne (the Elk's Horn Fern) found on Cader Idris!—"A fact?" Well is it not recorded in the pages of our horticultural contemporary? who further understands that it was also found on the estate of a nobleman in the North of England. We have no doubt it is to be found on the estates of more than one nobleman in any division of the kingdom. This is the first of the big Gooseberries of the season, and it will be difficult to beat it.

—— THE BOTANIC GARDEN, ADELAIDE.—Dr. SCHOMBURGK's report for the year 1877 on the Botanic Garden and Government Plantations of Adelaide, South Australia, bears intrinsic testimony to the utility of the institution and the zeal and ability of its director. It may be of interest to some who were complaining lately of the hot weather here to know what the South Australians—human beings and plants—had to sustain on January 10, 1877, when the thermometer stood at 116° in the shade and 166° in the sun, and this after a drought of nearly three months' duration. After several months of drought 3½ inches of rain fell within a few hours, causing a severe flood. In the spring months, September and October, the Roses flowered in perfection.

—— THE BEE SHOW AT SOUTH KENSINGTON. —With reference to the fourth metropolitan show of bees, hives, and honey, which is to be held in the gardens of the Royal Horticultural Society, South Kensington, on the 6th, 7th, and 8th of August, the Rev. HERBERT R. PEEL, Abbot's Hill, Hemel-Hempstead, writes as follows:—"The show is promoted by the British Bee Keepers' Association, whose object is to introduce (more especially among cottagers and the labouring classes) a more merciful and more profitable system of bee-keeping than that which the majority of them have hitherto practised. Very much has been done by the association towards this object since its institution in 1874, but very much still remains to be done. The association is fortunate this year in having for its president the Baroness BURDETT COUTTS, who has given a liberal donation to its funds; but the expenses attendant upon the annual show are considerable, and I venture to ask through your columns for contributions towards the prize fund from all those who are interested in bee-keeping themselves or who may wish to promote the interests and pleasures of their poorer neighbours who are bee-keepers."

—— WHAT TO GROW IN CYPRUS.—It is to be hoped that the Government will at once proceed to make the best of their bargain, and not confine themselves to military or naval works, however requisite, but attend to more directly profitable matters. The culture of Esparto might probably be introduced with advantage. Eucalyptus is sure to be planted, and increased care will, it is to be hoped, be given to the culture of the Vine, Olive, Maize, Ceratonia, and other Mediterranean products.

—— GRAND YORKSHIRE GALA HORTICULTURAL EXHIBITION.—We have before us the balance sheet of the society for 1878, and we find that the income of the society, from various sources, has been £1877, that there is a balance of nearly £200 in hand, independent of £1275 invested, from which dividends, amounting to £54 10*s.* annually, are derivable towards the yearly expenditure. The sum of £504, against £584 last year, has been expended in prize-money and payment of the judges; but a larger sum was offered; but owing to the counter attraction of the Preston Meeting of the Royal Horticultural Society, so soon afterwards, some few classes were not filled up so well as usual. Marquees, for the purposes of the exhibition, cost £300 per annum, whilst a very liberal sum is annually expended in amusements, of which first-class music forms a prominent part.

—— ROYAL HORTICULTURAL SOCIETY. — The principal feature of next Tuesday's Floral Meeting at the Royal Horticultural Society will be a fine display of tuberous Begonias in flower, from Chiswick and some of the leading nurserymen.

—— GRAND FLOWER SHOW AT VERSAILLES.— The only real flower show of the season in Paris and its vicinity will take place at Versailles under the auspices of the Horticultural Society of Seine and Oise. This Society always holds its show at the end of August, but this season, owing to the Exhibition in Paris, it will be unusually good, such well-known English firms as the Messrs. VEITCH, Mr. WILLS, etc., having promised to exhibit. M. LINDEN, of Ghent, and several other foreigners, will also come forward. The schedule is a very liberal one, having 113 classes well arranged, and above the usual medals for each class there are about twenty rewards averaging from £6 to £32. The Grand Prix d'honneur is a fine vase from the Sèvres factory, given by the Minister of Fine Arts. The show will open (five francs) on Saturday, 24th August, at 3 o'clock, on the same day as the last meeting of the Horticultural and Botanic Congress. The show will remain open on the 25th, 26th, 27th, and 28th, on which days the entrance will only be one franc. The Show takes place in the Park at Versailles, a few minutes' walk from the Château.

—— A SEVERE THUNDERSTORM IN IRELAND.— We learn from Mr. GEORGE DODD, that on the evening of July 23, between 8 and 10 o'clock, P.M., Inistioge was visited by a violent thunderstorm, accompanied by vivid lightning and violent peals of thunder. In the centre of the very pretty village of Inistioge is a rookery of great antiquity, and during the storm one of the large trees was struck with lightning, and had its bark stripped off from top to bottom, and singular to say, next morning thirty-five rooks were found dead under the tree without the least appearance of their having been killed by such a violent shock.

* S. villosa, Vahl, collected by Turczaninow, in North China, appears to be a distinct species: and Ligustrina amurensis cannot be separated generically from Syringa.

THE POTATO CROPS OF 1878.

(*Concluded from p. 120*)

SCOTLAND.

ABERDEEN.—The Potato crop looks very well both in field and garden. The old Ashleaf, which I have been using for some time, are very dry, and all that could be wished both as to quantity and size; but we want rain just now very much, and if it does not come soon, late varieties will be small, but as yet all are free from disease. *R. Farquhar, Fyvie Castle Gardens.*

—— Potatos planted before the severe snowstorm we had in the end of March, came up very irregularly, with many blanks, but have improved very much since the beginning of June, and are now in luxuriant health, blooming very abundantly, and no appearance of disease. If the hot dry weather we have had for the last ten weeks continue for a short time longer, I think the crop will be comparatively safe. Early varieties that are now being taken up are a plentiful crop and fine in quality. *John Forrest, Haddo House, Aberdeen.*

ARGYLL.—Our Potato crops on the whole look exceedingly well and healthy. *A. Brown, Gr., Kilmorey, Lochgilphead.*

—— A large breadth of Potatos has been planted here this year, and the remarkably fine weather which has prevailed since they were planted has forwarded the crops so much, that they are being lifted both in the gardens and fields, and the quality is excellent, and without the least sign of disease. Here, where fungi are generally found in great abundance under the shade of the old spreading forest trees, there is none to be seen as yet, so I hope this is ominous of a good future for the Potato crop. The hay, corn, and Turnip crops are unusually fine, and, judging from present appearances, the harvest will be an early one. *John Cate, Inverary.*

BANFF.—Potatos are looking extra well, and there is no appearance of disease. We have a fine crop, and of good quality for table use. All over this part of the country they are looking exceedingly well, with every prospect of an abundant yield. *George Berry, Cullen House Gardens.*

BERWICK.—The crops never looked better than they do at present, and where ready for taking up, are of the finest quality. The weather has been most favourable here for all vegetables this season. *P. Loney, Marchmont House, Dunse.*

—— The Potato crop is very good, and there is no appearance of disease. The tubers are large and numerous, and of the very best quality. A most excellent sort in use here at present is Rintoul's White Don. Earlier sorts have also been very good. *Alex. Scott, Ladykirk House.*

CAITHNESS.—The Potatos are good and quite free from disease as yet. The early ones were cut down by the frost on the 7th of June, but they are quite healthy now. *John Sutherland, Langwell, Berriedale.*

CLACKMANNAN.—The Potatos in this district are a remarkably good crop, but early varieties are small owing to long drought. Later varieties are looking well. *Thomas Ormiston, The Gardens, Alloa Park.*

DUMBARTON.—The Potatos are a very fine crop this season, and of excellent quality. No disease has been seen or heard of up to the present time. *Alex. Scott, Auchendennan Gardens.*

—— The Potatos are very fine, but small. No disease. *James Mitchell, Gr., Camis Estean, Helensburgh.*

DUMFRIES.—Potatos are small in the tubers but were never better in quality, both in field and garden, and as yet there is no sign of the disease. The following sorts have been found to succeed well in the garden: — Snowflake, American Early, Myatt's Prolific Ashleaf Kidney, Corberry Kidney, Early Vermont, Compton's Surprise, and Early Oxford. Trophy and Manhattan, two new sorts that I got this season, are looking remarkably well, and promise to be an improvement on some of the older varieties. In the field a good breadth of Champions are grown, which speaks well as to its being a favourite variety with farmers. Many other sorts are grown, and all promise to be an excellent crop. Vegetables in gardens are growing rapidly, and will, I think, be above an average. We had a shower yesterday (July 28), which has refreshed crops considerably after the burning sun. Before that we had no rain for three weeks, which is something unusual for this district, where in general the rainfall is so heavy. The greatest heat we had in the late hot weather was 85° in the shade and 120° in the sun. *James Dickson, The Gardens, Arkleton, Langholm.*

—— Early Potatos are extra good except on light soils, where they are a poor crop, although of good quality. Taking the crop as a whole they have never looked better in this locality, free from disease and fine in quality. There is, I am afraid, a probability of the late ones getting a check should the dry weather continue, and then with a change second growth setting in amongst them. *James Smart, The Gardens, Rachills, Lockerbie.*

EAST LOTHIAN.—The Potato crops are looking well everywhere in East Lothian. No disease yet. *Alex. Shearer, Yester Gardens.*

FIFE.—The Potato crops are very fine. *G. Ramsay, Fordell.*

FORFAR.—The Potato crops never looked more promising than they did some weeks ago, but the continued drought is telling sadly on them, especially on light soils; in such cases heavy crops cannot be expected, especially of the late varieties. Early sorts are of good size and excellent quality, and there is no appearance of disease among them. *George Johnston, Glammis Castle.*

—— The crops are growing most luxuriantly, with no signs of disease. Early kinds are turning out well. *James Mitchell, Panmure Gardens, Carnoustie.*

KINCARDINE.—The Potato crops are very good. *George Wighton, Fasque.*

LANARK.—The Potato crops are very healthy, and there is no disease either in gardens or fields, but we have had only about three-tenths of an inch of rain this month, and none for the last twenty days, so that a change of weather may soon alter the case. *Andrew Turnbull, Bothwell Castle.*

MORAY.—Early Potatos are an abundant crop and of good quality. Late Potatos look remarkably well, and are free from disease as yet. *Donald Cunningham, Darnaway Castle Gardens, Forres.*

ORKNEY.—The Potato crop in this quarter is all that could be desired. We have had new Potatos of excellent quality in the open air since June 26th last. *Thomas Mc Donald, Balfour Castle Gardens, Kirkwall.*

PERTH.—The Potato crops in the field are in vigorous health, and promise well. There are no symptoms of disease. In the garden I never saw them finer in quantity nor quality. The early sorts are ready for taking up. *D. Doig, Rossie Priory, Inchture.*

—— Our Potato show no symptoms of disease, and are looking extra healthy; but in exposed and dry places are beginning to wither from the drought, the rainfall, from January 1 to July 29 being 8.7 inches under the average of the past twenty years, and 14·11 inches less than up to this period in 1877. *George Croucher, Ochtertyre, Crieff.*

—— The Potato crops in this neighbourhood are looking well, but rain is much wanted. As yet they are free from disease. *John Browning, The Gardens, Dupplin Castle.*

SUTHERLAND.—No disease has been reported as yet in this neighbourhood. The shaws have a healthy appearance, and the tubers are turning out good quality, owing to the dry weather. Early sorts, however, are in many places rather a lighter crop than usual. *D. Melville, Dunrobin Castle Gardens.*

ENGLAND—NORTHERN COUNTIES.

NORTHUMBERLAND.—Potatos are very good in quality, and a very good crop in this district. The disease has made its appearance in several places, but not to a great extent. *William Turner, Capheaton, Newcastle-on-Tyne.*

CUMBERLAND.—Potatos are a good crop here and in this neighbourhood generally, and free from disease at present. I have Veitch's Improved early Ash-Leaf fine, also Rivers, Royal, Myatt's Prolific, Lapstone, Lemon Kidney, Red Kidney, and various others; but the above-named are very fine, large, and prolific, and excellent when cooked. *F. Blackwood, The Gardens, Eden Hall, Penrith.*

WESTMORELAND.—The Potato crops here are suffering from drought, and in consequence the tubers are small. No signs of the disease as yet. *W. Shand, Lowther, Penrith.*

YORK.—The crops are very promising and free from disease. On light land rain is needed, but in marsh land and our great Potato districts the crops are very healthy, and hopes are entertained that Potato growing may again become a remunerative business. *Robert C. Kingston, Brantinghamthorpe, Brough.*

—— The early varieties are very good. There is no disease, and late sorts look well. *William Lewin, Aske Gardens, Richmond.*

—— So far Potatos are looking well. The tubers of the early kinds are very numerous, but small, and the quality not very good. A few diseased tubers have been found. *John Young, Wentworth, Rotherham.*

—— The early crops are fine and abundant, and the sooner they are lifted the better, as the heavy thunder showers we are having will not improve them. The late crops wanted rain before the recent showers, but they have had sufficient for the present. The corn crops have improved much of late under the influence of hot weather. *M. Saul, Stourton.*

—— The Potato crop in this neighbourhood is very promising. The plant is clean and healthy. Early sorts are turning out first-rate heavy crops; tubers clean and free from disease—a great blessing. *J. McIndoe, Hutton House, Guisborough.*

—— Our Potato crops are very good, especially early varieties on lightish land. Some of the late sorts were suffering from drought until the last few days, which have given us nice rains. We have found no disease to speak of so far. *H. J. Clayton, Grimston Park Gardens, Tadcaster.*

—— Early potatos in this neighbourhood are splendid, and in quality and quantity better than we have had them for many years. No diseased tubers have been found as yet. We are about lifting all our early varieties. *James Fowler, Harewood House, Leeds.*

—— The late Potato crops are looking promising at present. The early ones turn out well, and are free from disease. *William Stephens, Endcliffe Hall, Sheffield.*

LANCASHIRE.—The great quantity of rain and very little sunshine we had during the month of May and up to June 20, had a most injurious effect on all kitchen garden crops. The brilliant weather during the past five weeks has, however, considerably improved the appearance of things. I have never seen Potatos in this neighbourhood look so strong and vigorous, and so far they are free from disease. Should the present fine weather continue there will be an abundant crop. *Andrew Jamieson, The Gardens, Haigh Hall, Wigan.*

—— The early crops of Potatos have turned out an excellent yield, and the quality all that can be desired. The late crops also promise well, and we expect a sound and plentiful harvest. *W. Hinds, Otterspool.*

MIDLAND COUNTIES.

CHESHIRE.—This has been a good potato season. The first earlies were not injured as they usually are by late frosts, consequently we had Potatos out doors unusually early. The yield has been about an average and the quality good. Field Potatos are looking well, and there is no appearance of disease at present. *R. Mackellar, Abney Hall, Cheadle.*

—— In this neighbourhood the crops are an average. Some little disease has made its appearance, but I have found the pulling up of the shaws immediately the "spot" becomes manifest a safe preventive, particularly with early sorts. *W. Muir, Oulton Park, Tarporley.*

—— Early kinds are very good but not quite so large as usual. Second earlies are but small. Late sorts look promising, and will doubtless be much improved by the rains of the last few days. Very little disease at present, only in a few isolated cases. *Alfred J. Grant, Withington Hall, Chelford.*

DERBY.—The crops in this neighbourhood look well, and are free from disease at present. The tubers are rather small, but the recent rains will no doubt improve their size. *William Brown, Brethy Gardens, Burton-on-Trent.*

—— Potatos in this district look very well. We have lifted all our early kinds, and find them very good in quality and quantity, quite free from disease, and a fortnight earlier than usual. I fear the late rains will assist the disease, although late Potatos were suffering from the long drought. Some of the American kinds are already slightly diseased. *J. H. Goodacre, Elvaston.*

SALOP.—Potatos with us are still free from disease, although some of the shaws are showing unmistakable signs of the foe. This I observe on Snowflake and Lapstone Kidney. Ashtop and Myatt's Prolific are quite free in all respects at present. Late varieties in the fields are to all appearance healthy, but weak in growth, and require rain. Of course, it is too early to write definitely concerning them. The ground they occupy was manured in autumn, which may account for their weakly growth, but they will have a better chance of escaping the murrain. *A. S. Kemp, Haughton, Shifnall.*

—— Potatos with us are very fine this year both as regards crop and quality; indeed, we never had them finer. The sorts I find best here are Veitch's Improved Ashleaf for first crop, Myatt's Prolific for second, and a variety I got from Messrs Veitch, called Bryanstone Kidney. For a late crop we grow Victorias principally. I have seen no signs of disease among them so far, and I trust we shall escape it altogether this year. Potatos in the fields in this district are looking remarkably well, and with the nice genial weather we are having, are likely to turn out well. *James Loudon, The Quinta, Chirk.*

—— Early Potatos are a good crop, and free from the disease. Late sorts are looking strong and healthy, except a few in shady situations, where the disease has made its appearance. The first attacked were Paterson's Victoria and Gloucestershire Kidney. *George Pearson, Attingham Gardens, Shrewsbury.*

STAFFORD.—Potatos are a fine crop in this district; but in many instances are badly diseased. *O. Thomas, Drayton Manor Gardens, Tamworth.*

—— Early sorts very good. The disease has made its appearance, but very slightly at present. Late sorts are generally looking well. *E. Simpson, Wrottesley, Wolverhampton.*

—— Early sorts are first-class, and we have found none bad. Late varieties also look well. *T. Rabone, Alton Towers, Stoke-on-Trent.*

—— Garden Potatos are a fair crop, but rather

smaller than usual, owing, no doubt, to the hot dry weather. The quality has been very good. I have not found any diseased ones in the gardens, nor have I heard of any in this district. Late varieties look well. *Edward Gilman, Ingestre Gardens.*

—— The Potato crops are very good, and the tubers clean. Only a very few are diseased. This relates to early kinds only, the late ones have not been tried. *W. Bennett, Rangemore, Burton-on-Trent.*

Leicester.—Plentiful and good in quality, but the tubers are small. *H. David, Gopsall, Atherstone.*

—— The early Potato crops are very good. A few diseased tubers appeared about six weeks since, when we began to take them up, but dry weather setting in seemed to check the malady. I have been judging at many exhibitions, but have not seen anything of it since, nor have I heard of its making any progress at all. The late crops are looking very promising. *Montgomery Henderson, Cole Orton Gardens, Ashby-de-la-Zouch.*

—— Early Potatos exceedingly prolific and sound, but tubers rather small. Second early crops checked by dry weather; recent rains will probably save the later kinds. *William Ingram, Belvoir Castle Gardens.*

Warwick.—If I said I had not heard of Potato disease this year in this neighbourhood I should be speaking an untruth, but I can truly say I have not seen any. Potatos about here have been checked in growth very considerably by the severe heat during the last week of June and first weeks of July. Last year in making out this report we were for the most part jubilant in reporting ourselves free of disease; but oh, horror! had we been called upon to report on our Potatos just one week later, what a doleful account would have to have been told. Much has lately been said about the bad climate of the island of Cyprus. It must be bad indeed if it is worse than the island of Great Britain. Sometimes we are heated up to boiling-point from the influence of the Gulf stream, and at other times we are starved and withered up by north and east winds. Our nurserymen and gardeners can grow fruit trees, but we have often to whistle for our fruits. *William Miller, Combe Abbey.*

—— Early crops are tolerably good, but some of them are diseased. Late crops look well at present. *Daniel Judd, Warwick Castle.*

—— Our early garden Potatos, such as Myatt's, Mona's Pride, Veitch's and Hammersmith Kidneys, are excellent, including also several other sorts, and with as yet but little disease. Where an affected root amongst the earlier sorts was lifted, invariably but one tuber was found diseased, and that in a state of complete putrescence, the remaining tubers being apparently sound. Amongst later sorts the haulm of Sutton's Magnum Bonum at present stands tall and healthy. Our field crops I fear will again turn out poor, owing to the combined influence of the protracted wet weather during the early stage of growth and the subsequent drought, which combined ill suits our heavy clay soil. *William Gardiner, Ettington Park, Stratford-on-Avon.*

Oxford.—Early Ashleafs were remarkably good, the produce abundant, and of first-rate quality. Those grown in the fields are looking well at present, and apparently quite free from disease. *Isaac Watson, Nuneham Park Gardens.*

—— Excellent crops of fine quality, with only a very little disease of tubers as yet, although the haulm indicates some unwelcome symptoms. Myatt's Prolific is still one of the very best for gardens or ground of good cultivation, followed by Snowflake, Schoolmaster, and Magnum Bonum—the best of all field Potatos, where only it ought to be grown, its strong growing and branching habit rendering it unfit for garden culture. The American Early Rose is the general favourite with cottagers for their allotments, and undoubtedly is a very suitable Potato, seeing its prolific qualities and hardy, robust constitution. *W. Crump, Blenheim.*

Northampton.—The potato crops are so far satisfactory, being good, and free from disease. I learn, by inquiries made amongst the men employed here, that there is no report of any appearance of disease in the various villages in which they reside. I grow various kinds of Potatos here, but for main crops I have my special favourites for early use. Veitch's Improved Ashleaf, a good early cropper and of fine quality; 2d, Myatt's Prolific, three weeks later than the former when planted at the same time. I am not acquainted with a better Potato, a better cropper, or a better keeper; it is good and useful at all seasons. For late cropping I use and like Wheeler's Milky white; I also grow the true old Walnut-leaf Kidney—a fine Potato with me, and withstands disease well. I have grown most of the new introductions but with unfavourable results. Fenn's Early Market is a very good Potato, but no improvement on the Handsworth Early Prolific, a good old kind which it much resembles. *George Beech, Castle Ashby.*

Rutland.—Our early Potatos are an excellent crop, good in size and quality, with no signs of disease whatever. Late Potatos look well at present. *John Gray, Normanton Park, Stamford.*

Notts.—Good crops of all sorts and of excellent quality when cooked. Late sorts are looking strong, and will be greatly benefited by the recent rains. No signs of disease yet. *John Edmonds, The Gardens, Bestwood Lodge.*

Beds.—Early Potatos are a good crop and free from disease. Later sorts are looking well, and promise well for a good crop. The varieties grown here are Victoria, Magnum bonum, and Dalmahoy. I am just lifting a fair sample of Snowflake, and without any sign of disease. *Chas. Turner, Cranfield Court, Newport Pagnel.*

Bucks.—Very fine crop of early varieties, and none of them diseased; best crops are Veitch's Ashleaf, Rivers' Royal and Myatt's. Among new varieties on trial here one of the best seems to be Lye's Favourite. Late crops, such as Flukes, Victorias, and Regents, all look very promising. No disease has as yet been noticed here, but it is very bad in some of the cottage gardens in this neighbourhood. *J. Smith, Mentmore.*

Herts.—The early sorts were attacked with the disease much earlier than any season before. The tubers were not much injured, but owing to the growth being stopped they will be small. Late kinds, such as Regents, Victorias, and Brinkworth's Challenge promise splendid crops. *George Sage, Ashridge Gardens.*

EASTERN COUNTIES.

Lincoln.—The Potato crop is a better one this season than I have seen for many years. I have not seen a diseased tuber up to the present time. The late kinds are looking well. All we require is about twenty-four hours' rain, and then some kind weather to insure a good yield of fine tubers. *George B. Tillyard, Brocklesby Park.*

Norfolk.—I never had Potatos of finer quality and good in quantity. There is scarcely a symptom of disease showing yet. I hear some of our neighbours complaining, but I have seen but very little myself. *Charles Penny, Sandringham.*

—— Late varieties are looking remarkably well. The first and second earlies have all ripened off their haulm, and are being lifted before the disease attacks them. They are a very good crop, and of even size. The past fortnight's very hot and excessively bright weather has ripened them off quickly. *Thos. Wynne, Wroxham Hall, Norwich.*

—— The blight appeared sooner than usual on the early crops, but was checked by drought and hot weather. Late crops look well, yet suffering from drought; and some are fearful of the tubers being pre-ripened, and after rain "take a second growth," and thus spoiling the first. *J. Wighton, Cossey Park, Norwich.*

Suffolk.—The cold and rain were too much for the early kinds during their first stage of growth, as curl in the leaf was engendered; but although this was the case, the yield has been fairly good and free from disease although the tops were affected. Spots of the oidium were beginning to appear on the late varieties, but fortunately the dry weather set in just at the right time to prevent it spreading, and the prospect just now is better than we have had for some years past. American kinds, most of which have thin leaves, and are more delicate than those of English origin, look the worst, and generally show the disease before others, so that it would appear if we are to get rid of this scourge, we must not breed from these or look to them to help us. The aim must be to secure stout sturdy foliage and stems, as all of this character are best. *J. Sheppard.*

—— As far as I can learn the early Potato crop in this neighbourhood is not so bad as at one time threatened to be, indeed the fine weather we have had for the past month has had much to do in arresting the alarming progress of the disease just as it made its appearance, and although some varieties were badly attacked I have not heard of its spreading very much, and the tubers, though small in many places, are of average quality. The late kinds are looking well up to the present. *J. Mill, The Gardens, Rendlesham Hall, Woodbridge.*

—— Potatos on good land are a plentiful crop, of good size, and fine quality. On light dry land the tubers are sound but very small. The early sorts are ripe, and will be better if lifted before they get rain to start them into second growth. Early Rose was the first to show signs of maturity. Red-skinned Flourball and some of the late sorts have commenced to sub-tuberate, although we have had no rain here for the last five weeks, with the exception of a slight shower on the 23d inst., which merely laid the dust. Disease showed itself in some of the cottage gardens nearly a month ago, and only requires showery weather to develop itself. *Thomas Blair, Shrubland Park.*

Essex.—The crop is much more promising now than it was a few weeks ago, the dry weather having undoubtedly saved the early and second early varieties which took the disease the last week in June, much earlier than I ever knew it to do so before. The dry weather set in just in time, or they would have been nearly all bad; as it is, there is a pretty good crop. Late ones are looking well, but it is too early to say much about them. *J. Bryan, Audley End.*

—— The crop with me is a very good one. I don't hear any complaints at present. *W. Bones, Gr., Havering Park, Romford.*

—— The Potato crop is not at all good upon our Essex land this season. Disease is showing in many places, though some early kinds are ripening off, and those may in a measure escape it. Early kidney Potatos were fine and sound. *Wm. Earley, Valentines, Ilford.*

SOUTHERN COUNTIES.

Berks.—Our crops, on the whole, are good. The disease attacked the early kinds badly, but the continuance of fine hot weather has been a great check, and I find, on lifting the early kinds, the disease is not so bad as was expected. *James Tegg, Bearwood.*

—— The disease appeared early in this neighbourhood, and in damp ground some of the early sorts were nearly half bad; but where it is dry very few of the tubers were bad, although the tops were nearly gone. All sorts are now spotted less or more in the leaves. But very few of the tubers are diseased yet. The crops are light, but the quality very good. *Charles Ross, Welford Park.*

—— The Potatos in this neighbourhood are very badly diseased, Early Rose and Snowflake being the worst in gardens. The field Potatos being later do not show symptoms of disease as yet. *Joshua Atkins, Lockinge Gardens, Wantage.*

Middlesex.—Early varieties were slightly diseased previous to the dry weather setting in, which appears to have checked it. The second early and late kinds promise the best, and with a continuance of dry weather we may expect less disease, so far as affecting the whole crop, than has been experienced for years. *T. Baines, Palmer's Green, Southgate.*

—— Generally the large breadths of late kinds grown in this district for the London market are looking well, although here and there there is abundant evidence of the well-known spot in the foliage. The most widely-grown late sorts are Regents, Victorias, and Belgian or French Reds, the latter the latest, and looking yet very fresh and healthy. Some small breadths of Magnum Bonum are being grown for trial as a market kind, and in one instance where planted with a liberal dressing of manure the foliage is fast disappearing; whilst in other cases, where the soil is less rich, the haulm is fresh and vigorous. All early kinds have already lost their foliage, and although complaints as to diseased tubers are not considerable, yet the samples are but of medium size, and no doubt there is much latent disease that will manifest itself later on. The general anticipation is, that should the month of August remain fairly warm and dry, there will be a moderately good crop of tubers, but not of large ones, as the haulm disappears rapidly as the period of maturity approaches. As a comment upon the oft-repeated advice to plant early even in the autumn, it is worthy of remark that the most diseased tubers I have lifted have come from roots of self-sown Potatos in the open field, the produce of these of various sorts being more than one-half bad. In the many kinds growing here the disease is apparent in the haulm, more or less, in proportion to earliness or lateness of sorts, and as the soil is purposely poor, having been manured only with peat-charcoal, the tops are moderate, whilst the roots give so far but a few diseased tubers. I shall not, however, take the advice of Mr. Fish, and get all up at once. If the tubers are diseased, the lifting won't save them; and if they are not, they will keep better in the soil during warm weather than out of it. *Alexander Dean, Bedfont.*

Surrey.—Early Potatos (especially the American variety) are badly diseased; late kinds, such as Regents, Victorias, &c., are showing disease very badly in the haulm, but the tubers do not appear to be affected at present. I fear we shall have a very bad Potato season unless dry weather sets in. *James Child, Garbrand Hall, Ewell.*

—— Up to the present date the crops have proved excellent. *Fred. Corbould, Tandridge Court, Redhill.*

Kent.—Potatos are a good crop in most places, but the earlier kinds are very much diseased. *C. Haycock, Barham Court, Maidstone.*

—— We should have an average crop, but are much afraid of the disease, which we expect will increase rapidly. *Lewis A. Killick, Mount Pleasant, Langley.*

—— Early varieties are good but small. The best are Veitch's Early Ashleaf, Myatt's Kidney Coldstream, and Porter's Excelsior very good. Victorias, now that we have had rain, will be a good crop. Regents are small, and will make a second growth if rain continues. Disease has made its appearance in a few places. *F. Dennberry, The Gardens, Cobham Hall.*

—— Early planted Potatos have not grown so well as those put in later. They appear to be a good deal diseased, while the late plantings are at present free. *R. Gray, Chevening, Sevenoaks.*

—— Early Potatos are very good and abundant.

The disease has just made its appearance, and I fear, as we have been some time without rain, that when it does come we shall not be able to give so good account of late crops. *H. Russell, Torry Hill, Sittingbourne.*

Sussex.—The blight was first seen here the third week in June, and has now become general all round this part. I was over all the cottage gardens on the estate on July 4, and heard great complaints of bad tubers. With me Snowflake, Early and Late Rose, Myatt's Prolific, and Fortyfold had on an average one tuber in a hundred diseased, but since housed they are keeping well. *Sidney Ford, Leonardslee, Horsham.*

—— The Potatos are in a very diseased state, particularly the late ones. *H. Burgoine, The Abbey Gardens, Battle.*

—— All the early Potatos about here are very much diseased. The late ones promise to be good. *John Wilson, The Castle Gardens, Arundel.*

Beds.—The disease made its appearance very early, but the late dry weather checked it. The early kinds are small, but very good. The late sorts will be the same unless a change of weather comes soon. *G. Ford, Wrest Park, Ampthill.*

Hants.—Potatos generally are very good, but the disease is now spreading rapidly. *W. Wildsmith. Heckfield Place, Winchfield.*

—— Early Potatos are a heavy crop, but very much diseased. Early Rose is the worst, and was the first to show signs of it in the haulm, and in rich ground went off very rapidly, whilst in half-starved land the haulm has ripened off without much sign of disease. Late Potatos, in some places, are looking well, whilst in others the disease has turned the haulm quite black, particularly in places where they are surrounded with trees. *Jas. Taverner, The Gardens, Woolmer Lodge, Liphook.*

Wilts.—The disease came early; but although the tops are dead, the tubers are not so much injured at present as they were this time last year. The quality is particularly good. *Wm. Taylor, Longleat, Warminster.*

—— First-rate crop of the early varieties. Late sorts looking very satisfactory. *W. Phipps, Bowood Gardens, Calne.*

—— The crops in this part of North Wilts are very good. The disease made its appearance in the early ones five weeks ago; but the change to fine weather prevented it from spreading very much, and now we find but very little of it. The late Potatos are very promising. *Wm. Fraser, Charlton Park, Malmesbury.*

Dorset.—The crops are very good; the haulm of some sorts, especially Gloucester Kidney, and Lady Paget became diseased very early in the season: but the tubers are very little affected as yet. I have found, from past experience, that the best plan to ripen the tubers, where the haulm is diseased, is to walk on the rows, and pull away the haulm between the feet, leaving the Potatos in the ground till later on in the season. *W. G. Pragnell, Sherborne Castle.*

WESTERN COUNTIES.

Hereford.—Potatos are clean and a fair crop, but small, and very few diseased. We have had a splendid rain after the drought, which will greatly assist late Potatos. *N. Fuller, The Gardens, Downton Castle, Ludlow.*

—— Early varieties are sound and excellent crops. Late varieties look well, and promise good crops. *Alfred Bye, Gr., Hampton Court, Leominster.*

Worcester.—The Potato crops so far are very good in quality, with scarcely a diseased tuber to be found, but the greater number of the tubers are small. *Geo. Holman, Crown East Court, Worcester.*

Gloucester.—Many kinds of Potatos in this neighbourhood have succumbed already to the disease, more especially American varieties, which it seems to have attacked in a virulent form, the haulm in many instances having entirely disappeared, and the tubers in consequence being small and much diseased. The kinds which seem to resist disease most successfully this season are Paterson's Victoria, and Sutton's Magnum Bonum. Most kidneys of the Ashleaf type have cropped well, and are fairly sound. *Wm. Nash, Badminton, Chippenham.*

—— The Potato crop in general is very good, the early Potatos have turned out very well, being a heavy crop with very few diseased, and the tubers are large. The field crops look very promising, and should they escape with a slight amount of disease, we may look for a heavy crop. *W. J. Simpson, Kingscote Park, Wotton-under-Edge.*

Somerset.—The early Potatos are very good, and an excellent crop. The later sorts are looking promising, but the disease has made its appearance since the late storm of thunder, lightning, and rain. *W. Hallett, Cossington Farm, Bridgewater.*

—— I am sorry to say the disease is very prevalent in this neighbourhood, and especially so amongst the second early varieties. The very early kinds, such as Veitch's Royal Ashleaf, just escaped it, and are excellent both in quantity and quality. Late kinds at present promise well. *John Austen, Ashton Court, Bristol.*

—— Owing to the rains of May the early Potatos are greatly smitten with disease, but a most abundant crop, and those not diseased of very good quality. Late kinds so far promise well, and will be a good crop if they do not fall victims to disease, as the early kinds have done. *C. Etworthy, Nettlecombe Gardens, Taunton.*

—— Potato crops in this district are very bad. My plan has been during the last two years to plant nearly all early and second early varieties so as to get them off the ground before the disease much affected them, but I am sorry to say this year that the haulm were spotted like a leopard in the first week in June, quite a month earlier than I remember ever seeing it here. The haulm now (July 20) is quite dead. Unfortunately this is a general complaint in this neighbourhood. Late Potatos this season will, I think, be the freest from disease. *E. Miller, Old Sheed Park, near Bristol.*

Devon.—Notwithstanding the cold wet weather we had up to the middle of June, early Potatos have been a good crop. The disease made its appearance earlier this season, and as usual attacking the Early Rose, Snowflake, and other strong growing American sorts first. Latterly we have had heavy thunderstorms, succeeded by a close foggy atmosphere, and it has spread with great virulence in all sorts. I fear the greater part of the late crops will be destroyed. *A. Ayton, Oxton House.*

—— Potatos are very much diseased in some places, and in closely confined spots the haulm has quite died away. Field Potatos are looking well but show signs of the disease in the haulm. Early Potatos have been good. *Alfred George, Bicton Gardens.*

—— Early sorts both in frames and early borders were badly diseased. Late sorts look very promising. *John Garland, Killerton, Exeter.*

Cornwall. — The early Potato crop suffered severely from the early attack of the disease, brought on doubtless by the continuance of rain. The late crops have not "gone off" so quickly with the disease, but have blossomed before the disease was strong upon them. There are none to be seen now, however, but are more or less blackened: we expect the yield to be fair. *Henry Mills, Enys, Penryn.*

—— The crops are good, but the disease is very prevalent. *W. N. Carne, Rosemundy House, St. Agnes.*

WALES.

Anglesey.—The earlier Potato crops are very good, though some diseased tubers appear. The late crops in this neighbourhood have hitherto looked remarkably well, but on shallow soils are beginning to suffer for want of rain, of which very little has fallen for about a month, while White Rocks are mostly grown in this county for field crops from imported Irish seed, and are said to produce the best results the second year after importation. For early garden crops I find nothing better than Veitch's Ashleaf and Mona's Pride, and for later crops, Coldstream, Magnum Bonum, and Fortyfold. *J. Ellam, Bodorgan.*

—— An excellent crop, good in quality, and free from disease. *Robert Webster, Glyn Garth.*

Carnarvon.—Early potatos are a very good crop, but I have found a few diseased tubers during the last few days. Late sorts I fear will be rather small owing to the dry weather, but a good crop where the ground is favourable. *Allan Calder, Vaynol Park, Bangor.*

Cardigan.—Early Potatos are very fine but diseased. Late crops look very promising, and not diseased. *James Knight, Gr., Bronwydd, Llandysil.*

Glamorgan.—I am sorry to say our early crops are much affected with disease. With me Veitch's Ashleaf and Gloster Kidney are the best, many other varieties are totally void of foliage. American Early Rose were good in tuber, but of bad flavour. Our late crops have much improved during the last few weeks of fine weather, and bid fair for a good yield. *Henry Battram, Cyfarthfa Castle.*

Montgomery.—The crops about here are very much injured by the disease. We have dug up several very bad tubers, and the tops are all gone, so that we are pulling them up to save the crop. *Wm. Lee, Powis Castle Gardens, Welchpool.*

IRELAND.

Antrim.—The Potato crops up to the present are remarkably good. There is no sign of disease, and should favourable weather continue this will be the most productive season we have had for some years. *D. Taylor, Glenarm Castle.*

Armagh.—The Potato crop has not looked so promising for many years in the North of Ireland as it does at present. The crop of early varieties is abundant, and good in quality. Late sorts look well, but would be greatly improved by a good shower. Very little disease has been seen so far. *W. Allan, Brownlow House, Lurgan.*

Carlow.—Early Potatos are very good and a very fine crop, but the disease has set in and destroyed the haulm, and many of the tubers are badly affected. Field crops look very well. *Thomas Turner, Oak Park, Carlow.*

Cavan.—Up to about a week ago the Potato crop had not looked so promising for a number of years, but the blight has made its appearance, and is spreading rapidly (especially amongst the early sorts). However, owing to the almost matured state of the crop (being about three weeks earlier than former seasons) before the blight made its appearance, also taking into account the abundance and quality of the crop, it is expected that there will be more than an average crop of good Potatos left after the blight has done its worst. *W. J.*

Dublin.—An average crop, and very good in quality. *David Pressley, Knockmaroon Lodge.*

—— A thunderstorm with heavy rain took place here early in July, and in the course of a couple of days afterwards large patches of the stems were blackened (in the Ashleaf varieties). I had the worst of them dug up at once, and they showed very little trace of disease on the tubers. Other varieties appear to be sound at present and bid fair for a heavy crop. The fine warm weather of the last three weeks has done much to improve them. *G. Smith, Vice Regal Gardens.*

—— Potatos look well up to this date; should dry weather continue we may expect a good average crop. Disease made its appearance among the early crops during the wet weather we had some weeks since. The dry weather we are now having has put a stop to the spread of it. No appearance of disease on the late crop up to this time. *John Ellam, Brenanstown House, Cabinteely.*

Kerry.—The Potato crops in this district are over the average, but a great many of the earlier kinds are diseased. I commenced to get very good Potatos in the open borders the third week in May; these were not even started in heat before planting, neither had they any protection from late frost, from which they suffered slightly. The field Potatos are looking remarkably well, and give promise of an abundant late crop. The weather has been most favourable for the past three weeks. *F. Kelley, Killarney.*

Kilkenny.—The Potato disease made its appearance very early this year, and nearly all kinds have suffered alike. The following sorts have lost all their haulm:—Rector of Woodstock, Myatt's Prolific, Rivers' Royal Ashleaf, old Early Ashleaf, and Early Don; Paterson's Victoria, and Scotch Downs are not so bad. We have one here called Champion, introduced from Scotland, which has withstood the disease up to the present time, July 26. It is a fine robust sort, and promises to be the right Potato for a damp climate like Ireland. *George Dodd, Woodstock, July 26.*

King's Co.—Early Potatos of the following kinds have turned out abundant and fine:—Rivers' Royal and Veitch's Ashleaf, American Early Rose and Yorkshire Hero, but a great many of the Ashleafs are diseased. Later kinds are looking very suspicious; the haulm is turning black and smells strong. There are serious doubts entertained in this neighbourhood lest the Potato crop should be a failure. *T. J. Hart, Birr Castle Gardens, Parsonstown.*

Sligo.—The Potato crop looked remarkably well, and promised to be very abundant, but unfortunately the blight has made its appearance. It is thought, however, that the dry weather we are now enjoying may to some extent retard its progress. *J. White, Hazlewood.*

Tipperary.—The crops in this district are badly diseased, especially the early varieties; and the late ones have the appearance of being a very bad crop, the disease coming on them earlier than ever. *Jesse Wilsher, Shanbally Castle, Clogheen.*

Westmeath.—The crops in general are very good, but, the blight setting in very early, checked their growth very much; still, from their present appearance, I think there will be a very good crop. Cereals of all sorts look well, and green crops are very fine. *John Igoe, Maydrum, Athlone.*

Wexford.—The Potato crop in this neighbourhood looked very flourishing until early in June, when the disease made its appearance and spread with great rapidity, destroying nearly all the early crops, and soon began to spread over the late ones. Fortunately fine, hot, dry weather set in and arrested its progress, or the whole crop would have been lost. *P. Braund, Courtown House, Gorey.*

CHANNEL ISLANDS.

Isles of Scilly.—The early Potato crops were good, and were all dry, and sent off by the end of May and the early part of June. Myatt's Ashleaf Kidneys were especially good, and realised average prices, and but little diseased. The later crops for home consumption are above the average in quantity, but are much diseased with home-saved seed. The crops from new seed from the mainland are excellent, and but little diseased. *G. D. Vallence, Tresco Abbey Gardens.*



Home Correspondence.

Fungi in Pre-historic Times.—It is a singular fact that amongst the relics found in the ancient Lake dwellings of Switzerland and North Italy, three fungi commonly put in an appearance, viz., Polyporus igniarius, P. fomentarius and Dedalea quercina, all large and woody species which live parasitically upon trees. In some instances the fungi still show the marks from the ancient implements used to detach them from the trees. Some of the specimens, especially of P. fomentarius, are of very large size, and antiquaries differ in opinion as to the probable use made of them. An opinion which receives credence is that the fungi were dried and used as tinder. It has also been suggested that they were used for tables, vessels, and articles of furniture. Some antiquaries have referred to the edible nature of certain species of Polyporus, but no edible species have been found in the Swiss Lake Dwellings, and the three plants mentioned are nearly as hard in texture as the trunks upon which they grow. English botanists will remember that Mr. Berkeley has recorded (*Outlines of British Fungology*, p. 38), the fact of Polyporus lucidus being found in a semi-fossil state in the fens of Cambridgeshire, a position where relics of pre-historic times are common. There is a fine specimen in the Kew Museum. It must be remembered that these fungi cannot be used as tinder unless completely dried, and it is far more probable that dried grasses were, as a rule, used for fire with the aid of flint and iron-pyrites. It is not improbable that the fungi were in those ancient times put to no serviceable use, but were brought "home" as mere objects of curiosity. In ancient villages of pre-historic date, it is by no means uncommon to find coloured and curious stones often transported from long distances, as pudding stone, pieces of coloured quartz, flints of curious shape, fossils, as Echinites, &c. The writer of this once picked up a specimen of Echinites, partly worked, showing that the man who first found it was curious about the ornamental markings he could see outside, and so chipped the fossil to see what there might be inside. *W. G. Smith.*

Hardiness of Hoya carnosa.—In a Fern house, standing on the ground which was once part of Cremorne, and is now in the possession of Mr. Wimsett, of the Ashburnham Park Nurseries, there is a plant of the above of considerable size and full of flower; it is said that it has stood the two last winters without fire-heat, while all the hardier kinds of green-house Ferns perished, except Blechnum braziliense. *R.*

A Fine Plant of Foxglove.—Last year several plants of the Foxglove sprang up in my garden amongst the vegetables, and when the ground was dug in early spring I decided to save one very strong specimen. This was transplanted to a narrow border, where it grew with surprising vigour, and began to flower very early. I do not know the exact date of the expansion of the first flower, but nearly or quite two months must have elapsed between the expansion of the first and last. Besides the main flowering-stem, there were three secondary ones. The main stem was a few inches over seven feet high, and had five lateral branches between 3 and 4 feet from the ground. These branches bore eleven, twelve, fifteen, twenty-one, and twenty-four flowers respectively, and there were 170 seated directly on the stem, making a total of 253. The three secondary stems produced collectively 261 flowers, thus making a grand total of 514. Being struck with the large number of seeds, I took one capsule from above the middle of the flowering part of the main stem and counted the seeds it contained. There were upwards of 1,200, which, multiplied by 514, gives 616,800; and if we make a reduction of more than 100,000 for a smaller production in the upper capsules we have still half a million left. This would be sufficient to plant nearly 12 acres of ground, at a foot apart. My imaginary plantation would yield, assuming the plants to be equally productive, two hundred and fifty thousand million seeds, or enough to plant a surface larger than Great Britain! I have not calculated the produce of the third season; but there would be enough seed to plant all the earth, and some to spare for the moon. But I have a word to say in praise of this native plant, independently of its fertility. It is certainly one of the most showy of hardy Biennials, besides having a characteristic habit of growth. Furthermore, it will flourish in the shade or fully exposed to the sun; and it presents so little surface to the wind, and is so tough, that it does not require tying up. This is not a plant to grow in a town garden, but it is indispensable in parks, rock gardens, and wild gardens. I never saw it so plentiful anywhere else as in Heathfield Park, Sussex, where the soil is very poor and sandy. There it covered acres of ground, intermixed, of course, with other plants; a white-flowered one here and there relieving the purple. *W. B. H.*

Anguloa Clowesii. — In reply to Professor Reichenbach's note (see p. 110) I have to state that in competing for the "Bateman Challenge Medal" in 1866 and 1867 I exhibited at one of the meetings of the Royal Horticultural Society a two-flowered peduncle of Anguloa Clowesii. It was considered so abnormal at that time that Mr. Bateman, in noticing the exhibits generally, referred to it as so extraordinary that it ought to be relegated to the Kew Museum. I am not aware up to that time of any grower having a two-flowered peduncle, but since then I have seen others have it, and it has appeared several times with myself. Why one pseudobulb should do so it would be hazardous to assign a cause, as corresponding pseudobulbs equally strong and well flowered in every way in the same plant do not seem disposed so to "sport." Lycaste Skinneri has a greater tendency to throw two-flowered peduncles, but I never saw any variety produce more, although a lady amateur in the neighbourhood of Liverpool averred that she had a seven-flowered peduncle! "Not seven flowers to the pseudobulb," said I. "No; seven flowers on one stalk." *James Anderson, Meadowbank.*

Herbaceous Plants on the Chalk.—The copious showers and gleaming sunshine which characterised the later spring and early summer months of the present year have caused certain plants to be unusually flourishing and floriferous on the arid chalky soil upon which I have the misfortune to live. The double purple and French white varieties of Hesperis matronalis have been a perfect sight, but have been hard run by the double-flowered form of Spiræa Ulmaria. A plant of Ophrys hircina, now just going out of bloom, is more than 2 feet high. Monarda purpurea towers in purple glory to about 4 feet. Lilium superbum has been very fine, and so has Chrysobactron Hookeri, which I have hitherto utterly failed to bloom in the open border. Oxalis Deppei, lasiandra and vespertilionis, mauritanica and floribunda, have been beautiful from breakfast to noon, and Erodium absinthifolia and macradenium have been unusually fine. Orchis latifolia incarnata and maculata superba were grand. Anemone narcissiflora was the admiration of everybody, and A. rivularis has far exceeded its usual stature. Brugmansia sanguinea and lutea, which have both stood the winter, are 3 feet high, and the latter has a bud nearly ready to open. The hot sun of the last few weeks has been very fatal. All my plants of Meconopsis nepalensis have perished, and various other things are in a sadly drooping condition. The recent thunder showers have just come in time to save widespread withering and death. *H. Harpur Crewe, Drayton-Beauchamp Rectory, Tring, July 29.*

Moreton Hall Melon.—At the Jesuits' College, Roehampton, there is a span-roofed house of this variety, measuring 68 feet, and about 8 wide. The plants are on one side, and trained over the path to the other side. Cutting was commenced in the first week in May. There are now on the same plants fruit in various stages, varying from the size of a walnut to those ripe and ripening. There are certainly sufficient for four crops on at present, and Mr. Davies expects them to produce fruit up to the end of September. The soil is all that could be wished for, and bones are mixed with it; and whenever you see an extra-sized lump of soil or piece of bone there, the roots are round it or into it, giving it the appearance of being covered over with fungus. *R.*

Disa grandiflora.—The Disa grandiflora—or rather the identical variety exhibited by Mr. Speed—has been in this country for at least twenty years. I have flowered it myself several times during that period, and have it in flower now, so that if, as the Editorial bracket observation (see p. 123) suggests it to be the same as Mr. Bull's Barrellei introduced in 1874, it is not new, but one of the good old varieties that many have tried to cultivate, but have not succeeded satisfactorily in doing so. It differs from the so-called Grandiflora superba in having narrower segments scarcely so brilliant in the colour. The labellum, however, is beautifully reticulated with bold crimson-purple lines on a whitish ground. The extraordinary character which Mr. Speed induces it to assume—not one year among half-a-dozen, but year by year—is due to superb cultivation and to that alone; and, if the Committee ever had a "Lindley medal" to dispose of, in my opinion it might have been voted unanimously, as no cultivator has achieved anything like a corresponding success, and that, too, with one of the liveliest and most brilliant Orchids in cultivation. It will only be rendering confusion "worse confounded" to call it Barrellei, which I understood to be a distinct species, and not a "grandiflora." *James Anderson, Meadowbank Nurseries, Uddingston, N.B.*

Boussingaultia baselloides.—Is it a rare occurrence to see this plant in bloom out-of-doors? We planted some tubers in the autumn of 1876 against a south-east wall in a very sheltered position. Last year there was abundance of foliage, and this year, after a luxuriant growth, the plant is in full bloom. The smell is very sweet. Even if it does not bloom the Boussingaultia is well worth growing for the sake of its beautiful glossy leaves, of singular coldness to the touch. In winter the tubers were protected with cinder-ashes. *Severne Majendie, Damyons, Castle Hedingham, Essex.*

An Extraordinary Peach Tree.—In the gardens of E. Cazalet, Esq., Fairlawn, near Tonbridge (Mr. G. Fennell, gr.), is a remarkably large tree of the Noblesse Peach. It covers the entire roof the ordinary distance from the glass, which has a rafter of 13 feet, the house being 35 feet in length. The tree, whose stem measures about 24 inches in circumference 1 foot from the ground, is clothed throughout with ample and peculiarly luxuriant foliage, in this respect resembling the robust leafage oftentimes seen on young trees two or three years after planting out in the Peach-house. It has produced upwards of 500 splendid fruit this season, specimens of which have taken several prizes at the recent exhibitions; fruit from this same tree also secured for Mr. Fennell the Messrs. Veitch's prize for this variety when last competed for in London. *W. Lockyer, Tunbridge Wells.*

The Provincial Show.—I fear the Royal Horticultural Society's Show at Preston has been a comparative failure, both financially and otherwise, and that this may prevent further attempts to hold shows out of London. I hope, however, that another trial may be made, and a better locality selected for the exhibition. It appeared to me from the first that Preston was an unsuitable place; and the local committee delayed the commencement of their operations so long, that really they had not sufficient time to do full justice to the important work they had in hand. On this point I can speak from the experience I gained at the Carlisle International Show last year, which occupied the constant attention of the committee for six months; and it took all the time to get matters properly organised and completed. It would be interesting to have an opportunity of comparing the working expenses of the Preston Show with our expenses at Carlisle; and we might gain some useful experience to guide us in managing such large exhibitions in future. As far as we have learned, there does not appear to have been so good an attendance of visitors at Preston as we had at Carlisle, although they had six days of it, and we had only three days. The number who passed through the gates at Carlisle (excluding free tickets) was 28,000; whereas the greatest number at Preston during the six days was 24,800. We have cleared our large expenses; and had it not been for the boisterous weather and heavy rain, we should have had a large accession to the number of our visitors, and a considerable sum left on our hands. No doubt Carlisle has exceptional advantages from its central position and its remarkable railway facilities; and both home and foreign visitors can reach it from every point of the compass readily, and return to their homes easily by any of the numerous lines which diverge from Carlisle in every direction. *Wm. Baxter Smith.*

The Duke of Buccleuch Grape.—I notice in the issue of July 20th, of your journal, the letter of "Scotia" on the above-named Grape, in which he is more critical upon poor me for praising the Duke Vine than is seemly between lovers of fruits or flowers. What is valued, in this instance, in your pages, is kindly interchange of experience and opinion in regard to new varieties of Grapes. And if I wrote on the subject of the Duke three or four times in twelve months, the product seems only to be "Scotia's" scoffing—*Parturiunt montes nascitur ridiculus mus.* I am bound to hide my diminutive head as "Amateur" before a gigantic authority, who takes upon himself to deliver the opinion of the gardeners of all Scotland. God save the mark! I quote his words (more honestly than he does mine) where he says: "It (the Duke) has been planted with him for five years, and during that time he only records a product of seven bunches, with berries *equal* to Black Hamburghs in size and plumpness. I need hardly say he has

only chronicled a most significant failure. It is lucky for 'Amateur' that he is an 'amateur,' and thus has only his own whims and fancies to please; because no gardener, who has either to keep up a supply for family use, or make up a livelihood from it, could afford to grow Grapes on his *principle*." Now, as to dishonest quotation to begin with, "Scotia" says, quoting me, that I said of the Vine in question, that the berries were "*equal* to Black Hamburghs in size and plumpness." Compare this with what was before his eyes—but he would not quote it—"the berries *excel* Black Hamburghs in size and plumpness, and are much more bright and transparent than any other white Grape." So much for supercilious and unfair dealing in controversy. Then, because the Duke has given me only five bunches this year, he alludes to my "whims and fancies," because no gardener could afford to grow Grapes on my *principle*." What can he mean in regard to "principle" in Grape-growing? What right has he to assume that I ever advised the growing of the Duke for family use or for livelihood to a gardener? I never advised anything of the kind; but simply gave my experience of a, to me, new variety, with which I have, slowly, I admit, to my entire satisfaction, succeeded, while he, proudly but vainly representing all Scotland, has failed, as, whether on the branch or in a pot, "his can scarcely be said to live, it only exists." Does this abject admission not "crack the nut of his displeasure," and account for his envy, that the Duke has been pleased to grow with others when properly treated, but not with himself. As to my "principle," as he calls it, not being suitable for a family or market gardener, my three houses would gladden the heart of any market gardener. Every Vine is loaded with large and beautiful bunches, except the Golden Hamburgh, as before explained, and the Duke, who has only five. But I prefer the Duke to any Vine I have. The berries are beautiful, and in size twice that of Black Hamburgh, or any other but Gros Colman, and considerably larger than that Vine's produce. *Amateur.*

Herbaceous Perennials.—May I add to your list of noteworthy herbaceous plants the Scolymus hispanicus and the Helianthus rigidus, two Composites not so frequently met with as they deserve to be, both on account of their beauty and the easiness of their culture. I find the Scolymus answer perfectly well in a sheltered spot of rockery in my garden, without any other care than protection in spring from slugs, and its tall stems, running upwards of 5 feet high, with large yellow flowers and spinous, white-veined bracts, set in small clusters at the end of the stems or in the axils of the strongly decurrent, Thistle-like leaves, make it a very effective rockery or border plant, contrasting well with those near; it has also the recommendation of lasting in flower for several weeks. The Helianthus rigidus is a taller grower, with its large-cupped blossoms about 3 to 4 inches over, yellow in the ray surrounding a rich brown disk, borne gracefully on long slender footstalks, and is beautiful both for distant effect or nearer examination, and I find it also thrive excellently in rockery where its roots are well protected by masses of Burr from over-exposure to sunshine. *O.*

Mealy-Bug.—Much has been written in your columns on the destruction of this pest, and amongst the nostrums paraffin oil, diluted, was recommended. Mr. Davies, of the Jesuits' College, Roehampton, tried this on the early Vines and Peach trees. The whole were killed. One of the Peach trees was a fine specimen, measuring 2 feet 10 inches round the stump. It was planted forty-two years ago, and bearing annually from 50 to 70 dozen Peaches. Mr. Davies finding, in January, that the Vines and Peach trees were not starting, began to examine them, and found they were dead. The Peach trees were cleared out, a fresh border made, and the most suitable trees from the outside walls brought in; one of these bears now 14 dozen fruit. The stumps of the old Peach trees are planted outside, and are pointed to as a warning to others. The Vines, 30 in number, were all cut down and broke, excepting four; two rods have been trained from each, and the growth they have made is out of the ordinary way indeed. I question if such growth is excelled. It is puzzling to account for the bug getting into the place, as no plants are ever put into the house, nor did I see any pot plants on the place. *R.*

Richardia Æthiopica.—In answer to Mr. Hibberd's inquiries in the *Gardeners' Chronicle*, May 18, respecting the drying-off system, as I am situated in the home of the plant in question, I am in a position to give some information to Mr. Hibberd and your correspondents as to its natural habit and character. I have seen them growing in several locations, viz., mountains, ravines, and the sides of streams, and those found in the latter place are much superior in every respect, the flowers being much larger and produced in double the quantity. I quite agree with Mr. Fish in saying the Richardia is a water-loving subject. Also I consider the continuous growing system, as adopted by Mr. Hibberd, is the proper course of treatment. Yet let it be borne in mind that the Richardia does experience a check (or properly speaking, a rest) which is occasioned by a long continued drought. In summer there is a scarcity of water, owing to having no rain for a period of three months, when every place, comparatively speaking, becomes as dry as dust, but I find it does not receive such a check, or rest, as to cause it losing its entire foliage. My first acquaintance with the Richardia, growing in its natural state, made such an impression upon me that I shall never forget. I was a passenger on board the steamship *Taymouth Castle* to this colony, and the vessel, through having sickness on board, was placed in quarantine. We were destined to serve our term of confinement, or imprisonment, in Saldanha Bay (70 miles distant from Cape Town). While there I had the pleasure of seeing an Island about 20 acres in extent, literally covered with the Richardia in full flower. I found them growing between rocks and loose stones, the soil being principally sand and decayed vegetable matter. The flowers were inferior when compared with those found in moist situations. I may mention that its season of flowering commences in July and continues for months, the three preceding months being our season for rain. Taking these points into consideration they clearly show that moisture is the principal agent in exciting the growth and flowering capabilities of the Richardia. Perhaps it may prove interesting to your readers, who practise Lachenalia-growing to take a hint from the following:—On the above-named Island I saw Lachenalia tricolor with flower spikes from 3 to 4 feet (three parts of spike floriferous); they were growing in pure sand, dry as dust. At the time I was reminded of a wrinkle imparted to me when serving as foreman in a nobleman's garden. Acting according to directions I was compelled to grow the Lachenalia with the pots standing in saucers filled with liquid manure, a course of treatment which proved a failure. *Richard Johnson, Foreman, Glass Department, Botanic Gardens, Cape Town.*

A Horticultural Foundation.—Horticulture as a science has many branches, and it commonly goes deep to the roots of things. The uses of plants are not all yet discovered, and one of the latest discoveries is that potatoes form a substantial substructure for suburban villas. At North-East London many little builders skin off the mould (sometimes brick-earth) and make bricks; they then dig out the sand and make mortar (unless some one will buy the sand, then the builders use mud), lastly, they dig out the gravel for concrete, *i.e.*, if the district surveyor compels them to use it. When there is a large hole dug and the blue clay can be seen at the bottom, the proprietor sticks up a board to intimate that "the desirable piece of land (!) is to be let on a building lease." After a few days dead cats and dogs are to be seen at the bottom of the hole, with the contents of numerous dust bins, the rotten refuse from greengrocers' shops, and old mattresses, foul with vermin and dangerous with the germs of disease. Recently many tons of diseased potatos have been imported, and as the North-Easters boldly refused to eat them, they (the tubers) were shot by cart-loads into some of these holes as foundations for new villas. The villas are never detached or semi-detached, they are always in a row; by this means they partially hold each other up like tipsy men, arm in arm. *W. G. S.*

Pontederia crassipes.—A plant of Pontederia crassipes came into flower in the Royal Botanic Garden of Edinburgh about a fortnight ago. The floral spike was about 1 foot in length, and bore seven flowers. When the flowers were fully expanded, some of them were artificially fertilised by the application of the pollen to the stigma. The day after the fertilisation the flowers began to wither, and on the second day the floral axis began to bend downward towards the water in which the plant was growing. The bending increased rapidly until the flowers at the top of the axis reached the water. The curvature brought the upper and lower portions of the floral axis close to each other, the space between them being about ¼ inch. The curvature is so fine that it is impossible to straighten the axis without running the risk of breaking it. The curvature took place a little below the lowest flowers, and the summit of the floral axis came into contact with the water. *J. H. B., Royal Botanic Garden, Edinburgh.*

Ageratum Snowflake.—This charming Ageratum needs only to be seen—as seen by the writer a few days ago in the beautiful and well-kept flower gardens at Clarendon Park—to be admired. It is of dwarf compact habit, producing, as its name implies, white flowers in great profusion. Mr. Robert Frisby, the gardener at Clarendon, speaks very highly of it—though for that matter it speaks sufficiently well for itself—and as a matter of course has several well-filled beds of this bijou of an Ageratum, which without doubt is an excellent "bedder." Mr. Frisby has introduced carpet-bedding at Clarendon this year, and with very good effect in the terrace garden, a place well adapted for such style of bedding—a style which is fastly, and justly so, on the increase in this and surrounding neighbourhoods. The designs and arrangement of colours have been very prettily and neatly arranged, and just now are well worth walking from the ancient and picturesque city of Salisbury to see. *H. W. Ward.*

Vine Extension.—A remarkable instance of Vine culture on the extension system may be seen at the Jesuits' College, Roehampton. The house is 160 feet long; one vine is planted nearly in the centre, and four rods extend in one direction and two the other. Their present length on either side is 65 feet. Next year two more rods will be started. The vine was planted eleven years ago, and has carried this year 665 bunches, varying in weight from 1 lb. to 2¼ lbs. all well finished. *R.*

The Villa Garden.

The Yellow Calceolaria.—Looking in upon a neighbour a few evenings ago, we found him in great distress on account of the rapid manner in which his yellow Calceolarias were dying. His great pride is a pretty ribbon border on one side of the gravel walk leading from the entrance gate by the roadside to the front door. The plants were put out as usual in June, and while the weather kept moist and cool they had looked fresh and growing, but when the sun burst out into a glorious radiance from an unclouded sky, and the thermometer got above 100° in the sun, then the plants began to flag and die, and when we visited our friend he was gazing on his ruined border, with a grief at his heart something like that a man feels from a reverse in business. A few hours of hot sun wrought havoc akin to that which springs from pestilence. Alas! All our modern introductions in the way of bedding plants have brought us nothing that can be regarded as an effective substitute for the Calceolaria. If some one could only produce a bright golden zonal Pelargonium, he would impart a great boon to flower gardeners. But we fear we are yet a long way from the realization of this desideratum.

There is some reason to fear that calceolarias are put out too late to get established in the soil before hot weather sets in; and especially do these remarks hold good of plants that had been grown on in pots, and were turned out of these into the open ground. Herein lies one of the disadvantages of purchasing bedding plants from a nursery in pots, and yet a great many Villa gardeners do this. If a plant that is pot-bound is planted out in a bed it will often succumb before it can get firmly rooted in the soil. If Villa gardeners who depend on the yellow Calceolaria for this particular hue of colour in their flower-beds and borders would get their plants as rooted cuttings from store pots early in April and then plant them in good soil in shallow boxes, or made up a nice bed in some part of their garden, with some provision for shelter during rough weather, and by-and-by in May transplant to their beds when the weather is mild and showery, the plants would not only be placed out under more favourable conditions, but they would stand a very much better chance of surviving through the summer. There is something in planting out as early as possible, for the quicker the roots of the plants can lay hold on the soil the greater is the chance of their enduring. Then in planting let some good fine soil be placed about the roots, and all pressed firmly down into the bed. There should be no undue haste to water, and if the weather sets in dry, occasional syringings will be found better than pouring water about the roots. If yellow Calceolarias be grown and planted out under these circumstances the cultivator has then done something—perhaps as much as in him lies—to secure the plants standing through the summer.

Substitutes for the Calceolaria.—As far as yellow-flowering plants are concerned, it must be admitted we have not done much in the way of providing effective substitutes. The best thing for the purpose probably is a good dwarf yellow bedding Tropæolum, the plants raised from cuttings but not from seed. There is a variety called Yellow Dwarf, while another is known as luteum improved, and either of these, if propagated by cuttings, produce but very few seed pods, which is all in favour of a continuous bloom. Supposing seed-pods are formed,

they can be picked off by the hand. Then there are the dwarf Marigolds. The best of these is Aurea floribunda, because it is so dwarf in growth, and the flowers large, well-formed and of a fine golden colour. It can be raised from seed, it stands well, and blooms continuously if the decaying flowers are picked off. The dwarf single Tagetes lignata is also a very useful substitute, but it is late in the summer before it gets effective. The yellow bedding Violas are not nearly so much valued as summer bedding plants as they deserve to be. Crown Jewel, yellow Tom Thumb, and Lutea major are all very good bedders if carefully planted out in spring in good light rich soil. Might not Harrison's new Musk be tried as a yellow bedding plant? It is now getting generally grown because of its great usefulness; and if a shallow trench were made, and filled with rich soil, and the plants kept well watered during dry weather, we think much could be made of this fine Musk;—at least, it is worthy a trial.

Garden Turnips.—When early Potatos are dug and Pea and Bean haulm cleared away at this season of the year, the thoughts of the Villa gardener are turned towards a crop of Turnips. This is a delicious vegetable in a young state, and to have good Turnips good sorts need to be selected, and they should be quickly grown. Soil that has been pretty well manured for Potatos and other kitchen garden crops, will be found to bring crisp, sweet Turnips. There are two sorts of Turnips so well adapted for Villa gardens and so thoroughly good that they should be sown for our purpose. They are the American strap-leaved and the red American stone. The first should be sown because of its earliness and quickness to turn in; the other for its good qualities and lateness.

Having forked over the ground to be sown, and made the surface soil somewhat fine, the seed should be sown thinly, and soil and seed pressed down firmly by means of a rake. If the surface lumps do not break readily to pieces a slight dusting of fine soil may be thrown over the seed, and when a shower falls the lumps will soon go to pieces. Turnip seed soon gets into growth, and then comes the danger of attacks from the Turnip fly. He is a small shining black insect, with a voracious appetite and an immense capacity for doing harm. If he and his tribe alight on a piece of young seed Turnips as the plants are putting forth their first young leaves, and the weather keeps dry and hot, scarcely a leaf will remain undevoured. The best antidote is to sprinkle the bed just as the young plants are coming through the soil, or just when the leaves are showing themselves, and dust them over with lime. The fly does not like water; he will flee from its approach, and this is why the insect is so injurious in hot weather, and rarely so when it is wet. Thus great watchfulness is always necessary on the part of a gardener; many things conspire to ruin his crops, and it is only by constant oversight that he can reap the harvest he has to tend from the time of sowing to the time of reaping.

Reports of Societies.

City Flower Show: *July* 23.—It can be fairly said that this exhibition of window plants, grown within the city of London, becomes more and more popular each year. The gardens of Finsbury Circus are too small to accommodate the hundreds of city people who flock to the show so thickly in the evening. The only matter for regret is that some of them are not sufficiently mindful of the grass, flowers, and trees, that cost so much labour and expense to preserve so fresh and bright.

Since the extension of the Metropolitan Railway to Aldgate, gardening in Finsbury Circus is carried on under grave difficulties, for the subterraneous passage runs right under the gardens, from west to east. How this drains away the moisture from the soil in a naturally dry position can be imagined; and it is only a just arrangement that the railway company should pay to the residents of Finsbury Circus a stated sum per annum to assist in maintaining the gardens in good condition. Great credit is due to Mr. A. Mitchell, the gardener, for the condition in which the gardens are kept, in the face of so many difficulties.

As is usual, a large number of plants grown within the city were staged in competition for the prizes in the schedule. Probably owing to the season Musk and Creeping Jennies were not so good as usual, and the latter not nearly so numerous; but Fuchsias and Pelargoniums were plentiful, and in some cases very good. Other flowering-plants comprised Canary Creepers, with Begonia Weltoniensis. The main of the City plants are evergreen, and among these are huge Nettle plants (Coleus fruticosus), Myrtles, Ferns, Orange Trees, Ivies, very nicely grown; Virginian Creepers, and Aucubas, Euonymus, &c. The classes for a collection of plants, any number, and also for plants not mentioned in the schedule, brought a great many things of an interesting character, including Ficus elastica, a capitally grown Loquat, Lilium auratum and L. speciosum, &c. Fern cases were an excellent feature; some of these are highly creditable examples of City culture.

The blue ribbon of the show—the Silver Medal of the Royal Horticultural Society for the best plant—was awarded to Herod Hammond, of the Coal Exchange, for a very fine example of the Onion plant (Ornithogalum longibracteatum). This had four large bulbs and bore three spikes of flowers. The three bronze medals of the Society were awarded to Mrs. P. Jacquiery, for a well-grown Ficus elastica; to Sergeant Halfyard, of the City Police, for a very fine Creeping Jenny; and to Catherine Parr, for the Loquat above referred to.

One object of considerable interest was a model of Cleopatra's Needle on a pedestal formed of growing Mustard and Cress. It was of considerable size, and the even growth of the Mustard and Cress, and the admirable manner in which the model had been covered was praiseworthy. The model was constructed of wood, and over this was stretched thick flannel, and when thoroughly moistened the seed was sown, and only eight days had elapsed from the time of sowing. This was awarded a special prize.

Collections of rare and choice plants were sent by Messrs. James Veitch & Sons, Mr. John Wills, Mr. B. S. Williams, Messrs. W. Rollisson & Sons, and Messrs. W. Cutbush & Sons. Some pitcher plants are included in them, and they appear to be sources of great interest to the city people, and especially to the poorer classes. Messrs. Paul & Son, Cheshunt; W. Cutbush & Son, and Mr. W. Rumsey, sent boxes of capital cut Roses; and Mr. T. S. Ware, examples of cut Perennials. A handsome Fern case was also sent by Messrs. Dick Radclyffe & Co. Without such valuable help, the City Flower Show, full of interest as it is, would make but a poor display.

Marlborough Horticultural and Cottage Garden Society: *July* 29.—The third exhibition of the Society was held in the grounds of Marlborough College, on Monday last, and was regarded as showing a decided advance on others that have preceded it. The tents were pitched in a field in the front of the head master's residence; and when the numerous company attending the distribution of prizes at the College, came on to the ground, the scene was very enlivening. Marlborough can hardly be termed a plant-growing district, but the specimens staged, though small, were nicely grown and presented in good condition. The best four stove and greenhouse plants came from the Rev. T. A. Preston, The Grove, Marlborough (Mr. John Stevens, gr.), and consisted of Lapageria rosea, Abutilon Boule de Neige, A. vexillarium, and Plumbago capensis. There were several collections of four foliage plants, the best came from the Marquis of Ailesbury, Savernake Forest (Mr. C. Grinwood, gr.), having four very nice bright examples. The best four Ferns came from Mr. H. Brooke, Marlborough, the Hon. Sec. of the society, viz., Pelea hastata, Asplenium bulbiferum, Pteris cretica albo lineata, and Adiantum cuneatum. Mr. Grinwood was 2d, having A. farleyense, A. cuneatum and two others. Coleuses were plentifully shown, but somewhat formally trained to flat trellises. The best four came from H. Mansell, Esq. (Mr. D. Morse, gr.), Mr. Brooke coming in with a good 2d. In the winning group the new C. pictus was nicely coloured.

Fuchsias were only sparely represented, the best four coming from the Rev. G. C. Bell, Headmaster of the college (Mr. Cox, gr.). Single Petunias were shown on the sloping flat trellisses, peculiar to the West of England, and were well grown and flowered. the best four coming from W. E. Mullins, Esq. (Mr. E. Holliday, gr.); H. Mansell, Esq., being 2d, and Mr. H. Brooke, 3d. In this class there was a keen competition, and all the plants were admirably grown. The best four Balsams, well grown double varieties, came from Mr. H. Brooke. Pelargoniums did not call for special notice, and the plants of Gloxinias and Achimenes were somewhat under-sized. Begonias were represented by the foliage types, and by the flowering varieties, the latter bearing the choice; but the flowers grown in this locality need improvement, which can be easily brought about, as there are now several good varieties in cultivation. Groups of plants from Savernake and other places came in useful to fill up spare spaces in the tents.

In the cut flower tent an interesting collection of Lilies, brought down by G. F. Wilson, Esq., F.R.S. (who acted as one of the judges), attracted considerable attention. It consisted of longiflorum, Krameri, Svotzianium, tigrinum flore pleno, a finely marked variety of L. speciosum, Nilgherense, chalcedonicum, auratum, and a pale orange form of L. elegans. Considering they had been cut on the previous Wednesday, it was remarkable how fresh and nice they had kept. The special prize of one guinea, offered by Mr. Wilson for the best pot Lily, brought a good example of L. auratum.

Baskets and vases of wild flowers were a very pleasing feature, and being set up with good taste were much admired. The only exhibitor of a dinner-table decorated was Mrs. T. A. Preston, which deserved a much larger prize than was offered in the schedule. There were also classes for three vases for the dinner-table and bouquets, which were well filled. One most interesting class was that for a collection of cut flowers in bunches, perennials and annuals. The best lot—came from R. Lyne, Esq., and were set up with great care. The subjects were double Larkspur, Clarkia elegans, Coreopsis lanceolata, Chrysanthemum tricolor, Blue Nemophila, white and rose-coloured Leptosiphons, Xeranthemum aureum, &c.; 2d, W. E. Mullins, Esq. There were also boxes of cut blooms of stove and greenhouse plans, and boxes of Roses, but they did not call for special remark. Cut blooms of Verbenas, Phlox Drummondii, and Zonal Pelargoniums, were finely shown by Mr. H. Brooke, who was 1st in all three classes, and others. Mr. Brooke's method of backing up his flowers with foliage deserves great praise.

The best six dishes of fruit came from Mr. C. Grinwood, and consisted of black and white Grapes, very fine Peaches, Melons, Morello Cherries, and Currants; 2d, W. E. Mullins, Esq. (Mr. E. Holliday, gr.). The best four dishes were shown by the Rev. J. S. Thomas (Mr. J. Henley, gr.); 2d, Rev. G. C. Bell.

Other fruits were well shown, and so vegetables not for competition were of a meritorious character. The fine weather brought a numerous company, and the funds of the Society will no doubt be a gainer thereby.

Kendal Horticultural: *July* 25.—The summer exhibition of this society was held, as usual, in the Soldier Field. The classes confined to amateurs were well represented, especially in Roses and other cut flowers, as also vegetables, but in the open classes for plants the competition was meagre, and the quality considerably below what might have been expected for the prizes given, particularly in the leading class where 1st 2d, and 3d prizes of £15, £10, and £5, were offered. Mr. Craig, gr. to General the Hon. A. Upton, Levens Hall, was the only exhibitor in the open class of twelve stove and greenhouse plants—six in flower, and six fine-leaved. His collection included a well-bloomed specimen of Stanhopea oculata, Oncidium flexuosum, Anthurium Scherzerianum with very large flowers; a fine example of Adiantum Farleyense, Latania borbonica, and Areca rubra. In the amateur class for stove and greenhouse plants the Rev. J. Gibson took 1st, in whose group was the singular Testudinaria elephantipes, shown on an umbrella-shaped wire trellis. Six exotic Ferns: Of these also Mr. Craig was the only exhibitor. Hardy Ferns were well represented, Mr. J. Gott, in a close competition, taking 1st, having amongst others beautiful plants of Polypodium cambricum, Osmunda cristata, Polystichum cristatum, P. Bradburnii and Aspidium dentatum cristatum; Mr. Wilkinson 2d. In his group were remarkably well-grown examples of Polystichum, aculeatum, proliferum, and Scolopendrium vulgare and albo-marginatum. Collection of plants in 8-inch pots, 1st, Mr. J. Monkhouse. These consisted of flowering and foliage, amongst them was a beautiful Hoya bella. Miscellaneous collection of six stove and greenhouse plants. Mr. Monkhouse 1st, with a neat lot, including the variegated Pine-apple Anthurium Scherzerianum and Curculigo recurvata; 2d, Mr. J. Barrack. Best pair of fine foliage plants (amateurs), 1st, the Rev. J. Gibson, in his exhibit was a nice plant of Yucca filamentosa variegata. Three Fuchsias, 1st to Mr. J. Barrack, with fresh small plants. Roses were the best feature of the show. For twenty-four, Mr. Shand (gr. to the Earl of Lonsdale) took the lead with very fine flowers, the best of which were Louis van Houtte, Duc de Rohan, Mademoiselle Marie Rady, Duke of Edinburgh, and Princess of Wales; Mr. Craig 2d, showing a very good lot. Mr. Shand was also 1st for eighteen; Mr. Craig, 2d. Twelve (amateurs) Mr. Bintley, 1st, having a nice stand; Mr. W. Bolton, 2d. Six (amateurs), Mr. Bintley, 1st; Mr. J. Cleasby, 2d.

Cut flowers were forthcoming in quantity, both stove, greenhouse, and hardy. For a vase, Mr. Monkhouse stood 1st; the same exhibitor was likewise 1st in another class for a vase of cut flowers, and in two classes for bouquets. Messrs. Dickson, Brown, & Tait, and Messrs. Dickson & Robinson, of Manchester, had some fine cut Roses. Messrs. Alexander Ross & Son, nurserymen, Kendal, exhibited an extensive collection of hardy Ferns, neatly shown. Mesers. Little & Ballantyne, Carlisle, contributed a group of New Coniferous and Taxaceous trees, and Roses, the latter consisting principally of the best

hardy kinds that, as may be supposed, are needed for this northern part of the kingdom.

Fruit was somewhat sparingly shown. The best Grapes (Black Hambro) came from Mr. S. Cookson, gr. to F. A. Argles, Esq., Eversley, Kendal; 2d, Mr. J. Leeson, Barrow-in-Furness, with Venn's Black Muscat, large, but scarcely ripe. Mr. Leeson took 1st, with very good Royal George Peaches. Melon, 1st, Mr. Thornborrow.

Didsbury Floral and Horticultural: *July 26 and 27.*—The neighbourhood of Manchester is rich in associations devoted to floriculture and practical botany, and the least that can be said of them, as regards their periodical coming before the public, is that they always present a capital front. The Didsbury Society, as newly constituted, held its Seventh Annual Show on the dates above named. Compared with its predecessors, although there was very little that could be called new, or different, as regarded their composition, there seemed to be a decided improvement in the general complexion. The leading exhibitors and prize-winners among the amateurs were Mr. Joseph Browne, Mr. Hugh Birley, M.P., Mr. J. G. Silkenstadt, Mr. D. Adamson, Mr. Thomas Ashton, Mr. C. P. Henderson, Mr. T. W. Tatton, Mr. William Brockbank, and Mr. J. T. Bolland. The nurserymen who did their best so well were Messrs. E. Cole & Sons, Messrs. Clibran & Son, Altrincham, Messrs. W. & J. Caldwell (whose nursery at Knutsford was established as far back as 1780), Messrs. Dickson & Robinson, Old Millgate, Manchester, and Messrs. Dickson, Brown & Tait, Corporation Street, Manchester. The two last-named firms confined themselves to cut Roses; the others brought up capital lots of miscellaneous large plants and medium ones in nice balance and proportion. The emphasis given by the Palms and other great foliage plants was, without question, remarkably good. Quite as delightful in its own way was the spectacle of the countless greenhouse plants adapted for cultivators who have no space for such things, or the means wherewith to maintain expensive establishments. The plants which most pleased us on this occasion were a beautiful Vanda Batemanni, from Mr. Broome, a Mussænda frondosa from the same gentleman, and a very striking collection of Cockscombs from Mr. T. W. Tatton. The Vanda gave the idea of a great Persian Fritillary, so boundless is the Orchideous race, in the matter alike of colour and inflorescence. The Mussænda, trained over a large oval wire cage, was loaded with its delicate yellow flowers and swan-white wings. Of the Cockscombs, it will suffice to say, that we do not remember ever seeing such handsome ones. Numerous Ferns, Gloxinias, Fuchsias, Caladiums, &c., furnished a nice contrast to very many beautiful varieties of Coleus and Achimenes; and the pot plants, in turn, gave agreeable individuality to two or three score of very creditable bouquets and epergnes. The cottagers came up in strength, showing chiefly vegetables all very meritorious. There were also some collections of wild flowers, presumably gathered in the neighbourhood, but with considerable latitude. On the whole the show was a decided success, speaking well alike for the spirit and industry of the promoters, and for the status of Didsbury horticulture, both private and professional. The amount offered and awarded in prizes was about £100.

Sandringham Estate Cottage Horticultural: *July 24.*—The thirteenth annual exhibition of this Society took place on the above date in Sandringham Park, kindly placed at the Society's service by His Royal Highness the Prince of Wales. It is well suited for a flower show, indeed we have never seen a place better adapted for the purpose; the fine park and gardens being thrown open to the public must afford them great pleasure. They are kept in the finest order, not a weed or a decayed leaf to be seen; the flower garden was just in its beauty, the beds being well filled with gay colours, and arranged so as to produce the best possible effect; the finely-kept grass lawns and the noble specimen trees all combine to produce a charming relief and contrast to the well-blended colours. Nor must we omit the fine lake, with its natural and antiquated-looking rockwork, scarcely to be imagined as man's handiwork, as its appearance is so rustic and the background so perfectly natural, consisting of trees and shrubs growing in a wild state. Facing the lake is the mansion itself, with its fine avenue of Limes leading to the main road. The park and gardens are not the only boon of enjoyment the public have on this day, for greatly amusing and interesting are the kennels, pheasantries, &c., under the superintendence of Mr. Henry Jackson, to whom can be ascribed great credit. The various rare and valuable specimens of dogs, pheasants, and many other birds, some of which were brought from India by the Prince of Wales, seem to be thoroughly at home, and are looking as healthy as one could desire to see them.

The flower show is held about three miles from Wolferton station, and, notwithstanding the shower of the afternoon, the people went by thousands by special trains, from Lynn and various other places. The exhibition was held under large tents, in some of which were a good display of flowers and vegetables, shown by the cottagers on the estate. The Potatos were specially worthy of notice—there must have been more than 100 entries; and, as most of them were fine samples, they were difficult to judge, as was also the case with the Onions, Cabbages, &c., most of which were shown in fine condition. The cut-flowers, such as Roses, Stocks, &c., were a great credit to their cultivators, as were also the window-plants, which were not only well grown, but arranged with taste. The fruit that was in season was also shown in excellent condition, such as Currants, Gooseberries, Raspberries, Cherries, &c., fruits that are desirable for a cottage garden; there were also Apples and Pears, but they are not yet in season. It was a most agreeable sight to witness the cottagers taking the various productions of their labour in the morning, and placing them in their respective places for competition. They all looked so cheerful and happy, gazing with wonderment on each other's things, thinking who would be fortunate enough to obtain the 1st prizes; and again, in the afternoon, they went, dressed in their best, and ready to enjoy the privilege allowed them of walking about the royal gardens and park.

There is great credit due to the committee for their excellent management. Nothing could be more perfect than the way in which the tents were placed and arranged; the large tent contained plants from the Sandringham estate, grown by Mr. Chas. Penny. This was one of the best arranged tents and finest collection of plants we have seen. It was so arranged that visitors could walk through and admire every plant, each standing out boldly for itself, not crowded as we often see them at flower shows; they were well backed up with Tree Ferns, Palms, Aralias, &c. The front rows were arranged with Caladiums, Coleus, Palms, fine Scarlet Pelargoniums, Ixoras, Dipladenias, Allamandas, Liliums, Orchids, and beautifully coloured Crotons, Dracænas, &c., which were artistically blended together, altogether producing a most pleasing effect. The poles of the tent were also crowned with evergreens and flowers, and at the entrance to the show was erected a triumphal arch, having the Crown and Prince of Wales Feathers on the top of it, and being well decorated with flowers and evergreens. It is well worthy of mention that after the expenses of this show are paid, the surplus funds are distributed to the various hospitals and charities of the surrounding neighbourhood, so that from this show much good is done in many ways. (*From a Correspondent.*)

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, JULY 31, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Mean of 18 years.	Temperature of the Air: Highest.	Temperature of the Air: Lowest.	Temperature of the Air: Range.	Temperature of the Air: Mean for the Day.	Temperature of the Air: Departure from Mean from Average of 69 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity: Sat = 100.	Wind: Average Direction.	Rainfall.
July	In.	In.	°	°	°	°	°	°			In.
25	29.54	−0.22	69	58	11	63.7	− 0.5	56.4	82	N.E.; WNW; WSW	0.15
26	29.61	−0.15	72.9	55.0	17.0	62.7	+ 0.5	51.9	69	NW; WNW	0.13
27	29.72	−0.04	73.1	58.5	14.6	63.6	+ 1.4	55.9	77	NW; WNW	0.00
28	29.79	+0.03	71.2	56.0	15.2	61.8	− 0.4	52.5	72	N.	0.00
29	29.83	+0.12	71.5	52.0	19.5	58.5	− 3.8	54.9	87	N.	0.01
30	30.02	+0.26	74.2	51.0	23.2	59.7	− 2.6	53.1	82	N.N.E.	0.04
31	30.18	+0.42	68.5	56.0	12.5	60.9	− 1.4	53.7	77	N.E.	0.00
Mean	29.82	+0.06	71.5	55.4	16.1	61.3	− 1.0	54.1	78	N.	sum 0.33

July 25.—Generally dull, cloudy, and showery. Fine at intervals. Thunder heard in the afternoon. Overcast at night.
— 26.—Fine, bright and clear morning and early afternoon; dull in the evening. A thunderstorm 10 to 11 P.M.
— 27.—Fine bright morning; occasional sunshine afterwards; at times very dull.
— 28.—Fine and bright morning; afternoon bright and warm; cool at night.
— 29.—Fine and dull alternately; a little rain.
— 30.—Fine morning. Rain at 1 P.M.; fine afternoon.
— 31.—Dull morning; generally overcast. Fine and bright occasionally.

London: *Barometer.*—During the week ending Saturday, July 27, in London and suburbs, the reading of the barometer at the level of the sea decreased from 30.09 inches at the beginning of the week to 29.98 inches during the afternoon hours of the 21st; increased to 30.04 inches by midnight of the 22d; decreased to 29.68 inches by 3 P.M. on the 26th; and increased to 29.96 inches by the end of the week. The mean reading for the week at sea level was 29.86 inches, being 0.36 inch lower than that of the preceding week, and 0.09 inch below the average for the week.

Temperature.—The highest temperature of the air during the week was 82°.2 on the 21st, and the highest on the 25th was 69°.3. The mean of the seven highest day temperatures was 75°.3. The lowest temperature of the air in the week was 55°.9, and the mean of the seven lowest night temperatures was 58°.4. The extreme range of temperature in the week was 26°.3, and the mean daily range was 16°.9; the smallest was 10°.8 on the 25th, and the largest was 21°.6 on the 22d.

The mean daily temperatures of the air, and departures from averages, were:—July 21st, 70°.1, + 7°.8; 22d, 67°.9, + 5°.6; 23d, 63°.2, + 1°.0; 24th, 65°.0, + 2°.8; 25th, 61°.7, − 0°.5; 26th, 62°.7, + 0°.5; 27th, 63°.6, + 1°.4. The temperature, therefore, was in excess on every day excepting the 25th; the mean for the week was 64°.9, being 2°.7 above the average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed on grass fully in the sun's rays, was 159°.2 on the 22d; on the 25th its highest reading was 104°.7. The lowest readings of a self-registering minimum thermometer with its bulb placed on short grass, fully exposed to the sky, was 50° on the 26th; and the mean of the seven low readings thus found was 55°.

Wind.—The general direction of the wind for the first three days was N.E. and E.N.E., and for the remainder of the week S.W.

England: *Temperature.*—The highest temperature of the air observed by day was 89°.5 at Eccles, 87°.8 at Bradford, 87°.9 at Leeds, 86°.4 at Nottingham, 86°.1 at Cambridge and Sheffield, 85°.2 at Leicester; the highest temperature at Sunderland was 75°, at Portsmouth was 75°.4, at Plymouth 77°, and at Norwich 79°, at Hull 80°, at Brighton 80°.2; the mean from all the stations was 82°.9. The lowest temperature of the air by night was 48°.9 at Eccles, 51°.9 at Nottingham, 52° at Bristol, 52°.2 at Wolverhampton; at Truro the lowest night temperature was 57°, at Leeds and Brighton 56°; and the mean from all the stations was 54°.4. The range of temperature in the week was greatest at Eccles, 40°.6, the next in order was 34°.5 at Nottingham, 33°.8 at Wolverhampton; the least daily ranges were, at Hull, 18°, at Plymouth 19°.5, at Sunderland 20°; the mean from all stations was 28°.5.

The means of the seven highest day temperatures were 76°.9 at Cambridge, 75°.5 at Bristol and Leeds, 75°.3 at Blackheath and Eccles, and 75°.2 at Nottingham; at Sunderland 67°.5 was the lowest mean at any station; the mean of all was 72°.8. The mean of the seven lowest night temperatures was 54°.1 at Eccles, 55°.6 at Wolverhampton and Hull, 56° at Leicester and Nottingham; the highest means were 61°.4 at Plymouth, 60° at Truro, 59°.8 at Brighton; the mean from all stations was 57°.6. The mean daily range of temperature was greatest at Eccles, 21°.2, the next in order was Cambridge, 20°.8; the least was 9°.5 at Sunderland; the next in order was 11°.5 Portsmouth, 12°.1 Plymouth, 12°.4 Norwich; the mean from all stations was 15°.2.

The mean temperature of the air for the week from all stations was 63°.3 being 1°.7 of lower temperature than the preceding week, and 3°.4 of higher temperature than that of the corresponding week of the year 1877. The highest mean temperatures were at Brighton, 65°.5, Truro and Plymouth, both 65°.4; and the lowest were at Sunderland, 60°.8, Hull, 61°.3, Sheffield, 61°.9, and Leicester, 62°.1.

Rain.—The fall of rain was very variable; it fell on two, three, four, or five days in the week at different places; at Leicester the fall amounted to 1.86 inch, at Bristol to 1.32 inch, at Nottingham to 1.27 inch, and was nearly or exceeded an inch at Liverpool, Eccles, and Bradford. At Norwich the fall of rain in the week was 0.06 inch only; the average fall from all stations was 0.76 inch.

Scotland: *Temperature.*—The highest temperature of the air at Glasgow was 80°, and at Leith 66°.3; the mean from all stations was 73°.7. The lowest temperatures varied from 49°.5 at Edinburgh to 52° at Glasgow. The mean from all stations was 50°.4.

The mean temperature of the air for the week from all stations was 61°.7; the highest was 63°.4 at Glasgow, and the lowest was 59°.7 at Leith.

Rain.—The fall at Dundee was 0.75 inch; no rain fell at Paisley; the average fall was 0.32 inch.

Dublin.—The highest temperature was 79°.4, the lowest 46°.°, the range 33°.1, the mean 62°.8, and the fall of rain 0.61 inch.

James Glaisher.

Variorum.

HOW TO MAKE MOSS-BASKETS.—Very beautiful baskets for holding flowers may be made of the longer and more feathery kinds of mosses. We have made them often; and never do flowers, whether wild or garden, look more lovely than when clustered within a verdant border of that most delicate and beautiful material, which by proper management may be made to preserve its freshness and brilliancy for many months. We will here give a recipe for their manufacture. A light frame of any shape you like should be made with wire and covered with common pasteboard or calico, and the moss, which should first be well picked over and cleansed from any bits of dirt or dead leaves which may be hanging about it, gathered into little tufts, and sewed with a coarse needle and thread to the covering, so as to clothe it thickly with a close and compact coating, taking care that the points of the moss are all outwards. A long handle made in the same manner should be attached to the basket, and a tin, or other vessel, filled with either wet sand or water, placed within to hold the flowers. By dipping the whole fabric into water once in three or four days, its verdure and elasticity will be fully preserved, and a block of wood about an inch thick, and stained black or green, if placed under the basket, will prevent all risk of damage to the table from the moisture. To make such baskets affords much pleasant social amusement for children, who will find a constantly renewing pleasure in varying their appearance. One week, Snowdrops and Crocuses will cluster among the mossy edges; then will come groups of "dancing daffodils" and hazel catkins, which, mixed with ivy leaves, make almost the prettiest dressing that can be found for it. In another week or two, Anemones, Hyacinths, and Jonquils will crave admittance into the place of honour; and long before the basket is decayed, Roses, Lilies, Jasmine, and even Carnations, will have sprung into beauty, and had their day in the favourite moss-basket. — "*Cassell's Popular Educator.*"

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

CARNATIONS, &c.: *C. J.*—The whole-coloured flowers are called selfs. The origin or typal form of all these plants is the Dianthus Caryophyllus, the Clove, Clove Pink, or Clove Gilliflower. It produces flowers either self-coloured or variegated, single or double. The single-flowered forms are not esteemed, but all those with double flowers are more or less highly prized. The double Selfs are simply Cloves with double flowers; those flaked with one or two distinct colours are Carnations, and those bordered with a distinct colour are Picotees. The choice florists' forms of either must have smooth even edges, hence the old definition of a Picotee—fringed edges—would not now hold good as applied to anything of higher rank than a border flower.

CARNATIONS AND PICOTEES: *A Novice.* It has been pointed out that our reply last week under this head, is liable to be misapprehended. What we meant to say in reference to Picotees was this, that in the classification of florists, the red edges are taken first, purple second, and rose and scarlet third. Colour and shades of colour being purely matters of taste, are legitimately open to preference, so that A. may prefer red edges, B. purple, and C. rose, all other properties being equal, without any violation of floral canons.

CROWN PEA: *H. K.* An old acquaintance, known to us under many names. You will find an illustration and something of its history in our volume for 1873, p. 45.

FRUITS TO NAME: *F. H. Cylas.* You should get as many of them named as you can by comparison in your own neighbourhood. Those that you have any doubt about send to the Editors, in a box or basket, securely packed, carefully numbered, and carriage paid. We do not undertake to receive any parcel of fruit sent to be named on which the carriage has not been paid, nor must we be expected to deal with more than six at a time. The fruit should be sent just before it comes to maturity.

GRAPES: *Inquirer.* The berries are affected by rust, which may have been induced by any one of various causes between which we cannot determine. There is no cure for it now.

INSECTS: *B. G. L.* The insect which has bored into the stem of your Saccolabium Blumei, is the larva of one of the species of weevils, which had gone into the pupa state and died, so that we cannot say to what genus or species it belonged; *Anon.* The insects sent are the common little black bark mite. *I. O. W.*

KOROMIKO: *J. S.* The Koromiko of New Zealand is a species of Veronica, which no doubt would grow in favoured places in this country. No doubt it can be grown from seed, but would be quickest propagated by cuttings.

LIBOCEDRUS CHILENSIS: *J. C. Mundell.* Your tree has been possibly turned by the hot sun and drought at the roots. Without further knowledge we can suggest no further explanation.

NAMES OF PLANTS: *J. G. Mitchinson.* Symphytum officinale, the common Comfrey, probably just as useful for forage as the cultivated one.—*J. T. F.* Asclepias curassavica.—*An Old Subscriber.* Erica Tetralix.—*R. S.* Diplacus glutinosus; *W. M.* 1, Not recognisable: 2, Adiantum hispidulum; 3, Pteris serrulata cristata; 4, Asplenium flaccidum; 5, Caladium.

NEW ZEALAND PINES: *J. S.* The Cowdie, Cowrie, or Kaurie Pine of New Zealand, is Dammara australis, the tree which produces the Kaurie resin used in the manufacture of varnish. It grows from seed, but would only thrive in this country in climatically favoured localities. New Zealand plants generally are only half-hardy in this country.

ONCIDIUM STIPITATUM PLATYONYX: *An Old Subscriber.* The only information we have is contained in Professor Reichenbach's description published in our columns a few weeks ago, so that we cannot assist you at present with any cultural details.

PETUNIA: *R. W.* Your seedling is a neatly formed and prettily coloured double variety, quite worthy of cultivation, though we are doubtful as to its distinctness.

POTATOS GROWING IN THE AXILS OF THE LEAVES: *G. Peckham.* Every year brings us similar specimens to the one you send, and we have illustrated them two or three times.

SPORTING CARNATIONS. *J. G. W.* Such variations seem to be more frequent than usual this year in the Carnation and Clove Pink. These plants are of very mixed origin, and the sports in question are probably sudden attempts to go back to some of the parent forms.

STOVE: *T. J. G.* How can you expect a stove intended to hold coke enough for ten or twelve hours' consumption, without attention, to be a small and cheap affair. Such a stove or boiler must of necessity be of a large size and proportionate cost, and altogether unnecessary for heating only 40 or 50 feet of piping. A small gas stove would be ample.

STRAWBERRY: *The Ferns.* You can get the Vicomtesse Héricart d'Thury Strawberry true from any respectable nurseryman who makes them a speciality. Consult our advertising columns.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors,*" and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

COMMUNICATIONS RECEIVED.—J. H.—G. T. M.—R. D.—J. R. M.—W. S.—J. M.—J. M., Dublin.—W. H. G.—D. M.—J. & Sons.—F. H. C.—W. B.—L. & B.—W. B. H.—T. S. J.—J. M.—J. H.—A. D.

Markets.

COVENT GARDEN, August 1.

The soft fruit being nearly over, our market has been somewhat quieter during the last few days, but prices remain the same. The first Kent Filberts are to hand, and are a very good sample. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apricots, per dozen	1 6–	3 0	Melons, each	3 0–	8 0
Figs, per dozen	1 6–	6 0	Oranges, per 100	6 0–	12 0
Filberts, per lb.	0 9–	1 0	Peaches, per dozen	4 0–	12 0
Grapes, per lb.	1 0–	6 0	Pine-apples, per lb.	2 0–	8 0
Lemons, per 100	4 0–	12 0	Strawberries, per lb.	0 6–	3 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0–	4 0	Herbs, per bunch	0 2–	0 4
Aubergines, p. doz.	3 0–	..	Horse Radish, p. bun.	4 0–	..
Beans, French, per lb.	..	0 4– 0 6	Lettuces, Cos, Eng., per score	1 6–	2 6
— broad, per bush.	3 0–	..	Mint, green bunch	0 4–	0 6
Beet, per doz.	1 0–	2 0	Onions, young, bun.	0 4–	0 6
Cabbages, per doz.	1 0–	2 0	Parsley, per bunch	0 4–	..
Carrots, per bunch	0 4–	0 6	Peas, green, per qr.	1 0–	2 0
Cauliflowers, per doz.	4 0–	6 0	Radishes, per bunch	0 1–	0 3
Celery, per bundle	1 6–	2 0	— Spanish, doz.	1 0–	..
Chilis, per 100	5 0–	..	— New Jersey, doz.	2 0–	..
Cucumbers, each	0 4–	1 6	Shallots, per lb.	0 6–	..
Custard Mar., doz.	3 0–	..	Spinach, per bushel	2 0–	3 0
Endive, per doz.	1 0–	2 0	Tomatos, per dozen	2 6–	3 0
Endive, Batav. dozen	1 6–	..	Turnips, new, p. bun.	0 6–	..
Garlic, per lb.	0 6–	..	Vegt. Marrows, doz.	2 0–	..

Potatos:—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	6 0–	12 0	Fuchsias, per dozen	4 0–	18 0
Bouvardias, do	12 0–	24 0	Hydrangea, per doz.	9 0–	18 0
Calceolarias, p. doz.	4 0–	12 0	Mignonette, per doz.	3 0–	9 0
Campanula, per doz.	6 0–	12 0	Musk, per dozen	2 0–	6 0
Coleus, per dozen	3 0–	9 0	Myrtles, per doz.	6 0–	12 0
Crassula, per dozen	9 0–	24 0	Palms in variety, each	2 6–	21 0
Cyperus, do.	6 0–	12 0	Pelargoniums, per dozen	6 0–	24 0
Dracæna terminalis	30 0–	60 0	— scarlets, zonal, per dozen	2 6–	9 0
— viridis, per doz.	18 0–	24 0	Petunias, per dozen	4 0–	12 0
Euonymus, var., doz.	6 0–	24 0	Rhodanthes, p. doz.	6 0–	12 0
Ferns, in var., doz.	4 0–	18 0	— Fairy, per doz.	9 0–	12 0
Ficus elastica, each	2 6–	15 0			
Foliage Plants, various, each	2 0–	10 6			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6–	1 0	Pelargoniums, 12 spr.	0 9–	1 6
Bouvardias, per bun.	1 0–	4 0	— zonal, 12 sprays	0 4–	1 0
Calceolaria, 12 bun.	9 0–	18 0	Phlox, 12 bunches	6 0–	12 0
Carnations, 12 bunch.	4 0–	12 0	Pinks, var., 12 bun.	4 0–	9 0
Cornflower, 12 bun.	3 0–	6 0	Primula, double, per bunch	1 0–	2 0
Eschscholtzia, 12 bun	..	0 2– 0 6	Pyrethrum, 12 bun.	3 0–	6 0
Eucharis, per doz.	4 0–	12 0	Roses (indoor), doz.	1 0–	12 0
Gardenias, 12 blms.	3 0–	9 0	— (outdoor), 12 bun.	4 0–	12 0
Gladioli, various, 12 spikes	1 0–	4 0	Stephanotis, 12 sp.	3 0–	9 0
Heliotropes, 12 sp.	0 6–	1 0	Stocks, 12 bunches	4 0–	9 0
Jasmine, 12 bunches	4 0–	9 0	Sweet Peas, 12 bun.	2 0–	6 0
Mignonette, 12 bun.	3 0–	6 0	Sweet Sultan, 12 bun.	6 0–	9 0
Myosotis, 12 bun.	3 0–	6 0	Tropæolum, 12 bun.	1 0–	4 0

SEEDS.

LONDON: *July* 31.—More animation now characterises the trade for farm seeds—the successive arrival on Mark Lane of various samples of the new crops naturally affording increased scope for business. Trifolium incarnatum continues to be the article most in request, and a further substantial advance in its value has been established. The demand, however, has run mainly upon new parcels: and only to a limited degree has yearling seed improved in price. The home inquiry has during the last few days become stronger: many of the provincial firms have apparently resolved to follow the French lead, and lay in at any rate some stock before quotations can take another spring upwards. In Trefoil seed there is nothing doing of importance; holders still ask rates considered prohibitory by the London trade. In view of the favourable reports of the Continental crops, buyers here are only willing to operate at about 18*s.* to 19*s.* per cwt. In red Clover seed the business passing is *nil.* Advices from the Western States and from Ontario hold out the promise of an abundant harvest. The new Timothy is also highly spoken of. Some choice samples of new Alsike and white Clover from Germany have lately been shown here. New Rape seed ripens freely at moderate rates; the yield in some parts of the country is said to prove disappointing. For sowing Mustard there is now a rather better sale. Hemp, Canary, and Millet seed are without alteration; all three varieties are obtainable at unusually low prices. The new Rye from Essex is both good and cheap. *John Shaw & Sons, Seed Merchants,* 37, *Mark Lane, London, E.C.*

CORN.

Trade was again quiet at Mark Lane on Monday, and no decided change in prices can be reported. There was no new Wheat on the market worth speaking of, but the foreign importations were liberal, and prices remained steady. As regards Barley, Oats, Maize, Beans, and Peas, quotations were pretty well upheld.—On Wednesday trade was again very quiet, but as holders were not anxious to sell, slight firmness of tone has to be reported. The supply of English Wheat was short. Foreign Wheat was in good supply, but well held. Barley drooped rather, and there was scarcely any market for Malt. Oats and Maize were steady, as also were Beans, Peas, and flour.—Average prices of corn for the week ending July 27:—Wheat, 44*s.* 7*d.*; Barley, 37*s.* 4*d.*; Oats, 28*s.* 5*d.* For the corresponding period last year:—Wheat, 64*s.* 6*d.*; Barley, 39*s.*; Oats, 27*s.* 10*d.*

CATTLE.

There was a larger supply of beasts, a third of them at least being American, at Copenhagen Fields on Monday, and prices for the best quality improved. The supply of sheep was smaller than the previous week, but trade was active, and prices rather better. In lambs the trade was not so good, and prices generally were lower. Calves still sold well. Quotations:—Beasts, 5*s.* 6*d.* to 5*s.*, 10*d.*; and 5*s.* 4*d.* to 5*s.* 6*d.*; second quality do., 4*s.* 4*d.* to 5*s.* 6*d.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 6*s.* 4*d.* to 6*s.* 6*d.*; 5*s.* 8*d.* to 6*s.*; and 5*s.* to 5*s.* 6*d.*; lambs, 7*s.* to 8*s.* 4*d.*; pigs, 3*s.* 8*d.* to 4*s.* 8*d.*—On Thursday a good supply of stock was on offer, but for both beasts and sheep the demand was quiet. Lambs were in great request, but were barely so firm in price; and calves sold at late rates.

HAY.

At Whitechapel on Tuesday the demand for fodder was very slow, and prices ruled low. The supply was moderate. Prime old Clover, 120*s.* to 135*s.*; inferior, 80*s.* to 90*s.*; new Clover, 100*s.* to 105*s.*; prime old meadow hay, 90*s.* to 100*s.*; inferior, 50*s.* to 70*s.*; new, 80*s.* to 85*s.*; and straw, 43*s.* to 53*s.* per load. On Thursday the supply was rather short, and a better demand prevailed at previous quotations. Cumberland Market quotations:—Superior old meadow hay, 95*s.* to 105*s.*; inferior, 75*s.* to 84*s.*; new, 70*s.* to 84*s.*; old Clover, 130*s.* to 138*s.*; inferior, 100*s.* to 112*s.*; new, 84*s.* to 105*s.*; straw, 52*s.* to 58*s.* per load.

POTATOS.

With a moderate supply on offer in the Borough and Spitalfields market, trade was steady at the following rates:—Regents, 120*s.* to 140*s.*; Shaws, 85*s.* to 120*s.*; kidneys, 120*s.* to 140*s.*; Victorias, 120*s.* to 140*s.*—The imports into London last week were 243 packages from Boulogne, 617 bags Bremen, 22 Denmark, 60 bags 27 bushels 30 sacks Malta, 98 baskets Rotterdam, and 7 Hamburg.

COALS.

There was no change in the prices for all descriptions on Monday, while on Wednesday trade was steady at previous quotations. Prices:—Walls End—Hetton, 17*s.*; Hetton Lyons, 15*s.* 3*d.*; Lambton, 16*s.* 6*d.*; Original Hartlepool, 17*s.*; Wear, 15*s.*; South Hetton, 17*s.*; Tunstall, 15*s.* 3*d.*; Chilton Tees, 16*s.*; South Hartlepool, 16*s.*; Tees, 16*s.* 9*d.*; Hutton, 16*s.* 6*d.*

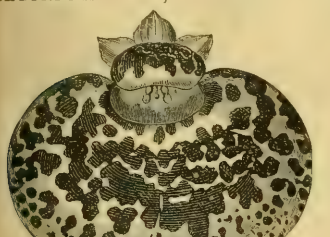
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FLOWER SEEDS FOR 1878,

Post Free.

	Per packet—*s.*	*d.*
AURICULA, finest show varieties ...	1	6
„ Alpine, finest mixed	1	0
BEGONIA HYBRIDA, finest mixed ...	2	6



CALCEOLARIA, Williams' Superb Strain, per packet, 5*s*., 3*s*. 6*d*., 2*s*. 6*d*., and 1 6

From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice Strain .. per packet, 5*s*., 3*s*. 6*d*., 2*s*. 6*d*., and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5*s*., 3*s*. 6*d*., 2*s*. 6*d*. and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

SOLANUM HYBRIDUM, "Empress" (New) .. .. per packet 2 6

ILLUSTRATED GENERAL, AND ALSO NEW PLANT CATALOGUES,

Now ready, post-free to all applicants.

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

GOOD THINGS.

NEW COLEUS totally distinct from all others ever yet sent out, and will add an additional charm to every Greenhouse. Their many colours are very vivid and attractive. G. Bunyard, Kentish Fire, Lord Falmouth, post-free, 1*s*. 6*d*. each, the three for 3*s*. 6*d*.

Cyclamen for Winter Blooming.

H. CANNELL begs to announce that he has several thousands of BULBS of the above now in splendid condition of various sizes. They are all from the First Prize London Exhibition Plants, therefore cannot fail to give the utmost satisfaction; 4*s*., 5*s*., and 6*s*. per dozen.

Chrysanthemums.

H. CANNELL begs to announce that his collection of 500 varieties of the above are in fine condition, and he can offer a few thousands of the very best kinds just now ready for shifting in 6-inch pots for winter blooming, 20*s*. per 100.

The Home for Flowers, Swanley, Kent.

IRON ROOFS for SALE, Cheap.—Several Iron-framed Roofs, from 20 feet to 40 feet span (not curved, no skilled labour required in fixing), covered with galvanised corrugated Iron. Apply HEMMING AND CO., 47, Moorgate Street, London, E.C.

Greenhouses.

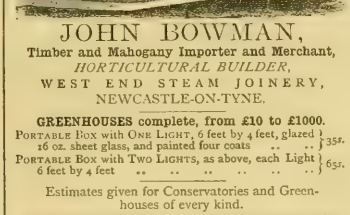
H. FREEMAN AND SONS, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 40 feet long, 13 feet wide, £50; 21 feet by 13 feet, £28; 12½ feet by 10 feet, £15. Estimates given in wood or iron.

Glasshouses.

HEREMAN AND MORTON give prices for all kinds of HORTICULTURAL BUILDINGS in WOOD On receipt of particulars. Also for Heating.

A Pamphlet 3d. Price Lists free.

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JOHN BOWMAN,
Timber and Mahogany Importer and Merchant,
HORTICULTURAL BUILDER,
WEST END STEAM JOINERY,
NEWCASTLE-ON-TYNE.

GREENHOUSES complete, from £10 to £1000.

PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } 35*s*.

PORTABLE BOX with TWO LIGHTS, as above, each Light 6 feet by 4 feet .. .. } 65*s*.

Estimates given for Conservatories and Greenhouses of every kind.

Well-seasoned Materials and First-class Workmanship guaranteed.



LASCELLES' PATENT BENT WOOD CONSERVATORIES and GREENHOUSES. — All Gardeners know that Wood is better than Iron for Plant Growing, and by the above system a handsome curved house can be erected as cheaply as a plain straight one.

The curved house is more durable, stronger, lighter in construction, and no bent glass is required.

W. H. LASCELLES, 121, Bunhill Row, London, E.C., will supply Drawings and Estimates free of charge.

HORTICULTURAL WINDOW GLASS.

A large variety of sizes, 15-oz., 12*s*. 6*d*.; 21-oz., 16*s*. 6*d*. per 100 feet. Large sizes, in Cases, for Cutting up—15-oz. 4lbs, 30*s*.; 3ds, 40*s*. per 300 feet;—21-oz. 4lbs, 30*s*.; 3ds., 40*s*. per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

BELGIAN GLASS for GREENHOUSES, &c.,
Can be obtained in all sizes and qualities, of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. & 21-oz.

BAMBOO and other CANES.—To Nurserymen and Gardeners.—Largest and best assortment in England, at P. B. HARKINS' Timber Yard, Dutton St., Liverpool.

JOHN MATTHEWS, The Royal Pottery, Weston-super-Mare, Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS of superior quality, from 1 to 30 inches diameter, stand the frost and seldom turn green. ORCHID, FERN, SEED, and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price Lists post-free.

Sheets of Designs, 6*d*. Books of Designs, 2*s*.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.



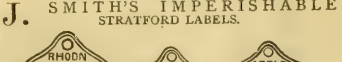
The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

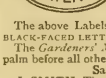
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Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s*. per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.

See Addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves. A liberal Discount to the Trade.

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many undreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.

"*The Ryleys, Alderley Edge, Manchester.*—Messrs. Hill & Smith.—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted.—Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

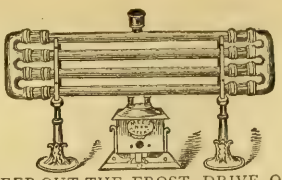
EXCELLENCE IN DESIGN AND WORKMANSHIP.

J. WEEKS & CO., HORTICULTURAL BUILDERS, HOT-WATER APPARATUS MANUFACTURERS,

And PATENTEES of the DUPLEX UPRIGHT TUBULAR BOILER and FUEL ECONOMISER,

KING'S ROAD, CHELSEA, S.W.





KEEP OUT THE FROST, DRIVE OUT THE DAMP, and WARM YOUR GREENHOUSES or other Places, by MEE'S PATENT PORTABLE COMBINATION HOT-WATER APPARATUS.

Price, with packages, £4 10s.

F. AND J. MEE, Hot-water Engineers and Patent Boiler Makers, 11, Wood Street, Liverpool.

Important to all Admirers of Clean, Healthy Foliage.

SPEED'S



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes:—"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."

Mr. D THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2s., 3s. 6d., 6s., and 10s. each.

It is most economically applied with a Vaporiser, price 2s.

Prepared by Alfred Lowe, Chemist, Chesterfield

Agents:—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Dick Radclyffe & Co., 126, High Holborn, W.C.; W. Cutbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co.; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Balmoral; Dorking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, E. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, Jackson & Son; Beverley, G. Swailes; Wavertree, J. Dewar & Co.; Newcastle-on-Tyne, J. Thompson; Worksop, T. Marris.

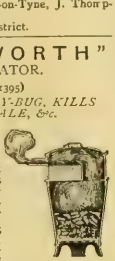
Agents wanted in every district.

THE "CHATSWORTH"
VAPORISING FUMIGATOR.
(J. S. Ellis' Patent, No. 1395)

KILLS THRIPS, KILLS MEALY-BUG, KILLS RED-SPIDER, KILLS SCALE, &c.

Price 37s. 6d.





This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective mode of ridding them of that enemy to Cultivation, *Filth*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation; *for it is self-acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Plants or Flowers.*

Testimonial from Mr. Speed,
Gardener to His Grace the Duke of Devonshire, Chatsworth.

"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Squibs, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug, and most Scale, is a thing to be remembered.

"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being exposed before passing into the house make it quite safe to be left until the combustion is finished.

"THOMAS SPEED,
"The Gardens, Chatsworth, October 9, 1877.

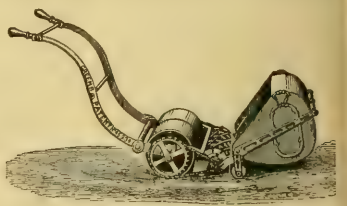
"Mr. Ellis, Norfolk Foundry, Sheffield."

Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

GREAT REDUCTION IN THE PRICE OF

GREEN'S
PATENT "SILENS MESSOR,"
Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1878.

The Winner of every Prize in all cases of competition.



To cut 6 inches	Price	£1 15 0
Can be worked by a Lady.		
To cut 8 inches	,,	2 10 0
Can be worked by a Lady.		
To cut 10 inches	,,	3 10 0
Can be worked by a strong Youth.		
To cut 12 inches	,,	4 10 0
Can be worked by a Man.		
To cut 14 inches	,,	5 10 0
Can be worked by a Man.		
To cut 16 inches	,,	6 10 0
This can be worked by one Man on an even lawn.		
To cut 18 inches	,,	7 10 0
Can be worked by Man and Boy.		
To cut 20 inches	,,	8 0 0
Can be worked by Man and Boy.		
To cut 22 inches	,,	8 10 0
If made stronger, suitable for Donkey, 30s. extra.		
To cut 24 inches	,,	9 0 0
If made stronger, suitable for Donkey, 30s. extra.		

Prices of Donkey, Pony, and Horse Machines on application.

☞ Carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

The superiority of our Machines over those of all other makers is universally acknowledged. They will Cut either Long or Short Grass, Bents, &c., wet or dry.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

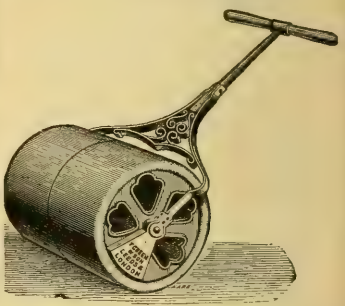
These Advantages no other Lawn Mowers possess.

Every Lawn Mower sent out is warranted to give entire satisfaction, otherwise it may be returned at once, free of cost to the purchaser.

The largest stock of Mowers kept in London, and including all sizes from 6 to 48 inches, is to be seen at our London Establishment, 54 and 55, Blackfriars Road, where purchasers can select out of several hundred Machines, and have their orders executed the same day they are received.

N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an efficient staff of Workmen is kept at both places.

GREEN'S PATENT ROLLERS
For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.
SUITABLE FOR HAND OR HORSE POWER.



They can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or from the Manufacturers,

THOMAS GREEN & SON,
SMITHFIELD IRONWORKS, LEEDS;
And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

**** Carriage paid to all the principal Railway Stations in the United Kingdom.

Descriptive Illustrated Price List Free on Application.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5s. 6d.; 5 bags, 25s.; 12 bags, 50s.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE.

As supplied by M. H. Bentote to the Queen, Prince of Wales, Emperor of Germany, Messrs. Carter & Co., Veitch & Sons, Wills, Bull, Daniels, Ewing, &c.

3d. per bush.; 100 for 20s.; truck (loose, 250 bush.), **30s.**
4 bushel bags 4d. each.

LIGHT BROWN FIBROUS PEAT.—5s. 6d. per sack, 5 sacks 25s., 12 for 45s.
BLACK FIBROUS PEAT.—5s. per sack, 5 sacks 22s., 12 for 40s. Sacks 4d. each.
COARSE SILVER SAND.—12. 9d. per bushel, 15s. half ton, 28s. per ton, in 1 cwt. bags 4d. each.
YELLOW FIBROUS LOAM.—1s. per bushel, 13s. half ton, 23s. per ton.
LEAF MOULD.—1s. per bushel, 13s. half ton, 23s. per ton, in 1 cwt. bags 4d. each.
SPHAGNUM MOSS, 8s. 6d. per sack. All kinds of MANURES, GARDEN STICKS, TOBACCO CLOTH and PAPER, and every GARDEN REQUISITE.
Write for free PRICE LIST. Goods free to rail.
Post-office Orders payable at King Street, Covent Garden, W.C. Cheques crossed London and County Bank, Covent Garden, W.C.

H. G. SMYTH (late M. H. Bentote),
8, CASTLE STREET, ENDELL STREET, LONG ACRE, LONDON, W.C.
(Three Minutes from Covent Garden Market.)

ODAMS' MANURES
FOR ALL CROPS.

Manufactured by the NITRO-PHOSPHATE and ODAMS' CHEMICAL MANURE COMPANY (LIMITED), consisting of Tenant-Farmers occupying upwards of 150,000 acres of Land.
Chairman.—ROBERT LEEDS, Keswick Old Hall, Norwich.
Managing Director.—JAMES ODAMS.
Sub-Manager and Secretary.—C. T. MACADAM.
CHIEF OFFICE—109, Fenchurch Street, London, E.C.
WESTERN COUNTIES BRANCH—Queen Street, Exeter.
Particulars will be forwarded on application to the Secretary, or may be had of the Local Agents.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists. Strongly recommended in the *Gardener*, and by many first-class Gardeners. Has an established reputation for efficacy.
Prepared by JOHN KILNER, Wortley, near Sheffield.

KREPIN.—A new Liquid for Garden, Field, House, and Stable use, for the immediate destruction of all kinds of Insects, Eggs, Larvæ, without injury to Plants, Fruits, or Animals. Approved of and recommended by the German Ministry of Agriculture, and other high authorities on the Continent. Has a pleasant smell, and is suitable for Flower-tables and Conservatories.
Sold in Bottles at 1s. 6d., 2s. 6d., and 10s. each. Extra for Vaporisers, 1s. 3d. and 3s. 6d. May be obtained through all respectable Nurserymen and Seedsmen. Chief Depôt—
H. AND F. BONTEN, 116, Queen Victoria Street, E.C.
Agents wanted.

WASPS and FLIES *v.* FRUIT.—Protect your fruit both indoor and out by using DAVIS'S WASP DESTROYING MIXTURE, the best article ever used. Certain destruction of these pests. Price 1s. 6d. and 2s. 6d. per bottle, with full directions and testimonials of its efficiency.
The Trade supplied by Messrs. CORRY AND SOPER, Shad Thames, London, and by the Manufacturer, B. R. DAVIS, Yeovil Nurseries and Seed Warehouse, Yeovil.

NETTING for FRUIT TREES, SEED BEDS, RIPE STRAWBERRIES, &c.
TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3d. per yard, or 100 yards, 20s.; 4 yards wide, 6d. per yard, or 50 yards 20s.
NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6d. per yard; 4 yards wide, 1s. per yard; ¾-inch mesh, 4 yards wide, 1s. 6d. per yard.
TIFFANY, 6s. 6d. and 7s. 6d. per piece of 20 yards.
EATON AND DELLER, 6 & 7, Crooked Lane, London Bridge.

COCOA-NUT FIBRE REFUSE.—Reduced Price:—In 4 bushel bags, bags included, at 1s., or truckload of about 250 bushels, 25s. (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.



T. H. P. DENNIS & CO.

MANSION HOUSE BUILDINGS,
QUEEN VICTORIA STREET, LONDON, E.C.,
CONSERVATORY AND GREENHOUSE BUILDERS,
AND
HOT-WATER ENGINEERS.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH,

MANUFACTURERS of PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.

DESCRIPTIVE LISTS Free by Post. *Orders amounting to 40s. Carriage Paid.*

36-GALLON SWING WATER BARROW.



The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

Cash prices. Carriage paid to any Station in England.

Price	£2 10 0
Ditto, with two tubs	3 8 0
Spreader and Valve	extra 0 15 0
Garden Engine and fitting for tub ..	2 7 0
18-Gallon Barrow, with Galvanised Tank	2 2 0
30-Gallon ,, ,,	2 12 0

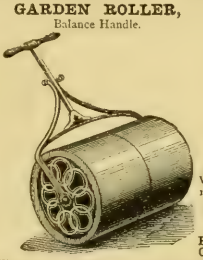
THE HAMBURGH FIRST PRIZE
LAWN WATERING MACHINE,
WITH POWERFUL GARDEN ENGINE.



Cash Prices. Carriage paid to any station in England.
Complete (36 gallons) £6 10 0
If without Pump 3 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.
The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLLER, Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by 18 in. diam.			£1	17 6
20	,,	20 ,,	2	5 0
22	,,	22 ,,	2	12 6
24	,,	24 ,,	3	5 0

DOUBLE-CYLINDER.

18 in. long by 16 in. diam.			£2	5 0
20	,,	18 ,,	2	12 6
22	,,	20 ,,	3	5 0
24	,,	22 ,,	3	15 0
26	,,	24 ,,	4	5 0

PORTABLE PUMP.

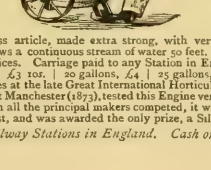


For Liquid Manure or Water.
With stand .. £2 5 0
10 feet of India-rubber Suction Pipe, with Clip and Strainer .. 1 10 0

Powerful Garden and Conservatory Engine.
Can be used with a pail or Water-barrow, £2 2s.

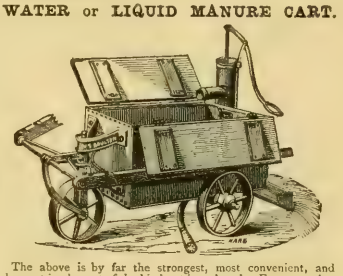


IMPROVED GARDEN ENGINE.



A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.
Cash Prices. Carriage paid to any Station in England.
15 gallons, £3 10s. | 20 gallons, £4 | 25 gallons, £4 10s.
The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£10 10 0
,, 200 ,, ...	12 10 0
,, 250 ,, ...	14 10 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	3 15 0
Spreaders .. .. .. each	0 15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,
SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

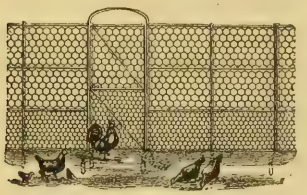
To hold 60 gallons with one tank ..	£6 0 0
,, 100 ,, ,, ,, ..	8 0 0
Valve and Spreader for ditto	1 5 0

Goods amounting to 40s. sent carriage free to any of the principal Railway Stations in England. Cash or reference respectfully requested with transmission of all first orders.

BOULTON & PAUL,

Manufacturers of New and Improved

POULTRY FENCES.



This fence is a much stronger description of fencing than the lattice panels with loose standards, and is more portable, being made in lengths 6 feet long with double pronged feet. A run or pen can be formed of any length or shape without extra cost; it is easily fixed or removed; the gate can be placed in any part of the fence.

PRICES:—

6 feet high, including all necessary Bolts and Nuts .. .. 5s. per yard.

Doorway complete, 2 feet wide, including Standards and Arched Stay .. .. .. 13s. 6d. each.

Angle-iron Pillars for Corners, with Cast Ornaments .. .. 3s. each.

Carriage paid on orders of 40s. value. Orders executed on receipt.

NEW POULTRY LIST, with Illustrations, on application.

BOULTON AND PAUL, NORWICH.

GREEN'S PATENT GRASS EDGE CLIPPER,

Specially Designed for

Cutting the Overhanging Grass on the Edges of Walks, Borders, Flower Beds, &c.

It is simple in construction, is easily worked, and reduces labour immensely.



Size—8 inches wide, with roller 9 inches diameter, £2 10s.

Delivered, Carriage Free, at all the principal Railway Stations and Shipping Ports in England, Ireland, and Scotland.

THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS:

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.



Rustic Garden Furniture in great variety.

Garden Seats, Awnings and Tents, Rustic Tables, Chairs, and Flower Stands, Lawn Mowers, Garden Rollers, Water Barrows, Wheelbarrows, Garden Tools, Fancy Wirework, Birdcages, Hammocks, and all kinds of Garden Furniture at lowest marked prices. *Catalogues post-free.*

THE PANKLIBANON, 56, BAKER STREET, W.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.

MAW AND CO., Benthall Works, Broseley.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck-loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.

The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

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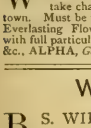
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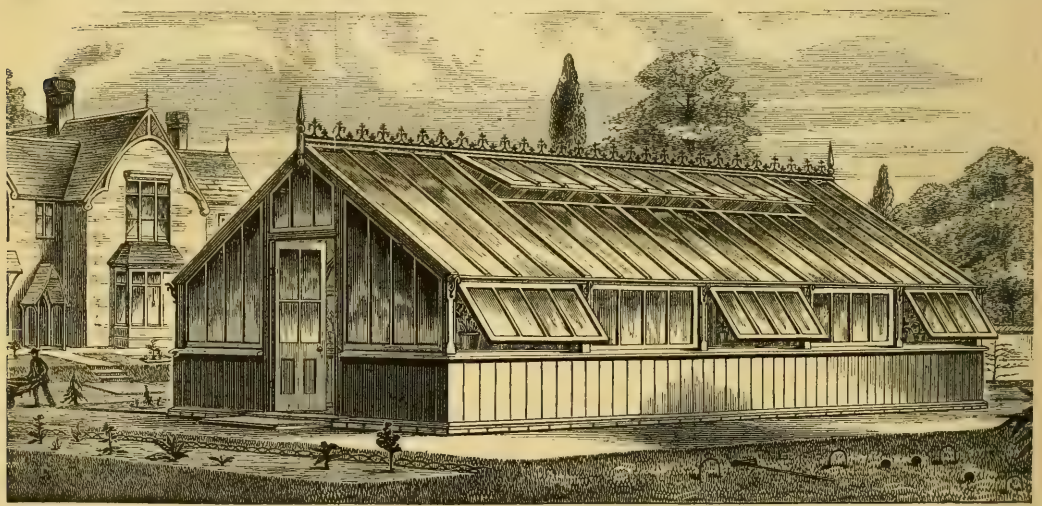
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to
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SUTTON and CHEAM HORTICULTURAL and FLORICULTURAL SOCIETY.
President—Sir H. W. PEEK, Bart., M.P.
The FIFTEENTH ANNUAL SHOW of this Society will be held in The Cedars, adjoining the Railway Station, Sutton, on THURSDAY, August 15, 1878. A Military Band will be in attendance. At 6 o'Clock the Prizes will be distributed. The Show will be opened at 2 P.M. to Subscribers on presenting their tickets, and to the Public on payment of 2s. 6d. Admission after 4 o'Clock, 1s. Children, half-price.
W. R. CHURCH, Secretary.

ROSE BUDS for BUDDING.—150 choicest varieties, H.P., Tea, and Noisette, 8s. 6d. per 100; sample dozen, 1s. 4d.; nice Bloom-Buds, 6s. per 100.
W. CAUDWELL, F.R.H.S., The Ivies, Wantage.

CAMELLIA and AZALEA STOCKS.—A few thousands, in small pots, fit for immediate working, for Sale.
CHARLES B. SAUNDERS, Nurseryman, Jersey.

FERNS.—Osmunda alpestre, and eighteen other hardy sorts, named, five of each sort for 12s.; three of each sort for 7s., package included; one of each small, named, post-free 3s. R. CANDY, Gardener, Portishead, Somerset.

GLADIOLI.—Spikes of Bloom now ready. Price on application to
KELWAY and SON, Langport.

B. MALLER has yet to offer 2000 GREVILLEA ROBUSTA, fine, in 48-pots; 75s. per 100, 12s. per dozen.
The Nurseries, Lee and Lewisham.

PASSIFLORA CŒRULEA.—Very strong, in 60 pots, 3s. 6d. per dozen, 21s. per 100, for cash.
MORLE, 50, Kennington Park Road, S.E.

Grevillea robusta.

SANDY and SON offer beautifully-grown PLANTS of the above, in 4-inch pots, 1 foot to 18 inches; 50s. per 100
The Nurseries, Stafford.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR and SUGDEN, 12, King Street, Covent Garden, W.C.

To the Trade.

STANDARD ROSES.
JNO. JEFFERIES and SONS offer extra fine Standard ROSES, and will be pleased to quote Special Prices for delivery in Autumn.
JNO. JEFFERIES and SONS, Royal Nurseries, Cirencester.

PROTHEROE and MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING
GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, and Other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of
Messrs. R. SILBERRAD and SON, 15, Harp Lane, Great Tower Street, London, E.C.

EWING and CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

For Autumn Exportation.

J. VANDER SWAELMEN'S ENGLISH TRADE CATALOGUE is now ready, containing the most commercial Plants and Bulbs. Free on application.
The Lily Nursery, Ghent, Belgium.

Strawberries.

WM. CUTBUSH and SON beg to announce that their DESCRIPTIVE PRICED CATALOGUE of the above is Now Ready, and will be sent post-free on application.
Highgate, London, N., and Barnet, Herts.

WANTED, the PRESENT ADDRESS of J. W. SMITH, late of 302, Bowling Back Lane, Bradford.—E. P. DIXON, 57, Queen Street, Hull.

Geranium Cuttings.

WANTED to Purchase, cuttings of choice Gold and Silver Tricolor, Bronze and Zonal GERANIUMS. Send list of sorts, and price per 100 or 1000, to
DANIELS BROS., The Town Close Nurseries, Norwich.

To Yorkshire Gardeners.

WANTED, some WINESOUR PLUMS. Apply, stating price.
Mr. BAXTER, Foots Cray Place, Foots Cray, Kent.

WANTED, strong Rooted Cuttings of GERANIUMS Vesuvius, Master Christine, Mdme. Vaucher, and Mrs. Pollock
W. HOWARD, Southgate, N.

WANTED, CUTTINGS of Greenhouse and Bedding Shrubs or Plants, hard, soft-wooded, or herbaceous stuff, named. List and price to
C. R. FREEMAN, Seed Grower, Norwich.

WANTED, a quantity of the following TRADE PLANTS:—Adiantum pubescens, Pteris serulata, Pteris serulata cristata, Lomaria gibba. Sample and price to
J. and R. THYNE, Great Western Nursery, Glasgow.

Strawberry Plants.

DR. RODEN'S new late Seedling, MRS. LAXTON, and other choice Seedlings, are now ready for delivery. Illustrated priced descriptions provided in exchange for stamped addressed envelope, on application to
THE GARDENER, Morningside, Kidderminster.

LILY OF THE VALLEY, finest strong crowns for forcing at 45s. per 1000. AZALEAS with buds, in nice healthy plants for the market. CAMELLIAS, nice plants at lowest rates. Orders requested at once. Prices on application to
ROBERT NEUMANN, The Nurseries, Erfurt.

To the Trade.

SEEDLINGS, Good and Strong, of DRACÆNA AUSTRALIS, at 15s. per 100; AKALIA SIEBOLDII, at 5s. per 100; CHAMÆROPS EXCELSA, at 7s. per 100; ditto, in single pots, 4 and 5 leaves, at 15s.; AGAPANTHUS FL. ALBA, at 10s. per cwt.; RHUBARB, QUEEN VICTORIA, at 4s. per cwt.—SEEMANN and GOEPEL, The Nurseries, Wandsbeck, near Hamburg, Germany.

To Amateur Strawberry Growers.

RUNNERS, strong and well-rooted, are now ready, from H. D. Thury, President, Sir J. Paxton, and B. Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants post-free, 1s.
Manual on Strawberry Culture, 6d.
W. LOVELL, Strawberry Grower, Weaverthorpe, York.

To the Trade.

LILIUM AURATUM, 12s. per dozen, extra fine; HYACINTHS, White Roman; JONQUILS, double; NARCISS, paper-white and double Roman; ANEMONE FULGENS; SNOWDROPS, double and single; BEGONIA ROEBELI, double white NARCISS. Prices low, quality extra.
F. SANDER and CO., Seed Growers, St. Albans.

Strawberries.

CHARLES TURNER is now prepared to supply strong runners of all the established varieties, as well as several little known but excellent kinds. For full descriptions, see Charles Turner's LIST, which may be had post-free on application.
The Royal Nurseries, Slough.

SEEDLINGS.—Immense quantities of Thorns, Scotch Firs, Alder, Birch, &c., for transplanting and in strong plants. Apply to
Messrs. LEVAVASSEUR and SONS, Nurserymen, Ussy, Calvados, France.

A. RIEMSCHNEIDER, Brandenburg-on-Havel, Germany, has to offer Helleborus niger, 90s. per 100; Cypripedium macranthum and guttatum, 70s. per 100; Cyclamen græcum, Coum, odoratum and repandum, 30s. per 100; Lily of the Valley, single blooming crowns, 35os. per 10,000.

ORCHIDS.—Thousands of choice Orchids fron Assam, Brazil, the West Indies, and from the cool mountain ranges of Columbia, carefully selected by the Travellers of the New Plant and Bulb Company, Lion Walk, Colchester, have arrived in fine masses and in excellent condition. Orchid Growers are respectfully requested to make an early application, so as to secure the strongest pieces.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

Hollies.

C. WHITEHOUSE, Brereton Nursery, Rugeley, Staffordshire, has to offer extra fine one-year seedling and two years transplanted Hollies, 9 to 18 inches, well rooted, a large portion suitable for working. A sample 100 sent for 10s., for cash only with order. Now is a good time to move them.

STRAWBERRY PLANTS.—100,000 Vicomtesse Héricart de Thury (Garibaldi), now ready for shifting into 6-inch pots, and all the best proved Covent Garden kinds. Special quotations for large quantities. Catalogue, with valuable information, post free.
H. CANNELL, F.R.H.S., Swanley, Kent.

TRIPOLI ONION SEED. Giant Rocca, 6d. per ounce; Large Late Flat Red, 6d. per ounce; Large Late Flat Red, extra, 1s. per ounce; Large Late Flat White, 6d. per ounce; Large Late Flat White, extra, 1s. per ounce; New Queen, 1s. per ounce.
Illustrated CATALOGUE on application.
BIDDLES and CO., The Penny Packet Seed Company, Loughborough.

The Cabbage that will Not Run is

HENLEY CHAMPION.—It is the earliest and best Cabbage in cultivation. It may be sown and planted at any time of the year, and will not run. 1s. per ounce, post-free. E. JONES, Seedsman, Henley-on-Thames.

To the Trade.

ROMAN HYACINTHS, white and blue; NARCISSUS, double Roman and paper-white; SNOWDROPS, single and double. Special low quotations on application to
JAMES CARTER, DUNNETT and BEALE, High Holborn, London, W.C.

SALES BY AUCTION.

Cool Odontoglossums.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company of Colchester to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 15, at half-past 12 o'Clock precisely, a splendid consignment of ODONTOGLOSSUMS and other ORCHIDS, from the highest mountain ranges of Colombia, comprising fine healthy pieces of O. crispum, Pescatorei, Phalænopsis triumphans, lævе, hastilabium, and many other fine things.

On view the morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, August 16, at half-past 12 o'Clock precisely, the remainder of the importation of ODONTOGLOSSUM PARDINUM and O. EDWARDII, recently received by Mr. F. Sander; also an importation of ORCHIDS from Brazil, and several other importations of Orchids from various parts; 100 Pots of BEGONIA FREBELLI in Flower, BAMBOO CANES, &c.

On view the morning of Sale, and Catalogues had.

Auction Mart, Tokenhouse Yard, near the Bank of England

IMPORTANT SALE of a celebrated collection of ORCHIDS

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION at the Mart, Tokenhouse Yard, City, E.C., on MONDAY, August 19, at 12 for half-past 12 o'Clock precisely, a magnificent COLLECTION of ESTABLISHED ORCHIDS in the best possible health, including several handsome specimen Cypripediums, Saccolabiums, Vandas, Cattleyas, &c.; also fine plants of Odontoglossum vexillarium and Roezlii; Masdevallia Harryana, Lindeni and coccinea; Lælia purpurata, majalis, flava, autumnalis, alba la and anceps; Cattleya gigas, eldorado, Mendelii, superba and marginata; Dendrochilum filiforme; Oncidium cucullatum, pectenium, Marshallii, dasystyle, cheirophorum, and other rare varieties; Cymbidium eburneum, C. Mastersii; Cypripedium Parishii, Sedenii, Stonei, Harisii; Odontoglossum Alexandræ, pulchellum majus, leopardinum grande and Phalænopsis; Pescatorea cerina; Pleione humilis, maculata; Saccolabium ampullaceum, Blumei, curvifolium pacmorsum, guttatum; Sobralia macrantha; Sophronitis coccinea and grandiflora, Vanda cærulea, tricolor formosa, Parishii, tuvis, and undulata; Paphinia cristata; Miltonia; Lycaste Skinneri, Epidendrum vitellinum majus; Dendrobium Ainsworthii, Cambridgeanum, crystallinum, Devonianum, Falconeri, heterocarpum, nobile, Schroderi, thyrsiflorum, and Wardianum

On view morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers and Valuers, 93, Gracechurch Street, E.C., and Leytonstone, E.

Brixton Hill, S.W.

FINAL CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Streatham Place, Brixton Hill, on TUESDAY, August 20, at 12 o'Clock precisely, handsome specimen AZALEAS, CAMELLIAS, and other GREENHOUSE PLANTS, in excellent condition; FRAMES and PITS, LAWN MOWING MACHINE, CARTS, NEST of SEED DRAWERS, and other EFFECTS.

On view day prior to Sale. Catalogues had on the Premises, and of the Auctioneers, 93, Gracechurch Street, and Leytonstone, E.

TO BE LET or SOLD, a large PLOT of GROUND, about 20,000 feet super. Suitable for Nursery or other purposes.

Mr. AYLETT, Birkbeck Road, Upper Holloway, N.

TO BE LET, at Michaelmas next, the ABINGDON SEWAGE FARM, containing about 15 Acres of Pasture and 35 Acres of Arable Land. The land is very valuable for the cultivation of Vegetables, and will be let on a Lease for seven years, a copy of which can be seen on application at the Town Clerk's Office, Abingdon, where further information can be obtained.

Kent.

COUNTRY HOUSE to LET on LEASE.—Rent £90 per annum. Situate at Mereworth, two miles from S.E.R. The house contains ten Rooms, and there is Stabling, Coach House, and Gardener's Cottage. The house stands in a valuable FRUIT PLANTATION, returning about £40 annually. The whole being about 2 acres.

For particulars apply to GEORGE BUNYARD, The Nurseries, Maidstone. No Agents need apply.

FOR DISPOSAL, through ill-health, an excellent FLOWER, SEED, FRUIT, and BULB BUSINESS, situate in a main thoroughfare, and doing a large and increasing trade. Incoming about £300. To any one wishing to commence business, this is an unheard-of opportunity.

Full particulars by addressing A. Z., *Gardeners' Chronicle* Office, W.C.

TO BE SOLD, as a going concern, a FREEHOLD NURSERY, including Plant and Utensils in trade. Admirably situate, 3 miles from London, and near railway station. It comprises well arranged Nursery, plentifully supplied with water, extensive range of Glasshouses heated by hot-water apparatus on the most approved principle, Potting Sheds, Stable, Cart Shed, &c., also a pair of genteel Villa Residences. Price for the whole, £2500: part can remain. Apply personally to

Mr. ARTHUR SENELE, Auctioneer, Valuer, &c., Wood Green, N.

To the Trade.

NEW ENGLISH SOWING RAPE SEED.

H. AND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.

Fine Samples WHITE MUSTARD. Prices (with samples) may be had on application.

Seed Growing Establishment, Wisbech.

To the Trade.

SELECTED STOCKS.—Freeman's May Queen Broccoli,* Allheart Cabbage, Wheeler's Imperial and Drumhead Cabbage; Celery, extra fine Cress, Rainbow Kale, Seakale Seed, &c. Lists and Prices on application.

C. R. FREEMAN, Seed Grower, Norwich.

BEGONIA SEED—Saved from exceedingly beautiful varieties of the handsome-flowered tuberous-rooted section. The flowers have been carefully fertilised, so that splendid new kinds may be expected from this seed. 1s. 6d. and 2s. 6d. per packet.

PRIMULA, CINERARIA, and CALCEOLARIA, from Prize Strains, the best that can be purchased, each at 1s. 6d. and 2s. 6d. per packet

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

STRAWBERRY PLANTS.—Well rooted, strong runners, of following varieties, purchaser's selection, 3s. 6d. per 100, our selection, 2s. 6d. per 100, 20s. per 1000, true to name:—Aromatic, Amateur, British Queen, Bicton Pine, Black Prince, Countess, Comtesse, Comte de Zans, Crimson Queen, Comte de Paris, Dr. Hogg, Duke of Edinburgh, Elton Pine, Eleanor, Exquisite, Early Prolific, Enchantress, Eliza, Garibaldi, John Powell, Grosse de Sucrée, Oscar, Marguerite, Lucas, Prince Arthur, Prince of Wales, President, Premier, Royalty, Sir C. Napier Sir J. Paxton, Sabreur, Scarlet Pine, Souvenir de Kieff, Stirling Castle, Traveller, The Countess, Vicomtesse de Thury, Unser Fritz, Wonderful, W. J. Nicholson. Not less than twenty-five of a sort supplied at 100 rate; 100 plants in twenty sorts, 5s.; 100 in fifty sorts, 7s.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

FOR FORCING.

SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.

By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.

ROSE QUEEN OF BEDDERS,

Booked for autumn, 12s. per dozen, 75s. per 100.

CHARLES NOBLE, Bagshot.

Camellias, Indian Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate that his stock of budded plants of Camellias and Indian Azaleas and of Decorative Palms is unusually fine this season, and will be ready for delivery, at very moderate charges, on and after September 1. Also the following desirable plants are in prime condition:—Ghent Azaleas, Azalea mollis, Spiræa japonica, and Lilies of the Valley, Greenhouse Ferns for furnishing, and general Nursery Stock as well.

The new CATALOGUE will be issued shortly.

A. VAN GEERT, The Continental Nurseries, Ghent, Belgium.

ORCHIDS.—Thousands of choice Orchids from Brazil, West Indies, Colombia, Assam, &c., in fine imported pieces, at 3s. 6d., 5s., 7s. 6d., and 10s. 6d. A choice selection of Established and Semi-established plants, growing freely and in good health, also kept in stock. Orchid growers are respectfully requested to make an early application to the NEW PLANT AND BULB COMPANY, Lion Walk, Colchester, in order to secure the best pieces.

N.B.—The Brazilian Orchids are to hand, in fine condition. 20,000 Orchids from Colombia have arrived.

SPECIAL OFFER to the TRADE of HARDY BULBS and FLOWER ROOTS.

Camassia esculenta, 20s. per 100.
Colchicum autumnale, fl. pl., 25s. per 100.
Delphinium nudicaule, 17s. per 100.
Dielytra spectabilis, strong plants, 25s. per 100.
Erythronium dens-canis, fl. roseo, 7s. per 100.
Hemerocallis fulva, 12s. per 100.
Iris crista, 17s per 100.
" germanica, the best named varieties, 13s. per 100.
" pumila azurea, 17s. per 100.
Lilium bulbiferum, 42s. per 100.
" Martagon, 20s. per 100.
" tigrinum, 5s. per 100.
" " fl. pl., 6s. per 100.
" " splendens, 8s. per 100
" umbellatum atro-sanguineum, 20s. per 100.
" " grandiflorum, 25s. per 100.
" " speciosum superbum, 34s. per 100.
Muscari botryoides, 4s. per 100.
Muscari comosum monstrosum, 5s. per 100.
Narcissus bifolus, 4s. per 100.
" odorus (Campernel Jonquil), 4s. per 100.
" poeticus, fl. pl., 5s. per 100.
" Tazetta aureus (Grand Soleil d'Or), 9s. per 100.
" telamonius, fl. pl., 7s. per 100.
Orchis maculata, home grown, 10s. per 100.
Ornithogalum splendens, 3s. per 100.
Platycodon grandiflorum, fl. cœruleo (Campanula grandiflora), 17s. per 100.
Polygonatum multiflorum (Convallaria multiflora), 9s per 100
Saxifraga granulata, fl. pl., 34s. per 100.
Scilla hyacinthoides cerulea, 5s. per 100.
" patula albida, 7s. per 100.
" patula atro-cerulea, 7s per 100.
Smilacina bifolia (Convallaria), 9s. per 100.
Spiræa filipendula, fl. pl, 9s. per 100
Triteleia uniflora, 3s. per 100.

FLOWER ROOTS for COLD FRAMES.

Canarina campanula, 34s. per 100.
Cyclamen persicum, fl. roseo, 25s. to 67s. per 100.

All grown in pots.

HARDY PERENNIALS.

Spiræa Aruncus, 25s. per 100.
Spiræa palmata, 84s. per 100.
Spiræa japonica (Hoteia), 14s. per 100, £5 17s. per 1000.

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK,
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

GOOD THINGS.

NEW COLEUS, totally distinct from all others ever yet sent out, and will add an additional charm to every Greenhouse. Their many colours are very vivid and attractive. G. Bunyard, Kentish Fire, Lord Falmouth, post-free, 1s 6d. each, the three for 3s. 6d.

Cyclamen for Winter Blooming.

H. CANNELL begs to announce that he has several thousands of BULBS of the above now in splendid condition, of various sizes. They are all from the First Prize London Exhibition Plants, therefore cannot fail to give the utmost satisfaction. 42s., 5s., and 6s per dozen.

Chrysanthemums.

H. CANNELL begs to announce that his collection of 500 varieties of the above are in fine condition, and he can offer a few thousands of the very best kinds just now ready for shifting into 6-inch pots for winter blooming. 20s. per 100.

The Home for Flowers, Swanley, Kent.

PRIMULAS, CINERARIAS, CHOICE GERANIUMS, &c.—Striped Vesuvius and Salmon Vesuvius, 1s. 6d. each; White Vesuvius and Dr. John Denny, 2s. each, post-free; twelve fine distinct Geraniums for pot culture, winter blooming, &c., 4s. and 6s., post-free. Primulas and Cinerarias, 2s. per dozen, post-free; Roman Hyacinths, fine bulbs, 2s. 6d. per dozen, 17s. per 100.

STOVE and GREENHOUSE PLANTS in great variety.

CATALOGUES on application. Special cheap offers to Gentlemen furnishing new Conservatories, Greenhouses, &c.; also to those planting Herbaceous Borders of Herbaceous and Alpine Plants, Florist's flowers, &c.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To Market Gardeners.

(To be sent out in the Autumn.)

MARÉCHAL NIEL, grafted on Brier roots, 4000 fine plants, fit for pot culture, at £2 12s. per 100, £16 per 1000.

VIOLA, Belle de Chatenay, fine, in good transplanted young plants, at £1 5s. per 100, and £10 per 1000. Other varieties of Viola, such as Marie Louise, Parma, Czar, do. white flower, for disposal in large quantities.

As many orders last season could not be supplied, as the Stocks run out, orders must be sent immediately to

L. PAILLET, Nurseryman, Chatenay by Sceaux near Paris, France; or to his Agents, Messrs. SILBERRAD AND SONS, 15, Harp Lane, Great Tower Street, London, E.C., where CATALOGUES and Trade Lists may be had on application.

Come and See.

MY DAHLIAS, PELARGONIUMS, FUCHSIAS, VERBENAS, MIMULUS, VIOLAS, PETUNIAS, LOBELIAS, BEGONIAS, PANSIES, &c.; they are now in full bloom and a grand sight, as they embrace all the best varieties in cultivation

CATALOGUE post free.

The Home for Flowers, Swanley, Kent.

HYACINTHS, TULPS, CROCUS,

GLADIOLI, &c.

Our Revised LIST for 1878 is now ready, and will be handed to all Gardeners and Amateurs, post-free, on application to

Messrs. MERTENS AND CO., Forwarding Agents, 5, Billiter Square, London, E.C., or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.



The Pine-apple Nursery, Maida Vale, LONDON, N.

E. G. HENDERSON AND SON can supply SEED of the following, quality of strains are the best that can be grown, at per packet:—

PRIMULA SINENSIS FIMBRIATA, mixed colours or separate, 2s. 6d.

PRIMULA SINENSIS FIMBRIATA, double-flowered, white or mixed, 2s. 6d. and 5s.

PRIMULA SINENSIS FIMBRIATA, Maiden's Blush, new double, 2s. 6d. and 5s.

CINERARIA and CALCEOLARIA, each 2s. 6d.

CYCLAMEN PERSICUM GRANDIFLORUM, 1s. and 2s. 6d.

PANSIES, best English and blotched flowers, each 1s. 6d.

CARNATION and PICOTEE, each 2s. 6d.

RICHARD SMITH, WORCESTER.

STRAWBERRIES.—Strong plants of the leading sorts can be supplied from the open ground after July 15, at 5s. per 100. See Descriptive FRUIT LIST, to be had on application.

RICHARD SMITH AND CO., Nurserymen, Worcester.

VINES—VINES—VINES.

A splendid lot of well hardened Canes, fit for immediate planting. All the most approved varieties. 7s. 6d. and 10s. 6d. each. Also

FIGS IN POTS,

Well set with Fruit, 5s. to 10s. 6d. each.

APPLY TO

OSBORN AND SONS,
THE FULHAM NURSERIES, LONDON, S.W.

WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS,
HERTS.

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

OSBORN AND SONS'

GENERAL CATALOGUE

Of STOVE and GREENHOUSE PLANTS is now ready. It contains a Descriptive List of the leading Novelties, also of Azaleas, Camellias, &c. Post-free on application.

THE FULHAM NURSERIES, LONDON, S.W.

RICHARD SMITH
WORCESTER

ROSES, choice Tea-Scented and Noisette, in great variety.
ROSES, Hybrid Perpetual, strong, for forcing.
ROSES, New, for 1878
CLEMATIS JACKMANNI and many other sorts for bedding and climbing.
Bedding Plants, strong and healthy; Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.

Descriptive priced LISTS free on application.
RICHARD SMITH AND CO., Nurserymen, Worcester.

THE
NORTH of ENGLAND ROSE NURSERIES,
CATTERICK BRIDGE and SCORTON,
YORKSHIRE.

MESSRS. ROBERT MACK & SON

Respectfully inform the Trade and the Public that having purchased the Freehold, with the entire Stock and Appurtenances of these extensive Nurseries, and the Goodwill of the Business from the Executors of the late Mr. JOHN HARRISON, they intend to carry on and to extend the business in all its branches.

The Cultivation of the Rose in all approved varieties, for which the soil of the Nurseries is so admirably adapted, will be, as heretofore, a leading feature of the Business; but it is their intention to maintain such a Stock of Forest and Fruit Trees, Ornamental Shrubs, choice Greenhouse, Conservatory, and Stove Plants, and Florists' Flowers, as will enable them to execute with promptness and with satisfaction, both to the Trade and to the Public, all orders in these departments.

They retain the services of Mr. CHRISTOPHER SCOTT as General Manager, and are confident that his skill as a Horticulturist, and the personal attention of the resident Partner, Mr. R. MACK, Jun., will enable them to maintain the high character for excellence that attached to the products of these Nurseries under the management of the late well-known proprietor, and largely to extend the connection formed by him. Mr. GEORGE STAIRMAND will continue in the Management of the Scorton Nursery.

CATALOGUES of the NEW ROSES of 1878, and of the General Stock, will be sent on application to

ROBERT MACK AND SON, Catterick Bridge, Yorkshire, to whom all orders and other communications are to be addressed.—July, 1878.

Important to all Admirers of Clean, Healthy Foliage.

SPEED'S



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes: —"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."

Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2*s*., 3*s*. 6*d*., 6*s*., and 10*s*. each.

It is most economically applied with a Vaporiser, price 2*s*.

Prepared by Alfred Lowe, Chemist, Chesterfield.

Agents:—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Dick Radclyffe & Co., 128, High Holborn, W.C.; W. Cutbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co.; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Balmoral; Dorking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, E. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, T. Jackson & Son; Beverley, G. Swailes; Wavertree, J. Dewar & Co.; Newcastle-on-Tyne, J. Thorpson; Worksop, T. Marris.

Agents wanted in every district.

PEAT.—The West Moors Horticultural Peat Supply.—C. R. HOLLOWAY, Christchurch, Hants—Brown, Fibrous, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turves and carefully loaded into Railway Trucks, at 17*s*. 6*d*. per ton, in loads of 4 Tons and upwards. Sample bag, 5*s*., five bags, 21*s*.; 12 bags, 40*s*. Some also, of good quality, at 13*s*. 6*d*. per four tons and upwards.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 56 6*s*. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21*s*. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5*s*. 6*d*.; 5 bags, 25*s*.; 12 bags, 50*s*.
Fresh SPHAGNUM, 10*s*. 6*d*. per bag.
WALKER AND CO, Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE.

As supplied by M. H. Bentote to the Queen, Prince of Wales, Emperor of Germany, Messrs. Carter & Co., Veitch & Sons, Wills, Bull, Daniels, Ewing, &c.

3d. per bush.; 100 for 20s.; truck (loose, 250 bush.), **30s.**
4 bushel bags 4d. each.

LIGHT BROWN FIBROUS PEAT.—5*s*. 6*d*. per sack, 5 sacks 25*s*., 12 for 45*s*.
BLACK FIBROUS PEAT.—5*s*. per sack, 5 sacks 22*s*., 12 for 40*s*. Sacks 4*d*. each.
COARSE SILVER SAND.—1*s*. 9*d*. per bushel, 15*s*. half ton, 26*s*. per ton, in 1 cwt. bags 4*d*. each.
YELLOW FIBROUS LOAM.—1*s*. per bushel, 13*s*. half ton, 23*s*. per ton.
LEAF MOULD.—1*s*. per bushel, 13*s*. half ton, 23*s*. per ton, in 1 cwt. bags 4*d*. each.
SPHAGNUM MOSS, 8*s*. 6*d*. per sack. All kinds of MANURES, GARDEN STICKS, TOBACCO CLOTH and PAPER, and every GARDEN REQUISITE.
Write for free PRICE LIST. Goods free to rail.
Post-office Orders payable at King Street, Covent Garden, W.C. Cheques crossed London and County Bank, Covent Garden, W.C.

H. G. SMYTH (late M. H. Bentote),
8, CASTLE STREET, ENDELL STREET, LONG ACRE, LONDON, W.C.
(Three Minutes from Covent Garden Market.)

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blights, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen in Boxes, 1*s*., 3*s*., and 10*s*. 6*d*. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1*s*. 6*d*., 2*s*. 6*d*. and 5*s*. per bottle. May be obtained through all Seedsmen, or direct from

JOHN SCOTT, The Royal Seed Stores, Yeovil.

The Orchardist, by J. Scott, price 3*s*. 6*d*., the best work in the English language on Fruit Trees and their Cultivation.

WASPS and FLIES *v.* FRUIT.—Protect your fruit both indoor and out by using DAVIS'S WASP DESTROYING MIXTURE, the best article ever used. Certain destruction of these pests. Price 1*s*. 6*d*. and 2*s*. 6*d*. per bottle, with full directions and testimonials of its efficiency.

The Trade supplied by Messrs. CORRY AND SOPER, Shad Thames, London, and by the Manufacturer, B. R. DAVIS, Yeovil Nurseries and Seed Warehouse, Yeovil.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck-loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

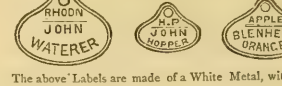
WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

Indestructible Terra-Cotta Plant Markers.

MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.
MAW AND CO., Benthall Works, Broseley.

Under the Patronage of the Queen.

J. SMITH'S IMPERISHABLE STRATFORD LABELS.



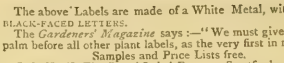
The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price Lists free.

J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; King's Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s*. per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.

See Addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

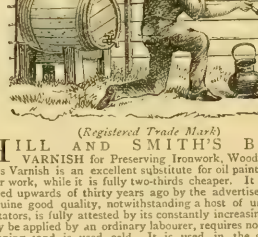
KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.

A liberal Discount to the Trade.

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)

HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

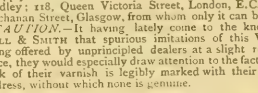
Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.

"*The Kyles, Alderley Edge, Manchester.*—Messrs. Hill & Smith.—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted.—Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley: 118, Queen Victoria Street, London, E.C.: and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.



WOOD TRAINING STICKS and TALLIES, commended by Royal Horticultural Society; BAMBOO CANES, RAFFIA for tying, VIRGIN CORK, ARCHANGEL and other MATS, PACKING MATS, &c.

Wholesale prices on application to

C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

B. S. WILLIAMS'

NEW AND CHOICE

FLOWER SEEDS FOR 1878,

Post Free.

	Per packet—s.	d.
AURICULA, finest show varieties ...	1	6
,, Alpine, finest mixed	1	0
BEGONIA HYBRIDA, finest mixed ...	2	6



CALCEOLARIA, Williams' Superb Strain, per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice Strain .. per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

SOLANUM HYBRIDUM, "Empress" (New) .. .. per packet 2 6

ILLUSTRATED GENERAL, AND ALSO

NEW PLANT CATALOGUES,

Now ready, post-free to all applicants.

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

DENDROBIUM SUPERBIENS.

MR. WILLIAM BULL,

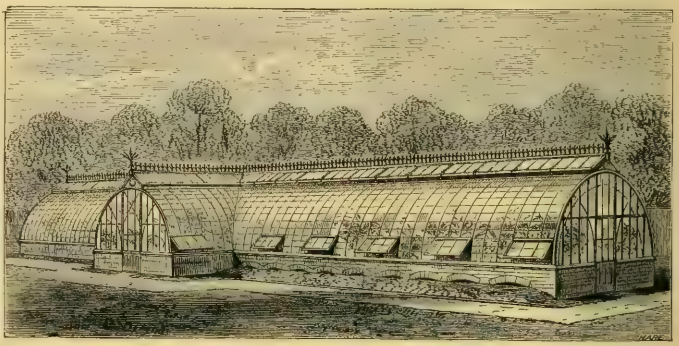
Having received an Importation from Torres Straits of this new and handsome DENDROBIUM, is now sending out good plants at Three and Four Guineas each.

An inspection of these is invited, as of many thousands of other choice ORCHIDS, which can be supplied at moderate prices, having been received from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago.

ESTABLISHMENT FOR NEW AND RARE PLANTS,
KING'S ROAD, CHELSEA, LONDON, S.W.

W. H. LASCELLES,

HORTICULTURAL BUILDER,
121, BUNHILL ROW, LONDON, E.C.



RANGE of PATENT BENT WOOD CURVED VINERIES, PLANT HOUSES, &c., recently erected at Croydon.

These Houses are light, strong, durable, and of elegant appearance. Can be made as cheaply as a plain, straight House, and no Bent Glass need be used.

Illustrated Sheets sent, post-free, on application, and Estimates given without charge.

COOL ODONTOGLOSSUMS.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company of Colchester to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 15, at half-past 12 o'Clock precisely, a splendid consignment of ODONTOGLOSSUMS and other ORCHIDS, from the highest mountain ranges of Colombia, comprising fine healthy pieces of O. crispum, Pescatorei, Phalænopsis triumphans, læve, hastilabium, and many other fine things.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

PAXTON'S CALENDAR.

Now Ready, a new and thoroughly Revised Edition of the

COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

GREAT REDUCTION IN THE PRICE OF

GREEN'S PATENT "SILENS MESSOR,"

Or Noiseless Lawn-mowing, Rolling, and Collecting Machines for 1878.

The Winner of every Prize in all cases of competition.



To cut 6 inches .. .. .. Price	£1	15 0
Can be worked by a Lady.		
To cut 8 inches .. .. .. ,,	2	10 0
Can be worked by a Lady.		
To cut 10 inches .. .. .. ,,	3	10 0
Can be worked by a strong Youth.		
To cut 12 inches .. .. .. ,,	4	10 0
Can be worked by a Man.		
To cut 14 inches .. .. .. ,,	5	10 0
Can be worked by a Man.		
To cut 16 inches .. .. .. ,,	6	10 0
This can be worked by one Man on an even lawn.		
To cut 18 inches .. .. .. ,,	7	10 0
Can be worked by Man and Boy.		
To cut 20 inches .. .. .. ,,	8	0 0
Can be worked by Man and Boy.		
To cut 22 inches .. .. .. ,,	8	10 0
If made stronger, suitable for Donkey, 30s. extra.		
To cut 24 inches .. .. .. ,,	9	0 0
If made stronger, suitable for Donkey, 30s. extra.		

Prices of Donkey, Pony, and Horse Machines on application.

☞ Carriage paid to all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

The superiority of our Machines over those of all other makers is universally acknowledged. They will Cut either Long or Short Grass, Bents, &c., wet or dry.

They are the simplest in construction, the easiest to work, the least liable to get out of order, make little noise when in use, and are the most durable Lawn Mowers extant.

These Advantages no other Lawn Mowers possess.

Every Lawn Mower sent out is warranted to give entire satisfaction, otherwise it may be returned at once, free of cost to the purchaser.

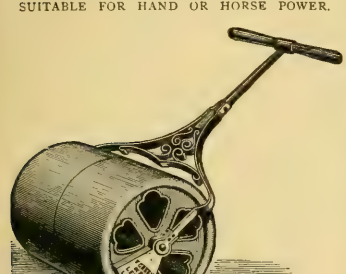
The largest stock of Mowers kept in London, and including all sizes from 6 to 48 inches, is to be seen at our London Establishment, 54 and 55, Blackfriars Road, where purchasers can select out of several hundred Machines, and have their orders executed the same day they are received.

N.B.—Those who have Lawn Mowers to repair will do well to send them either to our Leeds or London Establishment, where they will have prompt attention, as an efficient staff of Workmen is kept at both places.

GREEN'S PATENT ROLLERS

For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths.

SUITABLE FOR HAND OR HORSE POWER.



They can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or from the Manufacturers,

THOMAS GREEN & SON,

SMITHFIELD IRONWORKS, LEEDS;

And 54 and 55, BLACKFRIARS ROAD, LONDON, S.E.

*** Carriage paid to all the principal Railway Stations in the United Kingdom.

Descriptive Illustrated Price List Free on Application.

SUTTON'S VEGETABLE & FLOWER SEEDS

FOR PRESENT SOWING.

CABBAGE.



Sutton's Imperial.
The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use. Heads cone-shaped, very large, firm, and of mild flavour.
1s. per ounce.

	Per oz	s. d.
Enfield Market	..	0 8
Nonpareil	..	0 6
Early Dwarf York	..	0 6
Red Pickling	..	1 6

ONION.—New Queen.

A valuable, new, and distinct variety, being the earliest of all Onions. Sown in March it comes to maturity in July, or sown in July it is fit for use the following autumn. It is of beautiful mild flavour, and strongly recommended.
Per packet, 1s.

The following varieties, sown in July and August, will come to a very large size during the following Spring and Summer:—

	Per oz	s. d.
NEW GIANT ROCCA (the largest variety)	.. ..	1 3
LARGE EARLY RED ITALIAN	.. ..	1 3
LARGE EARLY WHITE ITALIAN	.. ..	1 3
GIANT LATE RED ITALIAN	.. ..	1 3
GIANT LATE WHITE ITALIAN	.. ..	1 3

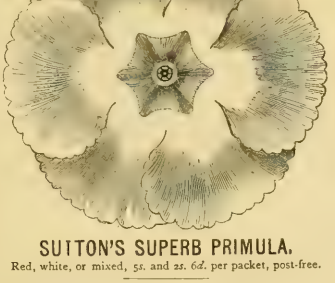
The FINEST STRAIN of CALCEOLARIA.



SUTTON'S "PERFECTION."

For beauty and form of flower, richness of colour, and habit of plant, is acknowledged to be far superior to any yet in cultivation. Price 5s. and 2s. 6d. per packet, post-free.

THE FINEST STRAIN OF PRIMULA.



SUTTON'S SUPERB PRIMULA.

Red, white, or mixed, 5s. and 2s. 6d. per packet, post-free.

SUTTON'S SUPERB CINERARIA.

Price 5s. and 2s. 6d. per packet, post-free.

SEEDS BY POST.

Vegetable Seeds up to 12 ounces in weight sent by post with a charge of 4d. for the 12 ounces, or 20s. worth free to any Railway Station in England and Wales.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.



SATURDAY, AUGUST 10, 1878.

AMERICAN NOTES.

(*Concluded from p.* 138)

THE other larger trees, making up the Canadian forest, include the White Oak, Quercus alba; the Red Oak, Quercus rubra, which extends further north than any other American species of Oak; the American Elm, Ulmus americana, a singularly beautiful tree, with spreading branches, bending over in a graceful sweep, it occasionally attaining great dimensions of trunk and stature, with a height of 70 to even 100 feet, and a girth of trunk of from 15 to 18 feet. The Slippery Elm, Ulmus fulva, occurs less frequently, and is of lower stature than the White or American Elm. The wood is said to be stronger and more durable. There is also another Elm about Haysville, locally known as the "Rock" Elm, the species of which I have not been able to identify. It is a large tree. The wood is said to be more solid than that of the others, and is used in the framework of barns and other wooden buildings. The American Beech, Fagus americana of Nuttall (Fagus ferruginea of Aiton), also occurs, but it is one of the numerous species of North American trees that approach too closely to their European representatives to be positively separable as distinct species.

Of Fraxinus two species occur—the White Ash, F. americana, and the Black Ash, F. sambucifolia; the latter grows in wet land, and is much employed for fence rails.

Amongst the other larger tree are the White Birch, Betula populifolia; Bass-wood, Tilia americana; the Button-wood, Platanus occidentalis, one of the largest deciduous trees of America; the Hop Hornbeam, or Ironwood tree, Ostrya virginica, and several species of Poplar.

Of the Hickory tribe several species occur, including the Shell-bark, Carya alba; the Butternut, Juglans cinerea; and a third species, locally known as Smooth Hickory. In the neighbourhood of London, Ontario, the Black Walnut, Juglans nigra, occurs; but not in the neighbourhood of Haysville.

The smaller trees of the forest include the American Hazel, Corylus americana; two species of Elder, Sambucus canadensis, with black berries, and Sambucus pubens, with red-fruited panicles; the June-berry, Amelanchier Botryapium; the Nanny-berry, or High-Bush Cranberry, Vaccinium corymbosum; two species of Gooseberry, several species of Rubus, including the Thimble-berry, Rubus occidentalis; the Choke Cherry, Cerasus virginiana, the wood of which is much used for furniture; the Northern Red Cherry, Prunus pennsylvanica, and one or two species of Plum.

Of Coniferæ, the White Pine, Pinus Strobus, is the largest of the north-eastern species, occasionally exceeding 200 feet in height, and very often reaching to 100 or 130 feet; about Haysville it prefers sandy land, and towers high above the level of the deciduous forest, often as a mere pole, with a few broken boughs at its summit.

The graceful Hemlock Spruce, Abies canadensis, is generally distributed intermixed with deciduous trees, and occasionally as separate patches of forest. It is said to attain a high northern range. The bark is extensively used for tanning, and the timber for the framing of all kinds

of buildings. The Balsam, Picea balsamifera, producing the Canada Balsam of commerce—a neat compact tree—occurs less frequently than the Hemlock Spruce in the neighbourhood of Haysville, but is often planted in gardens as an ornamental shrub.

"Tamarac," or "Hacmatack" (Larix americana), the American representative of the European Larch, but a smaller and more compact tree, almost invariably grows in wet, swampy places.

Cupressus thyoides, or "White Cedar," completes the list of the commoner Coniferæ. Like the Tamarac it generally grows in swamps, and its timber, from its durability, is largely used for fence rails.

The Herbaceous Flora.

The herbaceous flora of the woods about Haysville included, with many additions, nearly the whole of the species observed on Goat Island, the open glades abounding with showy flowering plants, of which Phlox divaricata, Geranium maculatum, and the chocolate and white forms of Trillium erectum, were the most prominent.

Of the Convallaria tribe, including Smilacina, six or seven species were abundant, together with the elegant Uvularia grandiflora. Saxifragaceæ were represented by Tiarella cordifolia and two or three species of Heuchera and Mitella. Erythronium americanum was most abundant in every part of the wood, in some places quite covering the ground with its pretty variegated leaves. I also observed Thalictrum dioicum, T. anemonoides, Hepatica triloba, a small white Anemone, an Asclepias the young shoots of which are used as a vegetable like Asparagus; an Impatiens not yet in flower; Aralia triphylla, and a second larger species; Antennaria plantaginifolia; Claytonia virginica, Dicentra canadensis, Waldsteinia fragarioides, Fragaria vesca, Viola canadensis, V. pubescens, and a blue Violet. The wood abounded with several Ferns common to Europe and America, together with Botrychium virginicum, Polystichum acrostichoides, Cystopteris bulbifera, Onoclea sensibilis, and Adiantum pedatum, the latter forming lovely sheets of delicate foliage. I also observed a few plants of Asplenium angustifolium on the margins of a bog. Mitchella repens, the Partridge-berry or Squaw-berry, a rutaceous plant, was abundant on the drier banks—a most attractive little plant, with persistent bright scarlet berries, creeping closely over the leaf-bed of the forest.

From Haysville I proceeded to Toronto, towards which the proportion of Pinus Strobus to the deciduous trees seems to increase, and the land, on the whole, is more neatly cultivated.

Geological History of the Lake Region.

Thence down Lake Ontario, with flat shelving shores here and there, with a low cliff of lake silt in which, as far as I could observe from the steamer, glacial boulders were absent, though inland from the lake glacial drift was everywhere visible. The "Thousand Islands," at the eastern end of the lake, seemed to consist in part of glacial drift; some of the smaller islands of granite or a hard metamorphic rock, the whole densely covered with low deciduous woods and Hemlock Spruce. The low rocks were thoroughly rounded by ice action, possibly by post-glacial floating ice passing over them, prodigious quantities of which are annually carried down the river during the spring thaw. The lake gradually narrows amidst an archipelago of little islands, and tapers imperceptibly into the great river. One of the most striking features throughout its length to Montreal is the absence of that sloping conformation of the land towards the river channel, the result of graduated sub-aërial drainage which is characteristic of most large river valleys, and the St. Lawrence seems placed inharmoniously in relation to the adjacent land contour. It has its channel between low banks, and that is all, and the observer fails to detect that graduated contour which the contributory ramifications of all ancient rivers have sculptured from their watersheds to their main channels of drainage: moreover the St. Lawrence has an indecisive course, here splitting itself up against trifling obstacles into numerous channels, again uniting and spreading itself out into broad shallow lakes over the land, reminding one of the behaviour of a sudden rush of storm-water over a course unprepared for it. The St. Lawrence is obviously a new river and supplies a fresh line of drainage compared with the ages of many other rivers, and its history must be viewed in relation to the origin of the great chain of lakes of which it is the outlet.

The surface levels of the lakes step gradually upwards. Ontario is 235 feet above the sea; Erie, 564 feet; Huron, 595 feet; Superior, 627 feet above the sea. But their depths have no relation to the order in which they occur from the watershed to the sea, for the bottom of Ontario nearest the sea is 365 feet below the sea level. The bottom of Erie is 462 feet above the sea level, of Huron 145 feet above the sea, and of Superior, at the inland end of the chain of lakes, 65 feet below the sea. Michigan is merely a great bay lying off from the main line of drainage. It is obvious that the present relative depths of the connected chain of lakes are inconsistent with their being merely the flooded sections of an old river valley, for the bottom of Ontario, the lake nearest the sea outflow, is 365 feet below the sea, and 600 feet below its own outflow into the St. Lawrence; the bottom of Superior, the lake furthest inland, is 65 feet below the sea, and 527 feet below the bottom of Erie, which intervenes, and no less than about 570 feet below the river-bed outlet of Erie.

A glance at the map will show how closely the watershed line environs the great lake district. The lakes receive no long rivers, and it is a mere narrow belt of land that drains into them, beyond which the drainage goes north towards Hudson's Bay, south towards the Mississippi, and east by the Ottawa.

We must set aside the view that the chain of large lakes is due to glacial excavation, for Ontario, the deepest of the lakes running east and west, is in lower latitude than Huron, the bottom of which is 510 feet above that of Ontario, and there is no high ground about Ontario from which ice could have originated as a preponderating mass, capable of excavating Ontario 600 feet deep; nor is there any such mass of *débris* anywhere to be seen about the lake as would represent such an excavation.

New York State, bordering on Ontario, abounds with small lakes, running north and south, between escars and drift ridges, evidently of glacial origin, and which have nothing in common with the direction or character of the larger lakes, which must be the result of the subsidence of the area, bounded by their environing watershed, resulting in a fresh basin of drainage towards the Atlantic, the former drainage of which was divided between the Mississippi basin, Hudson's Bay, and the Ottawa. The contour of the land surface north and south of the great lakes seems to indicate that the subsidence of the containing area was subsequent to the glacial excavation of the numerous small lakes running north and south, and it seems probable that the Niagara gorge, as well as the St. Lawrence, down to its junction with the Ottawa River, are of post-glacial origin.

Montreal.

My Canadian tour was completed at Montreal. The hill behind the city which gives it its name is a most pleasant place for a botanical ramble, commanding magnificent views over Montreal, the St. Lawrence, and far beyond. The charm of its wildness is, however, being a little impaired by its conversion into a park, with long winding drives through the woods which thickly cover it.

The principal trees are Acer saccharinum, A. rubrum, and A. spicatum, intermixed with Abies canadensis and Pinus Strobus, and amongst the herbaceous and bulbous plants I observed during a short ramble were:—

Thalictrum dioicum
Aquilegia canadensis
Actæa spicata
Erythronium americanum
Trientalis americana
Phlox canadensis
Viola cucullata
" " amœna
Uvularia sessiliflora
Trillium sp.
Smilacina racemosa
Saxifraga virginica
Arisæmum triphyllum
Hypoxis erecta
Adiantum pedatum
Verbascum Thapsus, an introduction from Europe, abundantly naturalised, and a number of Asters Solidagos, and other Compositæ not yet in flower
Cystopteris fragilis
" bulbifera
Athyrium Filix-fœmina
Onoclea sensibilis
Lastrea Thelypteris, and a thin and graceful variety of Pteris aquilina, very unlike the European form

The larger proportion of North American herbaceous plants are remarkable for their thick fleshy roots, a natural provision for their preservation during the intense summer heats; this renders them comparatively easy to import, and most of the species will survive many weeks if carefully packed.

One of the most noticeable features of the flora of North-eastern America is the small proportion of Leguminosæ and Umbelliferæ to other flowering plants as compared with the proportion in Europe. Leguminosæ in North-eastern America constitute but about 4½ per cent. of the total flora, whilst in Europe the proportion is about double. The North-eastern American Umbelliferæ constitute only about 1¾ per cent. of the flowering plants, whilst in Europe the proportion is about 4½ per cent. Compositæ form about 13 per cent. of the European flora and 11 per cent. of the flowering plants of North-eastern America; and Cruciferæ 2⅝ per cent. in America, as compared with about 4¾ per cent. in Europe. Ranunculaceæ, Labiatæ, and Scrophulariaceæ bear about the same proportion to the total flowering plants in Europe and America. The rarity of bulbous plants, both as regards the number of genera and species, is very marked, and including the whole of the Liliaceæ, Iridaceæ, and Amaryllidaceæ, they only form about 1/16 per cent. of the flowering plants, whilst in Europe these three natural orders constitute nearly 4 per cent. of the flora. Of Ferns there are about fifty-six species in North-east America, of which about twenty are common to Europe and America. *George Maw, F.L.S., Benthall Hall, near Broseley.*

New Garden Plants.

Leperiza eucrosioides, *Baker, n. sp.**

This is a well-marked second species of the Pancratioid Andine genus Leperiza of Herbert, which differs from Stenomesson and Coburgia mainly in its short perianth-tube and long perianth-segments. Only one other species is known, L. latifolia, Herbert, of which a good figure will be found *Botanical Magazine*, t. 4952. The present plant was imported from Ecuador by Messrs. E. G. Henderson & Son, and flowered by them in the winter of 1877.

Bulb ovoid, about 2 inches in diameter, with brown tunics. Leaves 1—2 developed after the flowers, petioled, oblong, acute, thin in texture, green on the face, rather glaucous on the back, with a distinct midrib and curving veins ½—⅓ inch apart. Scape terete, 12—15 inches long; umbel 3—4-flowered; bracts lanceolate; bracteoles filiform; pedicels ½—¾ inch long; flowers drooping. Ovary green, oblong-triquetrous, ⅓ inch long; perianth-tube green, campanulate, ½—¼ inch long; perianth-segments red, oblanceolate, obtuse, ¾—⅝ inch long. Stamens inserted at the throat of the perianth-tube, finally protruding ¼—⅓ inch, the filaments joined halfway up, more so on the lower side of the flower, free in the upper half, lanceolate at the base, without any teeth between them; anthers oblong, greenish yellow, ⅛ inch long. Style curved, reddish, entire, shorter than the stamens. *J. G. Baker.*

Bulbophyllum psychoon, *n. sp.*†

This is a curious little thing, coming from Assam, where Mr. Freeman picked it up accidentally. I have at hand a great mass of clustered bulbs

* *Leperiza eucrosioides*, Baker, n. sp.—Bulbo ovoideo, tunicis brunneis; foliis 1—2 post scapum productis petiolatis oblongis acutis; scapo subpedali; umbellis 3—4 floris; bracteis lanceolatis; bracteolis filiformibus; pedicellis brevibus; ovario viridi oblongo; tubo viridi campanulato; perianthi segmentis rubris oblanceolatis obtusis; staminibus exsertis, filamentis dimidio inferiori in coronam coalitis, dentibus interstamineis nullis; stylo integro staminibus breviori.

† *Bulbophyllum psychoon*, H. G. Rchb. f.—Aff B. radiato, Lindl. Pseudobulbis aggregatis oviformibus tenue multisulcatis monophyllis; folio cuneato lanceo acuto bene crasso; pedunculo exserto apice pluribracteato unifloro (hinc sine dubio

becoming finally brown, pear-shaped, and covered with numerous shallow keels and furrows, reminding me of the eggs of certain butterflies when seen through a good lens, hence the name. I have not the least doubt that the inflorescence must be an umbel, though the peduncle at hand is one-flowered. There are some empty bracts around which afforded evidence of a future umbel, the more as the old peduncles are far stronger, though their tops are broken off. If the flower is shorter than those of its kindred species, B. radiatum (Lindl.), odoratissimum (Lindl.), oligoglossum (Rchb. f.), it is yet rather like them. The colour is a very modest pellucid green. The small petals are very interesting for their toothed margin. I have to thank Mr. W. Bull for this botanical pleasure. *H. G. Rchb. f.*

TUBEROUS BEGONIAS.

Tuberous Begonias are in fashion just now, and the favour with which they are regarded is justly deserved. For a long time past they have been familiar to us as plants with fresh, elegant foliage and numerous brilliant flowers, lending themselves equally well to outdoor or indoor culture. Amongst a genus already so rich in species, adapted for culture in either hot or temperate houses, Begonia discolor, originally from China, and known in cultivation from the beginning of the century (since 1804 in England), seems able to resist the winters of Southern Europe. All of a sudden, about twenty years ago, there entered upon the scene two groups of American Begonias that, variously hybridised, have been the originators of a line of offspring as varied in foliage as in their flowers, and which rival their primitive ancestors in hardiness, brilliancy of colour, and abundance and duration of bloom. The type of the first of these groups is Begonia boliviensis, a species of the subgenus Barya, the lengthened stems of which produce scattered leaves and axillary groups of flowers with narrow sepals and petals; the second group, named Huszia by Klotsch, comprehends a sub-group of species that are remarkable for their leaves arranged in a rosette, recalling some of the beautiful Saxifrages belonging to the Megasea tribe (Saxifraga ciliata, crassifolia, &c.), and for their long stems crowned by a cyme of flowers, the sepals and petals of which are of a bright rose colour.* Such is Begonia rosæflora, J. D. Hook., a charming species that has been figured in the *Flore des Serres* (tab. 1853); such is also Begonia Veitchii, which L. Van Houtte justly called the *alter ego* of rosæflora, although its leaves, less wavy and less pale, and its flowers of a tint of red impossible to reproduce, give it, from an æsthetic point of view, quite a distinct character.

The transition between the species with a lengthened stem and those with a short, thickened stem, is afforded by Begonia Clarkei, J. D. Hook. (*Bot. Mag.*, tab. 5675), which combines with the foliar peculiarities of Barya the floral characteristics of Huszia. This apparently heterogenous combination has been further mixed by hybridisation on the one hand with Begonia Fœbelii, Alph. D.C., which has radical, heart-shaped, hairy leaves, with long petioles and close cymes of small rather bright scarlet flowers; and on the other hand with Begonia Pearcei, with velvety foliage and golden-yellow flowers. At the present time the mixed products of these species, boliviensis, Veitchii, Fœbelii, Pearcei, and others that are cultivated with such rivalry among the florists, constitute quite a legion of forms, only to be distinguished the one from the other with great difficulty—some, as in the case of × Sedeni, usurping the designation of a species, and others, more numerous, being baptised with those fantastical names which make gardeners' fortunes and are the torment of botanists. The latter would be tempted to cry out against the *embarras de richesses* if they were not forced to recognise the right of amateurs to enjoy these creatures of chance, of caprice, or of the happy combinations of skilful horticulture. All that can be done, and we will willingly do it, is to record, by drawings, the characteristics of the first parents of these unnatural connections before they are lost in the crowd of their motley descendants. The day will come perhaps in which the ancestors of Emperor, Acmé, Mont Blanc, Agate, Onyx, Emerald, Ruby, Topaz, and of certain other queens of fashion will be as rare in a pure state as are at the present day the Dahlias, with radiating capitula—from which have sprung the innumerable Dahlias of our gardens.

Happily for science the botanical plates resemble permanent galleries, in which portraits of their ancestors are preserved side by side with their history and authentic descriptions. As the various floral varieties succeed and supersede each other and become entangled in apparently the most intricate confusion, one has only to refer to the pages of the *Gardeners' Chronicle*, *Botanical Magazine*, or *Flore des Serres*, to know that Begonia Veitchii was discovered near Cuzco by the celebrated collector Pearce, that it bloomed in 1867 in the nursery of Messrs. Veitch, at Chelsea, that Dr. Hooker traced its characteristics, recognised it as being new, and dedicated it appropriately to the patrons of Mr. Pearce, he himself having received the dedication of another Begonia. One will also see that Begonia Veitchii is met with in the Andes of Peru at an elevation of 3650 to 3800 m., which is a sufficient explanation of its powers of resisting low temperatures, and gives it a good place among those hardy species which thrive well in Southern Europe, and especially on the borders of the Mediterranean. *J. E. Planchon, in "Flore des Serres,"* vol. xxii., p. 119.

HORNSBY'S PATENT HEDGE-CUTTER.

We are indebted to a correspondent of great experience for the following interesting report of what is likely to prove to be one of the most useful implements ever invented for the purposes of the hedger and forester. A new implement that attracted great attention during the late show of the Royal Agricultural Society, at Bristol, was exhibited at Stand 167, where Messrs. Hornsby & Sons, of Grantham, showed a fine collection of agricultural machines. The implement we refer to is the patent two-horse machine for cutting and trimming hedges. At the special request of the Prince of Wales, its working was explained to him, during his visit to the show-yard on the 12th July, and so impressed was His Royal Highness with its apparent usefulness, that he expressed his intention of paying a visit to Grantham to see it at active work in the field. Messrs. Hornsby for several years have paid much attention to the subject, and have been experimenting with the implement; but it was only this year that they had so perfected the machine as to enable them to show it. It has, in the course of the past two years, been thoroughly tested on hedges of all kinds, with the result of proving that it is able, cheaply and expeditiously, to accomplish what has been, hitherto, a laborious and costly operation. The machine is mounted on two road-wheels of large diameter to secure light draught. Both wheels are employed in driving the working parts, the motion being communicated by an arrangement of gearing to one of a pair of knives, similar to the knives of mowers and reapers, but larger, and of greater strength. These knives are carried by a sliding bar, projected from the side of the machine. This bar with the cutting apparatus is so arranged as to be capable of ready adjustment to suit different circumstances, the entire machine, when set for work, being under complete control of the man in charge, who rides upon a seat conveniently placed for making all necessary adjustments. The cutting apparatus can be raised to any required height, to suit high or low hedges, on the level of the ground on which the machine may be travelling. It can also be set at any required angle, to cut more or less off the hedge, and to reduce its height or alter its shape as may be desired. Both sides of the hedge may be cut from the same side, so that the machine may be kept on that side which is most convenient. The side of the hedge nearest to the machine is usually cut first, and then the bar lifted over the hedge and the angle of inclination reversed, so as to cut the other side. The top may afterwards be trimmed if required (though this is not usually necessary), by setting the cutting bar straight out from the machine, at the height the hedge is required to be left. The cutting bar being constructed on the same principle as the "Paragon" mower, swinging round the crank spindle, will work equally well on either side or at the top, and at any angle of inclination. The hedge when cut is wedge-shaped, of any desired height and width at bottom, this shape being the one most generally preferred, and found to furnish the most durable and efficient fence without occupying too much of the ground. The machine is worked by two horses, and requires only a youth to drive, with one man to manage and control the cutting. The work accomplished is about 5 miles of hedge per day, cut on both sides and at the top. Where trees, railings, or other obstructions are found in hedges, the cutting apparatus can be instantly withdrawn, and put into work again when the obstruction is passed. The machine is substantially constructed, so that hedges of two or three years' growth may be cut without fear of breakage, but where they are systematically cut they will be gone over once or twice every year. The machine exhibited was sold to the Earl of Derby, and we expect the demand for such an extremely useful and economical implement will be very great, as its merits become generally known to owners of landed property and their managers. *Journal of Forestry.*

DIANTHUSES AT CHISWICK.

Apart from the Carnation, Picotee, and Pink, and the homely Sweet William, the genus Dianthus has other members of an exceedingly attractive character, and as useful, as effective, and showy. They are the very things to grow in places where cut flowers are in large request, and they should have a place in the smallest of gardens, but they are rarely found in either. It cannot be for lack of appreciation, for no one can look on them and not admire; it must be from want of knowledge—a knowledge it is the aim of this paper partly to supply.

It is now some years since there came to us from abroad the fine Dianthus Heddewigii and its fringed petalled variety, laciniatus. Since then these charming forms have given birth to many varieties, double and single, self-coloured and chequered, and all with a dwarf growth that flowers with a freedom so profuse as to be exhausting. That all came originally from the Indian Pink (D. chinensis) there can be no doubt, and this favourite old garden type has itself been considerably improved also.

If Mr. Barron could bring up from Chiswick some of the beds of Indian Pinks he has there now in full bloom, and set them down in the Council-chamber of the Society at South Kensington on one of the meeting days, the Fellows and others would be ravished with the sweet beauty of many of the flowers. It is something that they can be seen at Chiswick. There are several beds of them, and they present a variety almost infinite as applied to flowers. One hardly knows which to admire most—the large handsomely-marked single varieties with their broad petals resplendent with brilliant colours, or the immense double forms with their full flowers. A bushel of flowers might be cut from a bed 6 feet by 3 or 4, and side-shoots are thrown up with eager activity on the part of the plant. One fails to sum up the variety of tints and hues—they are too numerous, but they range from creamy white to the rich crimson of Messrs. Carter & Co.'s new variety, Crimson Queen. This is not only fine in colour, but true to character; its special beauty is its greatest recommendation. Eastern Belle is very pretty also, with a kind of wanton sportiveness which illustrates the difficulty of fixing with certainty its charming character; but the variety it yields will be an irresistible passport to the affections of many.

If all these beautiful forms were only fragrant! But they lack this exalted charm in flowers. If some one could throw into them the scent of the Carnation and Pink, without affecting their dwarf and annual character, he would establish a claim to the gratitude of all lovers of flowers.

normaliter umbellato); sepalo impari triangulo acuminato deflexo; sepalis paribus lanceo-acuminatis ante basin gibboso gutturosis latere interno inflexis, decurvis; tepalis oblongis acutis microscopice denticulatis multo minoribus; labello crasso semisigmoideo basi erecto cordato, medio unisulcato; columna apice utrinque unidentata. Assam. Introd. dom. Bull.

* The prototype of the section or sub-genus Huszia is the splendid Begonia octopetala, which, long familiar to botanists from the descriptions of Héritier (1784-1785), has been recently introduced from Lima by M. Roezl. (See *Flore des Serres*, tab. 2056-57). It is an acaulescent species, with the features of Geranium. Amongst the caulescent forms of this group we may mention Begonia cinnabarina, Hook. (aurantiaca, Hortul.), introduced by Bridges from Bolivia to England, where it has flourished since 1848. It is one of the oldest known of the tuberous forms, and is of Bolivian origin, like most of its allies. A still more ancient tuberous form in gardens is Begonia gracilis, Kunth, a Mexican plant, of which the variety diversifolia, Alph. D.C., described by Graham in 1829, was figured under this name in the *Botanical Magazine* (tab. 2566) and in the *Flore des Serres* (tab. 1823). M. Alphonse De Candolle, considering it as belonging to Klotsch's genus Knesebeckia, placed it there, as well as Begonia Evansiana or discolor, a Chinese plant, also of a tuberous form. But it may as well be remarked that the differences between Huszia and Knesebeckia are of very little importance, inasmuch as the placentas and stigmas are alike in both, and the differences in the capsules and stamens are inconstant.



Fig. 35.—Begonia President Burelle.

The improved double and single forms of the Indian Pink are very fine likewise, and the double varieties are peculiarly adapted for cutting from. One could say with some truth that they are of a little taller growth than the forms of D. Heddewigii; that they have smaller flowers and a little taller growth, furnishing rather longer flower-stems—that was the impression left on my mind.

The value of their high floral service and radiant expressiveness is only equalled by the ease with which they are grown. At Chiswick the seeds were sown in drills in the beds in which the plants are now growing, and they are simply thinned out a little. What can be simpler? They deserve a little extra attention; they should have a rich soil, and plenty of moisture when necessary. I should like to see an attempt made to grow in slightly sunken drills, thinning out the plants to 6 inches apart in the rows, and mulching with some well decomposed manure in summer. Plants standing at this distance apart could then find ample space in which to grow; they are far too good and useful to be inconveniently crowded. Such a bed would probably become a floral sight worthy the highest admiration.

Let every flower-seed order compiled next winter include some of these Dianthuses. When once grown they will not soon be abandoned. A profuse beauty will reward the grower's care, and he will have added one more subject to the list of the flowers he may include under the head of special favourites. *R. D.*

BEGONIA PRESIDENT BURELLE.

This variety of tuberous Begonia is probably the best of those producing double flowers: at least, the flowers of this variety are the fullest and finest in shape of any which have come under our own observation. It was shown in very fine condition at the Crystal Palace Summer Show, by Messrs. Laing & Co., of the Stanstead Park Nursery, and was on that occasion awarded a First-class Certificate. It is of dwarfish habit, like Gloire de Nancy, and its large and full double flowers—the male flowers only being double—are of a rich deep crimson-red, and remarkable for their regularity and symmetry of form. Altogether it is a very showy and attractive plant, one that is calculated to arrest the eye and to command admiration, alike from its richness of colour and from the novelty of character which attaches to these double-flowered varieties—for, beautiful as they are, they are yet by no means common, a circumstance which is perhaps owing to the comparatively slow rate at which the individual varieties can be increased. Our illustration (fig. 35) was drawn from the plant shown as above referred to by Messrs. Laing & Co., who have made a speciality of the culture of this race of Begonias, some of which it may be noted are admirably adapted for greenhouse basket plants.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1878.]

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN	Under Under and small	Average Under, but seem good Under average	Average Average; good Under average	. . . Not grown Not grown	Under Almost a failure Much under average	Under Under and small Much under average	Average Average and good Over average	Average A good average Over average	.... Very few Not grown	George Donaldson Keith Hall R. Farquhar, Fyvie Castle Gardens John Forrest, Haddo House
ARGYLL	Under average	Average	Over average	None outside	Bad	Average	very good Very good, excepting Gooseberries	extra good Very good	Under average	John Caie, Inverary Gardens
AYR	....	Under; good	Under; good	....	Under; good	Under; good	Over, except Gooseberries	Over; very good	. .	A. Brown, Kilmorey, Lochgilphead
BANFF	Under	Average Over	Under Average	....	Under Under	Under Average	Over; very good Over	Over; very good Under; good	....	John Gray, Eglinton Castle, Irvine John Webster, Gordon Castle
BERWICK	Average crop .... Under average; good	Some varieties very good Under Under average; good	Morellos good; others average Under Average; good	Good; average crop None out-of-doors Under average; good	Bad; few exceptions Under Almost none; not good	Standards good; on wall bad .... Under average; good	Very good Under Average; not good	in district Very good Average Above average; good	.... Under an average	George Berry, Cullen House Gardens Peter Loney, Marchmont House, Dunse Alexander Scott, Ladykirk House
CAITHNESS	Average	Average	Average	....	Under; bad	Average	Average; good	Average; good	Under; bad	John Sutherland, Langwell
CLACKMANNAN	Under; good	Under; good	Over; good	Under; bad	Average; good	Under; bad	Very good	Over; very good	Very few grown	Thomas Ormiston, The Gardens, Alloa Park
CROMARTY	Under average; good	Average; good	Under average	....	Under average	Average; early good	Average; early	Average; early	....	James Laing, New Tarbat, Parkhill
DUMFRIES	Under; bad	Average; good	Average; good	Average; good	Under; good	Under; good	Average; good	Average; very good	Under; good	Robert Dickson, The Gardens, Arkleton, Langholm
DUMBARTON	None grown None grown here	Failure Bad, except Orleans	Average; good Very good	None grown outdoors None grown here	Failure Bad	Failure Bad, except on walls	Average; very good Over; except Black Currants	Over; very good Over	None grown None grown	James Smart, The Gardens, Raehills James Mitchell, Camis Eskean, Helensburgh
EAST LOTHIAN	Under Very scarce	Under Fair crop	Average Fair crop	Under None grown	Under Very few	Under Very few	Over; good Good; except of Gooseberries	Over; very good Large crop	. . ....	Alex. Scott, Auchendennan Alex. Shearer, Yester Garden, Haddington
FIFE	Average; good Under	Over; very good Average	Average; good Under	....	Under; good Under	Under; very good Under	Over; good Average; good	Over; very good Over; very good	.... . .	R. P. Brotherston, Tyningham, Preston Kirk G. Ramsey, Fordell
FORFAR	. . Under average	Very poor Average	Good, but small Under average	None outside Under average	Almost a failure Under average	Very poor Under average	A good average Under average	Abundant Over average; good	None grown Under average	Wm. Henderson, Balbirnie Gardens, Markinch George Johnston, Glamis Castle
KINCARDINE	None grown Very fine grown outside	Total failure Under average	Total failure Under average	None grown Not grown outside	Total failure Very bad	A failure Very bad	Half a crop Under average	Late varieties Very good	None grown . .	James Mitchell, Panmure Gardens, Carnoustie George Wighton, Fasque
KINROSS	. .	Under average; good	Under average; good	....	Under average	Under average	Under average; good	Over average very good	....	John Fortune, Blair Adam
LANARK	Under average; few grown	On walls full standards under	A full average	On walls a failure	Under average	Under average	Under average	Above average, and fine	Not grown	Andrew Turnbull, Bothwell Castle
MIDLOTHIAN	Much under average; good	Full average; very good	Thin; Morellos average; good	Almost none	Barely average; good	Average; good	Very abundant; very good	Very heavy crop of fine quality	Scarce	Malcolm Dunn, Dalkeith Gardens
MORAY	Good	Very good	Under	Under	Under	Average	Good	Good	....	D. Cunningham, Daraaway Castle, Forres
NAIRN	Average	Average	Under	. .	Under	Under; very poor	Average; good	Average; good	None grown	James Maitland, Cawdor Castle
ORKNEY	Failure	Scarcely any	Very good	Very good under glass	Average	Moderate	Abundant; very good	Average; good	....	Thomas McDonald, Balfour Castle Gardens
PERTH	Very bad Scarce crop	Under average Heavy crop	Under average Under average	Bad outside; good indoors All under glass	Very bad; almost none Failure	Under average Very thin	Average, and good Average crop	Average good Good crop	Very few Very few	D. Doig, The Gardens, Rossie Priory. John Browning, Dupplin Castle Gardens
RENFREW	. . . .	Under Under	Average Under	None outside . .	Total failure Under	Under Under	Average except Rasps Average	Extra abundant and fine Average; very good	....	George Croucher, Ochtertyre, Crieff John Methven, Blythswood
ROSS	. .	Under; good	Under; good	Under	Under	Under	Average; good	Average; good	.	Robert Massie, The Gardens, Ardross Castle
ROXBURGH	Under average; good	Average; good	Under; bad	....	Under; bad	Under; bad	Average; good	Over average very good	....	H. Knight, Floors, Kelso
SUTHERLAND	....	A failure, except Damsons	Average	. .	Under average	Crop almost nil	Average; very good	Average very good	Average	D. Melville, Dunrobin Castle Gardens
STIRLING	Under	Under	Average	Average	Under	Average	Average	Over	. .	M. Fitzgerald, Dunmore Gardens
WIGTOWN	Not grown	Under	Over; good	Not grown	Average; good	Under; not good	Over; very good	Over; very good	Not grown	Archibald Fowler, Castle Kennedy
NORTHERN COUNTIES.										
NORTHUMBERLAND	Under average; good	Average; good	Under average	Under average; good	Scarcely any; late sorts best	Average; good	Average	Over average and good	A few in wood	Alex. Ingram, Alnwick Castle Gardens
	....	Under	Average	Over	Under	Under	Average	Over	Under	William Turner, Capheaton, Newcastle-on-Tyne
CUMBERLAND	Under	Average; very good	Under; bad	Under; bad	Under; bad	Average; good	Average; very good	Average; very good	Under; bad	F. Blackwood, The Gardens, Eden Hall, Penrith
WESTMORELAND	Very few	Good	Average crop	None grown outside	Under average	Average	Plentiful	Average	None grown	William Shand, Lowther, Penrith
	None grown	Average	Under average	Under average; good under glass	Bad	A fair average, especially of Marie Louise	Bad, especially Gooseberries and Currants	Above the average	Under average	Robert Craig, Levens Hall, Milnthorpe
DURHAM	Under	Average; good	Average	Under	Under	Average; good	Over; good	Over; good	....	William Yule, Pierremont, Darlington
	Bad	Bad	Good	Not grown out-of-doors	Under	Under	Good	Good	Not grown	R. Draper, The Gardens, Seaham Hall
YORKSHIRE	Under average	Under average	Under average	Under average	Under average; bad	Under average	Average; good	Under average	Under average	Michael Saul, Stourton, Knaresborough
	Rather under average	Good	Preserving good; others moderate	Peaches good; no Nectarines grown outside	Bad	Some kinds good	Very good	Very good	Bad	William Culverwell, Thorpe Perrow, Bedale
	Under	Under	Average	Average	Under	Under	Over	Over	Under	[House, Leeds James Fowler, Harewood
	Under average; good quality	Average; good	Under; bad	Under; good	Under; bad	Under; good	Under; good	Average; good	Filberts under; Walnuts good, average	Robert C. Kingston, Brantingham Thorpe, Brough
	Under average	Average	Under average	Under average	Under average	Average	Average	Average; good	Under average	Henry J. Clayton, Grimston Park Gardens, Tadcaster
	....	....	Under	Average	Average	Under	Average; good	Over; very good	Under	John Young, Wentworth, Rotherham
	Bad	Under	Under	Bad	. . .	....	Average	Under	....	W. Lewin, Aske Gardens
	Average; very good	Under an average	Average; good and clean	Quite an average	Average; good	Under an average	A fair average and good	Underaverage; very good	About an average	J. McIndoe, Hutton Hall, Guisborough
	Under	Bad	Average	Under	Average	Average	Under	Average	....	William Hurst, Fryston Gardens, Ferry Bridge

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
YORKSHIRE.	Under average	Average	Under	None grown outside	Average	Under	Over average	Over average	None grown	W. Stephens, Endcliffe Hall, Sheffield
LANCASHIRE	None grown	Under; bad	Very few	Do not succeed here	Under	Very few	A good average	Over; very good	None grown	Andrew Jamieson, The Gardens, Haigh Hall
	Under	Under	Average; very good	Under	Average, good	Average; very good	Average; very good	Over; very good	....	W. Hinds, Otterspool
	None grown outside	Fair crop on walls	About half average on walls	None grown outside	Entire failure	Good on south walls	Currants heavy; Gooseberries fair	About half a crop	....	Henry Lindsey, Huntroyde Park, Padiham
MIDLAND COUNTIES.										
CHESHIRE	Under	Over	Under	Under	Under	Under	Under, except Raspberries	Over; very good	Under	Wm. Whitaker, Crewe Hall
	....	Average	Average	....	Average; good	Under	Average;	Over; very good	....	R. Mackellar, Abney Hall, Cheadle
	Partial crop	Above an average	Grand crop	Trees young; not bearing	Very partial crop	A few, and small	A good average	Abundant and fine	Very thin	W. Muir, Oulton Park, Tarporley
	Under; good	Over; good	Average; good	....	Under; good	Average; good	Under; good	Over; very good	Average; good	Thos. Selwood, Eaton Hall, Chester
	Very few; bad	Under	Average	Under	Under	Average	Very good	Over	....	Alfred J. Grant, Withington Hall, Chelford
DERBYSHIRE	None outdoors	Bad	Good	None outdoors	One third of a crop	Half a crop	Abundant	Fine crop	But few	Thos. Speed, The Gardens, Chatsworth
	Average	Over	Average; good	Under	Under	Under	Over; good	Over; good	Under	J. H. Goodacre, Elvaston Castle
	Average, and good	Under	Average	Under	Under	Average	Over; very fine	Over; good	Average	James W. Bayne, Kingston Hall
	Very few	Almost a failure	Full crop	Half crop	Half crop	Half crop	Full crop	Full crop	....	W. Brown, Bretby Gardens, Burton-on-Trent
NOTTINGHAM	Full crop on glass-protected walls	Victorias full, others under average	Morellas good other sorts very thin	Excellent on glass-covered walls	Under average	Under average	Abundant crops	Above average	None grown; an average crop in the woods	William Tillery, Welbeck Abbey, Worksop
	Under average	About an average	Full crop; good	Under average; bad	Under average; trees looking sickly	Under average; trees healthy	Under; Currants plentiful	Good average	....	Henry Gadd, The Gardens, Wollaton Hall
	Half crop	Under	Very good	Under	Average	Under	Very good	Very good	Under	A. Henderson, Thoresby
	Under average	Over average	Average	Under	Average	Average	Over; very good	Over; very good	Average	John Edmonds, The Gardens, Bestwood Lodge
SALOP	Under average; bad	Average; good	Average very good	Average; fruit promising	Under average; good	Average; good	Under average; good	Average; good	Under average	A. S. Kemp, Haughton, Shifnal
	Under average	Over on walls under on standards	Average	Average	Under average	Under average	Average except Gooseberries	Average; good	Under average	George Pearson, Attingham Gardens, near Shrewsbury
	Under average; good	Over average; very good	Average; very good	Under average; very good	Under average; good	Under average; good	Over average; very good	Over average; very good	Walnuts under; Filberts over	James Louden, The Quinta, Chirk
	Under	Average	Good	Under	Half crop	Half crop	Plentiful	Very fine	Very scarce	W. Pratt, Hawkstone Gardens, Shrewsbury
STAFFORD	Bad	Fair	Very good	Bad	Fair	Average	Very good	Very good	Good	T. Bannerman, Blithfield, Rugeley
	Under; good	Under	Average	....	Under	Under	Average	Very good	Average	O. Thomas, Drayton Manor Gardens, Tamworth
	Good	Abundant	Good	Rather under average	Average	Under average	Plenty	Plentiful, but small	Plenty	T. Rabone, Alton Towers (verhampton
	Under	Average	Under	Under	Under	Under	Average	Average	Average	E. Simpson, Wrottesley, Wol-
	Under; bad	Under; good	Over average; very good	Under	Under; bad	Under	Average; good	Average; very good	Under average	W. Bennett, Rangemore, Burton-on-Trent
LEICESTER	Average; good	Over average	Over average; good	Average	Under average	Under average	Average	Over average	Under average	William Ingram, Belvoir Castle Gardens
	Under	Average	Over; very good	Over	Under	Under	All over average but Gooseberries	Over; good	Under	M. Henderson, Cole Orton Gardens
	Average; good	Over	Under	Over; good	Average	Average	Over; good	Over; good	....	H. David, Gopsall, Atherstone
	Under average	Average	Average	....	Under average	Under average	Average	Average	....	John Kitley, Wanlip Hall
RUTLAND	Under average, very good	Under; bad	Average; good	Under	Under; bad	Under	Average; good	Over; very good	Under	John Grey, Normanton Park
WARWICK	Very scarce	Thin	Thin	Thin	Thin	Thin	Plentiful	Plentiful	Plentiful	Wm. Miller, Combe Abbey
	Under; good	Over; good	Under; good	Average; good	Under; good	Under; good	Average; good	Over; very good	Average; good	Wm. Gardiner, Eatington Park, Stratford-on-Avon
	Under	Average	Average	Under	Under	Under	Average, except Gooseberries	Average; good	Under	Daniel Judd, Warwick Castle
NORTHAMPTON	Half a crop	Good crop	None, except Morellos	First-class crop	Heavy crop	Very thin; queer	First-rate	First-rate	None whatever	R. Gilbert, Burghley
	Under; good	Average; good	Failure	Almost failure	Under; good	Average; good	Average; good	Over; very good	Under	J. Trigger, Milton Gardens, Peterborough
	Under	Average	Under	Under	Under	Under	Under; good	Average; good	Under	George Beech, Castle Ashby
BEDS.....	Under average	Average	Dessert under; Morellos above	....	Under	Under	Average	Above average; good	Under	A. McKay, Woburn Abbey
	Under average; good	Over; except Green Gages	Average; good	Under average	Under average; bad	Under average; bad	Gooseberries under; Currants average	Average; good	Under average	J. Ford, Wrest Park
	Under average	Under	Average; good	Under; thin outdoors	Under; bad	Under average	Average; except Gooseberries	Average; good	Under average; Walnuts very scarce	Charles Turner, Cranfield Court, Newport Pagnell
OXFORD.....	Under	Over average; good	Over average; good	Under	Under	Under	Under; good	Average	Under	Isaac Watson, Nuneham Park Gardens
	....	Over average; very good	None	None out-of-doors	Under average	Under average	Average	Over average; good	Under average	John Greenshields, Sarsden House, Chipping Norton
	Much under	Over; good	Average; good	Under; bad; good under glass	Under; bad	Under; bad	Average; good	Over; very good	Under	William Crump, Blenheim Gardens
	Average	On walls average	Average	Under	Under	Under	Over; except Gooseberries	Over; very good	Not much grown	William Finlay, Wroxton Abbey, Banbury
BUCKS.....	Over average; very good	Average; very good	Under, excepting Morellos; good	Average; good	Average, good	Under average; good	Average, excepting Gooseberries; very good	Over average; very good	Under average	G. T. Miles, Wycombe Abbey
	Under A failure	Average Moderate crop of some varieties	Average Moderate	Average Failure	Under Half a crop	Under Half a crop	Very good Good crop	Very good Very heavy crop and very fine	Under Very few	Philip Frost, Dropmore
										J. Smith, Mentmore, Leighton Buzzard
HERTS.....	Under	Over; good	Average	Over; good	Under	Under	Over, except Gooseberries	Over; good	Under	Richard Ruffett, Panshanger
	Over average on protected trees	Over average on walls	Average; very good	Under average	Under average	Under average; good	Average	Over average; very good	Under average; good	George Sage, Ashridge Gardens
	Over average; very good	Over average; good	Average	Average; very good	Under average; bad	Under average; bad	Average	Over average	Under average	J. C. Mundell, Moor Park Gardens, Rickmansworth
EASTERN COUNTIES										
LINCOLN	Average	Over average	Over average	None outside	Average	Under average	Over average	Much over average	Average	Isaac Dell, Stoke Rochford, Grantham
	Fair, where well protected	A poor crop	A poor crop	A fair average	Very poor crop	Very poor crop	A fair average	An extraordinary crop	A poor crop	David Lumsden, Bloxham Hall, Sleaford

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
EASTERN COUNTIES.										
LINCOLN	Not more than half a crop	Good on walls, light on standards	Average; trees injured by wet spring	Good, but injured by spring mildew	Not more than half a crop	About an average	Average crop of most kinds	Good crop, but soon over	Walnuts light; Cobs and Filberts under	George B. Tillyard, Brocklesby Park, Ulceby
NORFOLK	A very poor crop	An abundant crop	Fair crop	Some places very fair crops	An even crop generally	Scarce	Abundant and good	Very good	Plentiful	Thos. Wynne, Wroxham Hall Gardens, Norwich
	Much under average	Under average	Under average	Under average	Under average	Below average	Under average; bad	Average	Below average	John Wighton, Cossey Park, Norwich
	Under average; good	Over average; good	Over average; very good	Under average; very bad	Under average; good	Under average; good	Under average; good	Over average; very good	Under average; good	William Bishop, Bylaugh Park, East Dereham
	A failure	Abundant crop	Rather poor; Morellos good	Very poor	Very poor	Under average	Light	Good	....	C. Penny, Sandringham
SUFFOLK	A failure	Under average	Under average	Under average	Under average	Under average	Average	Under average; good	Walnuts under; Filberts average	Thomas Blair, Shrubland Park
	Under; good	Average; good	Under; bad	Under; good	Under; good	Under; bad	Average here; under in the district	Average; good	Under	D. T. Fish, Hardwicke House, Bury St. Edmonds
	Under	Average; bad	Under	Under	Under	Under	Under	Average; good	Average	J. Sheppard, Woolverstone Park
	Under average; good	Over average on wall; good	Morellos over average; good	Average where protected	Under average	Plentiful on walls only	Abundant, except Gooseberries	Over average; very good	An average crop	J. Mill, The Gardens, Rendlesham Hall
ESSEX	Fine crop of splendid fruit	Poor on standards; heavy on walls	A good crop, Morellos especially	Good; trees making too much wood	Irregular, and poor in quality	Poor crop	Abundant and fine	Abundant and very fine	Scarcely medium	William Earley, Valentines, Ilford
	Under	Average	Very bad	Average	Average	Under	Average	Average	....	W. Bones, Havering Park, Romford
	Below average	Average; good	Under, except Morellos; good	Under	Under	Under	Under	Over average; good	Under	J. Bryan, Audley End Gardens, Saffron Walden
	Under	Average	Average	Under	Average	Average	Average; except Gooseberries	Over; very good	Over	Wm. Smith, Birch Hall, Colchester
SOUTHERN COUNTIES.										
BERKS	Very good	Over average	Over average	Very good	Average	Under average	Good average	Average, but season short	Walnuts an average; Filberts thin	T. Jones, Royal Gardens, Windsor
	Average; good	Over; very good	Average; good	Under; bad	Under	Average	Average; very good	Average; very good	Under	Alexander Galt, Aldermaston Court
	Under	Average	Average; good	Under	Under	Under	Average; very good	Over; very good	Under	Charles Ross, Welford Park, Newbury
	Under; bad	Average; good	Average	Average; fair	....	Under	Average; good	Very good	Under	James Tegg, Bearwood
	Under average	Average	Average; good	Under average	Under average	Under average	Plentiful	Plentiful	Very few	Joshua Atkins, Lockinge Gardens, Wantage
MIDDLESEX	Average	Over on standards	Average on standards	Under	Average; in places over	Under; scarce	Over, except Gooseberries	Average	.. .	Charles Lee, Croxby House, Hounslow
	Average and good	Under average; good	Average; good	Average; good	Under average	Much under average	Average	Over average	None grown	John Woodbridge, Syon Gardens, Brentford.
	Average; good	Under	Under	Average	Under	Under	Under	Average	Under	R. Henderson, Fulham Palace
	Average; good	Over average	Under average; good	Average	Under average	Under average	All average except Gooseberries	Over average; very good	....	T. Baines, Southgate
	Under average	Under average	Failure	Under average	Under average	Under average	Under, except black Currants and Raspberries	Abundant and good	Under average	T. P., Stanmore, Middlesex
	Average	Good; over	Good; average	Average	Over; good	Under	Over; very good	Over; very good	....	G. Ramsay, Cambridge House, Twickenham
	Under average	Under average	....	Good	Under average	Bad	Poor	Good	Good	A. F. Barron, R. H. S., Chiswick
SURREY	Thin	Some kinds good	Thin	Thin	Plenty	Thin	Plentiful, except Gooseberries	Average	Very few	James Ollerhead, Wimbledon House
	Below average	Heavy crop	Thin	Plentiful and good	Thin crop	Half crop	Plentiful and fine	Good average crop	Partial; Walnuts very few	W. Kemp, Albury Park, Guildford
	Over; very good quality	Over; very good	Over; very good	Under; good	Average good	Under; very good	Average, except Gooseberries; good	Under; very good	Under	J. Burnett, The Deepdene, Dorking
	Good average	Heavy crop on some sorts	Heavy on Morellos; dessert sorts a failure	Splendid crop trees in good health	Fair average	Scarcely any except on early sorts	Very abundant and good	Heavy crop, but season very short	Scarcely any	W. Denning, The Gardens, Coombe Lane, Kingston-on-Thames
	Average	Over average; good	Over average; very good	Average; good	Over average good	Very scarce; under	Plentiful, except Gooseberries	Plentiful, but poor flavour	Walnuts average, Nuts scarce	J. Child, Garbrand Hall, Ewell
	Under average	Average	Over average; good	Under average	Under average	Under average	Goo-eberries over; Currants under	Over average very good	Under average	Alfred Evans, Lythe Hill, Haslemere
	Under average	Average; good	Average; good	Under average; good	Under average; good	Average; good	Average; good	Over average, very good	Average; good	Fred. Corbould, Tandridge Court
KENT	Very much under average; good	Over average; very good	Average; very good	Average; very good	Average; good	Very much under average; good	Under average; good	Average; very good	Under average	John Cox, Redleaf Gardens, Penshurst
	Under average; very good	Over average; good	Under average; very good	Average; good	Average; good	Under average; good	Over average, except Gooseberries	Over average; very good	....	R. Gray, Chevening, Sevenoaks
	None grown	Under average	Average	Much under average	Much under average	Under	Under, except Currants and Raspberries	Average	Rather over average	Henry Cannell, Swanley
	Under average	Average	Under average	On south wall average	Under average	Under average	Good, except Gooseberries	Good	Under average	C. Haycock, Barham Court, Maidstone
	Under average	Under average	Under average	Under average	Under average	Under average	Average, except Gooseberries	Average	Under average	Lewis A. Killick, Mount Pleasant, Langley
	Bad	Average	Average	Good	Under	Bad	Under	Bad	Under	F. Deuxberry, The Gardens, Cobham Hall
	Under; bad	Over; good	Under; good	Under	Average	Average	Average; good	Average; good	Average; good	H. Russell, Torry Hill, Sittingbourne
	Under average	Over average; very good	Under average	Under average	Under average	Under average	Currants average; Gooseberries under	Full average and good	Rather under average	J. Hossacks, Bitrons
SUSSEX	Abundant; good	Average	Good	Abundant and good	Very thin in places	Average	Good, except Gooseberries	Abundant	Very thin	John Wilson, Castle Gardens, Arundel
	Very scarce	A full crop	Excellent crops	Not an average	Average of some kinds	Under average	Over average; good	Average	Average	Joseph Rust, Eridge Castle, Tunbridge Wells
	Bad	Under average	Good	Bad outdoors	Average	Under average	Very good	Very good	Under average	Sidney Ford, Leonardslee, Horsham
	Average; good	Over average; good	Under average; good	Over average; good	Nearly average; good	Under average; good	Over average; very good	Over average; very good	Average; good	P. Rutland, Goodwood Park
	Average; good	Average; good	Average; good	Average; good	Under average; bad	Under average; bad	Average; good	Over average; very good	Under average	J. Vickery, Wood End, Chichester
	Under average	Average	Average; good	Over average	Under average	Under average	Average good	Under average; good	Average	H. Burgoine, The Abbey Garden, Battle
	Thin on open walls; good under glass coping	Over average on walls; thin on standards.	Heavy crops, and good in quality	Abundant on walls with glass coping	A fair average in this district	A thin crop in most places	Abundant and good except Gooseberries	Plentiful and good	Thin; scarcely any Walnuts	Geo. Brewse, the Gardens, Petworth Park
HANTS	Over average	Average	Average	Over average	Under average	Under average	Over average	Over average	Under average	W. Wildsmith, Heckfield, Winchfield

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
HANTS	Under average; good	Average; good	Under average; good	Under average; bad	Under average; good	Under average; good	Average, except Gooseberries	Over average; very good	Under average	James Taverner, Woolmer Lodge, near Liphook
	Very good	Average crop	Under, except of Morellos	Very good	Not an average crop	Not an average crop	Abundant crop	Very good	Wood-nuts scarce; Walnuts partial	Geo. Jones, Mottisfont Abbey, Romsey
WILTS	Very few	Good crop	Good crop	....	....	Average	Very good	Very good	Few	William Phipps, Bowood Gardens, Calne
	Under	Average; good	Average; good	Under	Under	Under	Average; good	Average; good	Under	Wm. Taylor, Longleat, Warminster
	Over average; very good	Under average	Under average; good	Over average; very good	Under average	Under average	Over average; very good	Over average, very good	Under average	H. W. Ward, Longford Castle, Salisbury
	Under	Average; good	Average; good	Under; bad	Under; bad	Under	Over; good	Over; very good	Under; good	Wm. Fraser, Charlton Park, Malmesbury
DORSET	....	Good	Bad	Sprinkling	Late; good	Not good	Abundant	Good	....	W. F. Radclyffe, Okeford-Fitzpaine
	Under	Under	Under, and small	Average	Under	Under	Average, and good	Average, but small	Under	Henry Munro, Clevelands, Lyme Regis
	Under; good	Under; bad	Average; good	Under; good	Under; bad	Under; bad	Over; good	Over; very good	Under	W. G. Pragnell, Sherborne Castle
WESTERN COUNTIES.										
HEREFORD	Average; good	Average; good	Average; good	Average; good	Under average	Under average	Average; good	Average; good	Under average	Alfred Bye, Hampton Court, Leominster
	Under average; good	Half crop; good	Kentish good; Morello half a crop	Under average; quality good	Half crop; quality good	Under average; quality good	Abundant, and very good	Abundant, and very good	Abundant	William Ward, The Gardens, Stoke Edith Park
	Under	Average	Under	Average	Under	Under	Average	Over; very good	Under	N. Fuller, Downton Castle Gardens
WORCESTER	Variable; good in places	Abundant	Moderate; Morellos good	Fine here; not general	Very short in orchards	Moderate crop here	Moderate crop	Very good, but soon over	Light; Walnuts more plentiful	William Cox, Madresfield Court, Great Malvern
	Bad	Under	Under; bad quality	Under; good	Under	Under	Average, except Gooseberries	Average; bad	Very bad	G. Westland, Witley Court, Stourport
	Poor, except under glass copings	Very good all around us	Dessert sorts fair; Morellos over	Very few	Plentiful and good	Very good	Under, except Currants; good	Most excellent	Fair crop	John Gough, Westwood Park Gardens, Droitwich
	Under; very good	Under; good	Average; good	Under; bad	Under; very good	Under; good	Average; very good	Average; good	Under; very good	George Helman, The Gardens, Crown East Court
GLOUCESTER	Under; good	Over; very good	Over; good	Average; good	Much under	Much under	Much under; good	Over; very good	Very much under	Thomas Shingles, The Gardens, Tortworth
	Under average; good	Under average; bad	Under average; bad	Under average; good	Under average; bad	Under average; bad	Average; good	Average; good	Few grown	W. J. Simpson, Kingscote Park, Wotton-under-Edge
	Under average	Average	Average	Under average	Under average	Average on walls	Average	Over average; very good	Under average	William Nash, Badminton
SOMERSET	Under average	Under average	Under average	Average	Under average	Under average	Average	Average	Under average	John Austen, Ashton Court, Bristol
	Average	Bad	....	Good	Bad	Half a crop	Very good	Very good	Bad	E. Miller, Old Sneed Park, Bristol
	Under	Average	Over; good	Under; not very good	Average	Under	Under; especially Gooseberries	Over; very good	Average	William Hallett, Cossington Farm, Bridgewater
	Under average	Average	Under average	Average	Under average	Average	Currants over; Gooseberries under	Average; good	Scarcely any	T. Foote, Clevedon Court
	Under; bad	Average on walls; good	Average; good	Under; bad	Under; good	Average; good	Gooseberries average; others under	Average; good	Under	J. C. Elworthy, Nettlecombe Gardens
DEVON	Over; good	Under	Almost a failure	Average; good	Under	Under	Over; good	Average	Under	Alexander Ayson, Oxton Gardens, Kenton
	Average	Under average	Under average	Average	Almost a failure	Under average	Good	Good	Walnuts a failure; Nuts under	Alfred George, Bicton Garden, Budleigh Salterton
	Abundant	Scarce	Very good crop	Abundant; trees healthy	Moderate	Fair on walls	An average	Fine; heavy crops	Filberts plentiful; Walnuts scarce	John Garland, Killerton, Exeter
CORNWALL	....	Under average	Under average	Average; good prospect	Much under average	Under average	Good average	Abundant; good	Under	Henry Mills, Enys, Penryn
	....	Under; good	Under; good	Average; good	Under; bad	Under; bad	Average; good	Average; good	Under	W. N. Carne, Rosemundy House, St. Agnes
WALES.										
ANGLESEY	Under	Under	Under	Average	Average	Average	Average; good	Over average; good	Average	Robert Webster, Glyn Garth
	Not grown	Not an average crop	Morellos average; good	Not grown	Under; good	Under; good	Average; good	Over; very good	Not grown	J. Ellam, Bodorgan
BRECON	Average	Good	Average	Average	Under	Under	Good	Under	Bad	Frederick J. Ireland, Glanusk Park
CARDIGAN	....	Good	Good	Bad	Under average	Bad	Very good	Very good	Very scarce	James Knight, Bronwydd, Llandyssil
CARMARTHEN	....	Average; good	....	Under average; good	Under; bad	Under average; bad	All average, except Gooseberries	Average: very good, but late	....	J. Tscehurst, The Gardens, Dynevor Castle
CARNARVON	....	Average	Average	....	Average	Average	Over	Over	....	Allan Calder, Vaynol Park
GLAMORGAN	Bad	Average	Average	Bad	Average	Bad	Currants good, Gooseberries under	Very good	Average	Henry Battram, Cyfarthfa Castle
MERIONETH	Bad	Over average	Average	Average	Average; good	Average; good	Over average	Average	Under average	James Bennett, Rhug Gardens, Corwen
MONTGOMERY	Under	Over	Average	Under	Under, and bad	Under	Abundant, and good	Over, and good	Under	Wm. Lee, Powis Castle Gardens, Welshpool
PEMBROKE	Do not succeed here	Average	Average	Average	Under	Nearly average	Good, except Gooseberries	Over average; remarkably fine	Under average	Henry Howard, Castle Malgwyn Gardens
RADNOR	Average crop	Very good	Excellent	Average crop	Failure	Under average	Excellent	Very good and large	Under average	Henry Thomas, Boultibrook Lodge, Presteign
IRELAND.										
ANTRIM	.. .	Very good	Good	None grown outside	Half a crop	Very good	Very plentiful	Good crop	....	D. Taylor, Glenarm Castle
ARMAGH	Under	Average	Average	Under	Under; good	Under; good	Average; very good	Average; good	. . .	W. Allan, Brownlow House
CARLOW	Under	Under	Under	Under	Under	Under	Average	Average	Under	Thomas Turner, Oak Park
CAVAN	....	Very scarce	Under an average	Under an average	Under an average	Very scarce	Almost a complete failure	Under an average	....	—
CLARE	....	Under	Average; good	Under	Average; small	Average	Good	Over; good	Almost none	W. Wilson, The Gardens, Dromoland Castle
CORK	....	Victorias good	Under average	....	Under average	Light crop	Over average	Very good	Average	John Fraser, Besborough
DERRY	Under; bad	Average; good	Over; very good	Under; bad	Over; good	Average; good	Over; very good	Over; good	Average; good	William Fleming, Palace Gardens, Londonderry
DONEGAL	....	Bad	Average	....	Bad	Average	Good	Good	Bad	Armstrong Hanlon, Drumboe Castle
DOWN	Bad	Bad	Average	Few grown	Bad	Bad	Fair average	Very good	....	James Taylor, Mountstewart
DUBLIN	Complete failure	Good average crop	About half a crop	Moderate crop	Under average	A mere sprinkling	Heavy and fine	Moderate crop	....	G. Smith, Vice-Regal Gardens
	Average; good	Under; good	Average; good	Under; bad	Under; good	Average; good	Over; good	Average; good	Under; bad	John Ellam, Brenanstown House, Cabinteely
	Under	Average	Average; good	Under; bad	Average; good	Average; good	Over; good	Average; good	Under; bad	David Pressly, Knockmaroon Lodge

CONDITION OF THE FRUIT CROPS *(continued)*.

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
IRELAND.										
FERMANAGH	Very few cultivated	Average; good	Average in orchards; good	Very few cultivated	Almost a failure	Under average; good	Over average; very good	Average; good	Under average; good	J. McDonald, Florence Court, Enniskillen
KILDARE	....	Under average	Under average	Average	Under average	Under average	Average; good	Over average; good	....	W. A. Emery, Kilkea Castle
KILKENNY	....	Under	Under	....	Average	Under	Over	Average	Under	George Dodd, Woodstock Park
KING'S COUNTY	....	Average; good	Average; good	Under; bad	Under; good	Average; good	Average; very good	Over; very good	Average; very good	T. J. Hart, Birr Castle Gardens, Parsonstown
KERRY	Under average	Under average	Average	Under average	Under average	Under average	Over average	Over average	Average	Francis Kelly, Killarney House Gardens
MEATH	....	Under average	Over average	Under average	Under	Under	Average	Over average	Average	John Clews, Headfort Gardens, Kells
SLIGO	Scarce in this district	Under average	Average	None outdoors	Under average	Average	Under average	Good average	Good average	J. White, Hazlewood
TIPPERARY	Bad	Half a crop	Very good	Bad	Bad, except on small trees	Bad	Very good	Very good	Half a crop	Jesse Wilsher, Shanbally Castle, Clogheen
WATERFORD	Under average; poor	Under average; good	Average; good	Under average; poor	Under average	Under average; poor	Average; very good	Average; good	Not grown	G. Fairbairn, Curraghmore, Portlaw
WESTMEATH	Bad	Under	Bad	Under	Bad	Bad	Under	Good	....	John Igoe, Moydrum, Athlone
WEXFORD	....	Over; good	Average; good	Average; good	Under; good	Under; good	Average; good	Over; very good	Average; good	P. Braund, Courton House, Gorey
WICKLOW	Few grown	Under average	Average	Under average	Under average	Under average	Average; good	Average; good	Under average	Charles Penford, Powerscourt
CHANNEL ISLANDS.										
GUERNSEY	Under; bad	Under	Under; bad	Under; good	Over; good	Under; good	Under	Average	Not grown	Thomas Collings Brehaut, Richmond House
JERSEY	Under; good	Under; good	Under; bad	Under; good	Average; good	Average; good	Under; good	Average; good	Average	Charles B. Saunders, St. Saviour's
ISLES OF SCILLY	....	....	....	....	Under average	Under average	Average	Good	....	George D. Vallance, Tresco Abbey Gardens

REMARKS ON THE FRUIT CROPS.

Following our usual custom, we supplement the tabulated report on the present appearance of the fruit crops, which is given in the preceding pages, with the following extracts from communications kindly sent by our correspondents along with their report. We follow also the plan adopted last year of placing the counties in the order of their importance as fruit-producing centres, as shown by the Agricultural Returns for 1877, published by the Statistical and Commercial Department of the Board of Trade, which under the head of "Orchards, &c.," gives the acreage of arable or grass lands used also for fruit trees of any kinds. First on the list comes Hereford, with a total of 24,885 acres, showing an increase on 1876 of 269 acres. Devon follows closely with 24,776 acres, showing an increase on the previous year of 679 acres. Somerset, the only other county which has an acreage, under such culture, of over 20,000 acres, is credited with 20,921, or 108 acres less than in 1876. Worcester stands next with 14,621 acres—an increase of 443; followed by Kent with 13,097—an increase of 1431; and Gloucester with 11,965, showing an increase 363 acres. Cornwall had 4497—an increase of 125; Dorset, 3814—an increase of 158; Middlesex, 3051—an increase of 124; Salop, 2944—an increase of 193; and Surrey, 1726, showing a decrease of 331. In 1876 the total acreage in these eleven counties was 122,951; while in 1877 it was 126,297—the increase being no less than 3346.

Hereford.—Among Apples, Stirling Castle, Lord Suffield, and the New Northern Greening, are proving good and certain croppers, and should be largely planted. Our local Seek-no-further is also very good this season, and Cellini, too, may also be trusted as a good and sure cropper. This has proved a very disastrous season for Pears, the wood not ripening sufficiently in the autumn of 1877. Peaches and Nectarines have suffered a good deal from blister, but are now making good growth, which however can scarcely ripen in time to insure crop for 1879. *William Ward, The Gardens, Stoke Edith Park.*

—— Fruit-crops in this district vary very much. The Apples that have set best are Keswick Codlins and Devonshire Reds. Plums on west walls are best; in some gardens bush-trees are heavily laden. Pears very poor; we had a tolerable show of bloom, but the greater part was injured by frost, and some trees have fair crops on the same aspect, while the rest a blank. *N. Fuller, The Gardens, Downton Castle, Ludlow.*

Devon.—Apples are variable, such sorts as Keswick Codlin, King of the Pippins, Northern Greening, and Lord Suffield, are a full crop; but many sorts are very thin. Altogether, the crop is considerably under the average. The same remarks apply to the cider orchards. Strawberries, where properly cultivated, have been plentiful, the fruit not quite so fine as in a more genial season. Other small fruits have been abundant. Cherries, with the exception of Morellos, nearly all dropped in stoning. *Alex. Ayson, Oxton, Kenton.*

—— Plums blossomed well, and set well to all appearance; but nearly all dropped off while the fruits were as large as Peas only, and Cherries were the same. Peaches and Nectarines good where protected by glass coping. Apples blossomed well, but being wet and cold very few set at all; and of cider fruit there is scarcely any. Pears blossomed well, but set very thinly. *Alfred George, Bicton Gardens.*

Somerset.—In this neighbourhood the spring of 1878 was one of the most promising we have had for many years with regard to the prospect of an abundant crop of fruit. The Apple orchards were one mass of bloom—in fact, fruit-trees of all kinds bloomed freely, with the exception of some varieties of Pears, which were rather thin; we have, notwithstanding, a fair average crop of the latter. All looked well up to the end of May, when a change came over the scene; Cherries, instead of swelling, begun to drop until the greater part was gone, Morellos being the only kind here that held on to the end. About the middle part of July Apricots began to follow suit, and these have fallen to such an extent that some large trees which were bearing good crops have scarcely a dozen remaining. Plums, Peaches, and Nectarines, seem to stand better. The Apple trees which at the end of May looked so flourishing, by the end of June in many instances presented a sad appearance; the foliage looked as if it had been blasted by fire, and with a gentle summer breeze passing through the branches the leaves and embryo fruit fell scattered on the ground, somewhat similar to what one may witness on a frosty morning at sunrise in the month of November; neither were Pears wholly exempt from this malady. The cause of this failure many attribute to the unripened state of the wood last season; but my own impression is, that the low wet temperatures we had caused the Cherries and Apricots to drop at stoning, and the same with a sudden fluctuation to one of excessive dry heat which we experienced this season, I think we may look for the source of the evil which has fallen on many of our Apple trees. *Thos. Foote, Clevedon Court.*

—— The whole of the fruit crop promised well up to the beginning of May, when the weather set in very wet, with a very low temperature, which continued up to the beginning of June, and I consider did all the injury to the crop. The Figs in particular would have been abundant, Walnuts would have been plentiful—Filberts would not, there being no catkins. *J. C. Elworthy, Nettlecombe Gardens.*

—— The fruit crop is not very good in this neighbourhood. I have been informed that in some gardens there is scarcely any fruit at all. *W. Hallett, Cossington Farm, Bridgewater.*

Worcester.—Although the fruit crops in this district are superior to last year they are, upon the whole, sadly below an average, and very partial. Tolerably heavy crops of Apples may be seen in one orchard, whereas others are almost fruitless, young trees as a general rule all bearing best. This, the most serviceable of fruits, did not suffer when in bloom from actual frost, and never were trees more floriferous, moreover the bloom was late, with every prospect of an abundant crop, but it doubtless succumbed to the severity of the weather, which continued throughout May, the ground being at the time sodden with water. Amongst sorts bearing full crops generally are King of the Pippins, in every instance heavily cropped; Lord Suffield, Keswick Codlin; Ecklinville Seedling, very free bearer, and excellent; Dutch Mignonne, Hawthornden (new), Tower of Glamis, Striped Beefing, Golden Winter Pearmain, Waltham Abbey Seedling, Sturmer Pippin. Pears were but scantily and partially bloomed, and doubtless suffered much with the Plums when in flower from severe frosts, which were then general; 15° of frost is too severe for such blossoms to withstand without protection. Marie Louise and Beurré Bosc are bearing the best crops here. The crop in general is a very light one. Plums: partial heavy crops are occasionally seen of all kinds, and the reverse in other cases. Small fruits generally, with the exception of Gooseberries, plentiful, although not up in size and quality. Nuts very deficient, which was to be looked for, there having been such a profusion last year. *G. Westland, Witley Court.*

—— With some exceptions the fruit crops are a considerable improvement on last season, stone fruits as a whole being up to the average; bush fruits, Gooseberries excepted, also a fair crop. Apples suffered from the excessive wet and sunless days during the period of bloom, and consequently the fruit dropped more than usual—orchard trees suffering most in this respect. *Wm. Cox, Madresfield Court.*

—— All fruit crops are partial in this neighbourhood, with the exception of Plums and Strawberries, which are very fine. In the gardens here we have everything good except Peaches—outdoors, none; Apricots very few, except under glass coping—they are fair. *John Gough, The Gardens, Westwood Park, Droitwich.*

Kent.—In all the thirty-one seasons I have known at this place and the neighbourhood, there has never been so light a crop of Pears; there was at one time a fair promise of a tolerable crop, but the greater portion fell off when the hot weather set in. Apples at one time promised to be much over average, but early in July about half the crop, on the whole, fell off, some of them larger than Walnuts; a fair average is left, if they come to perfection. No Walnuts, and very few Filberts and Cobnuts. *John Cox, Realeaf.*

—— Fruit crops in this locality are, with a few exceptions, under the average. Damsons are a good crop in most places, and so are a few kinds of Plums, such as Victorias, Early Prolific, and Jefferson. Of Apples, King of the Pippins is carrying the best crop this season in most of the orchards. *C. Haycock, Barham Court, Maidstone.*

—— The fruit crop generally is below average. Cherries short, excepting English and Flemish (red preserving); Gooseberries very scarce (Rifles the

best); red Currants more prolific than black; Plums below the average—the Bush Plum is the most prolific, but Victorias and Old Orleans have a fair crop. Damsons in this district good; Apples are scarce, with the exception of a few sorts: many young trees struck with blight. *Thos. A. Killick, Mount Pleasant, Maidstone.*

—— Nothing looked so beautiful and promising as Cherries, taking a 6-mile radius round here (Sittingbourne); but, alas! a few nights of wet and cold fogs altered the aspect of things much, and again the fruit growers round here must feel it much. *H. Russell, Torry Hill, Sittingbourne.*

Gloucester.—In general Apples and Pears are much under the average, in spite of the abundance of blossom the trees produced. Peaches and Nectarines, Plums and Cherries, are abundant and good; Gooseberries set well, but only to drop off. Mulberries, Quinces, and Medlars are very scarce. Walnuts, Filberts, and Cobs are very thin indeed; the trees produced but few catkins here, which accounts for a light crop. *Thomas Shingler, The Gardens, Tortworth.*

—— The fruit crop is not so good as one would have expected after such a favourable spring. The heavy rains, with a long spell of low temperature, caused a vast amount of stone fruit to fall. Small fruits, especially Strawberries, have been very fair. *W. J. Simpson, Kingscote Park, Wotton-under-Edge.*

Cornwall.—Apples in orchards are very scarce: in gardens on espaliers the crops are better—some kinds, such as Hawthornden, are heavily cropped. Pears on dwarf trees have a sprinkling; the same may be said of those on walls. Peaches and Nectarines are a good crop here. Figs out-of-doors are a poor crop; I do not recollect seeing so few, nor can I account for it, as the winter was not at all severe, except it is owing to the abundant crops they yielded last year. Reports from Plum gardens are not favourable. Small fruits were abundant, especially Gooseberries and Strawberries—but what a plague the birds have become. *H. Mills, Envs.*

—— Pears and Apples are very scarce; Currants and Raspberries were a good crop, but Gooseberries are not ripening well. In some places Peaches are abundant. *W. N. Carne, Rosemundy House, St. Agnes.*

Dorset.—The fruit crop generally in this immediate neighbourhood is much below the average. Most fruit trees flowered freely, and gave promise of good crops; but the unusually wet cold weather during blossoming, and afterwards, had a decided effect in lessening the fruit crop in this locality. *Henry Munro, Clevelands, Lyme Regis.*

—— The fruit crops in this neighbourhood are generally very bad; in fact it is the worst season I have ever known. The Apple trees at the beginning of the season were very promising, but they are now very much blighted, some of them having lost, not only fruit, but nearly all their leaves. The Peach and Nectarine trees are very much improved, but the fruit in general is very thin, excepting Veitch's Diamond, which is of a hardier nature, and always carries a first-rate crop. Pears and Plums will be scarce. Of small fruits, and especially Strawberries, we have very heavy crops and first-rate in quality. *W. G. Pragnell, Sherborne Castle.*

Middlesex.—The blossom on fruit trees of all sorts, excepting Pears, was most abundant; Apples were especially floriferous. The weather appeared propitious, and there was every appearance of a full crop. It was remarked, moreover, how quickly the bloom was shed—"in full bloom to-day, gone to-morrow"—and it was soon observed that the fruit had not set. On three-fourths of the trees there is not a single Apple; some varieties, on the contrary, are bearing a full crop, such as Small's Admirable, Keswick Codlin, &c. Denyer's Victoria Plums are a fine crop; all others failures. *A. F. Barron, Chiswick.*

—— Perhaps the most remarkable fact connected with the fruit crops this season is the imperfect setting of the fruit, and the consequent falling off in the earlier stages of its growth. This has been especially the case with Apples, which at one time appeared most promising for an abundant crop, but now are quite the reverse. *John Woodbridge, Syon Gardens, Brentford.*

—— The most singular thing connected with the fruit crops in this neighbourhood, the present season, is the remarkable difference which the sharp frosts, at the time of blooming, had upon different kinds. Apricots, Peaches, and Nectarines are in most places a good crop, although whilst they were in bloom there was, on two or three nights, 13° degrees of frost. It is seldom that they escape with several degrees less than this, even when carefully covered. Gooseberries were, in a great measure, destroyed, Currants mostly escaping, most varieties of Pears having the crop in a great measure killed. Apples were late in blooming, the flower lasting a shorter time than ever I recollect seeing it; they generally set freely, but many fell off afterwards. *T. Baines, Southgate.*

—— Everything in the early part of the spring promised well for an abundance of fruit. The trees were well furnished with blossom-buds, and the wood generally well matured, so that the prospects were more than usually good. The severe frosts, however, at the end of March and the beginning of April, quite destroyed all these bright hopes. In some places, where well protected, the crops are tolerably good; here, however, they are by no means satisfactory. Situated on an elevated spot, and much exposed to the east, we suffer more from late spring frosts than most of our neighbours. Plums were very much injured, many of the spurs were killed back to the wall. Peaches and Nectarines appear to have suffered less. Pears, although blossoming most abundantly, have, nevertheless, set but a moderate crop. Cherries set well, and continued to swell until they arrived at the stoning process, when they all withered and fell—owing, no doubt, to the sudden check they received in the early part of April. Apples, some trees well laden; on others, although well blossomed, the crop is very light. Gooseberries, though well set, fell off as soon as they began swelling. Currants a very indifferent crop, except black ones, which are abundant and fine. Raspberries a fine crop, also Strawberries. *T. P., Stanmore.*

Salop.—Apples with us are a miserable failure, the only exceptions are Lord Suffield, Hawthornden, Cellini, Cox's Pomona, and Tower of Glamis; the trees in spring were very promising, but owing to the bad autumn of last year and the cold wet April of the present they failed to set properly. Pears, as a rule, flowered sparingly, most sorts are a blank; the exceptions are Beurré Diel, Belle de Noel, Beurré d'Amanlis, Louise Bonne of Jersey, Beurré de Capiaumont, and Dunmore. Peaches on open walls are thin, but fine in quality; under glass they are very good in every way. Plums are a very heavy crop, and fine in quality; Damsons the same. Walnuts thin, but good in quality; other Nuts a very heavy crop. *James Louden, The Quinta, Chirk.*

—— Fruit crops in this neighbourhood are about half a crop, with the exception of small fruit, which is plentiful. Apples and Pears about half a crop; Plums fair; Damsons good average crop; Walnuts and Filberts very thin. *W. Pratt, Hawkstone, Shrewsbury.*

—— With a better bloom than usual we have the worst crop of Apples I ever remember, and what few set are now nearly all falling off—the drenching rains during the time they were in blossom prevented the fruit setting; we have a few exceptions—trained trees—which being more open would dry quicker: they are mostly King of the Pippins, Manx Codlin, and Keswick Codlin. Pears fairly good all round. Plums set large quantities, and required thinning; these are on walls. Apricots were destroyed by frost, although covered with Frigi Domo whilst in bloom—Peaches escaping on the same wall. *A. S. Kemp, Houghton Hall, Shifnal.*

Surrey.—There never was a better show for fruit than we had this spring, and all went on well until the cold weather in May, when by far the greatest quantity gradually disappeared, leaving little or no trace behind. I was very much impressed with the idea that all would go, but fortunately it was not so, as we have good crops of the following: Apples—Dumelow's Seedling, Devonshire Quarrenden, Alexander, Golden Russett, Golden Reinette, Cornish Aromatic, Atkin's Seedling, Golden Pippin, Court of Wick, Jacomb's Pine, Yellow Ingestre, Stone Pippin, Tower of Glamis, London Pippin, Lamb Abbey Pearmain, Blenheim Orange, Downton and Cockle Pippin. Other varieties have a fair sprinkling of fruit, but not a full crop. We have a fair sprinkling of Pears on some trees, the most being on Doyenné du Comice, Josephine de Malines, Calabasse d'Été, Summer Beurré d'Aremberg, Colmar Français, Seckle, Beurré Rance, Napoleon, and Williams' Bon Chrétien. There are good crops of the following kinds of Plums, but the fruit is small—Prince Engelbert, Green Gage, Jefferson's, and Downton. *J. Ollerhead, The Gardens, Wimbledon House, S.W.*

—— At these gardens, and as far as I can ascertain in the neighbourhood, the Apricot, Peach, Nectarine, and Fig crops are very thin indeed, and may be said to be failures. All looked as promising as could have been desired, but on April 15 a frost proved too much for them. The same may be said of Apples and Pears. Plums on walls are good, but standards and pyramids are a failure, with the exception of the Victorias and Green Gage; Morello dessert Cherries are very good on walls, but thin on standards. *Alfred Evans, Lythe Hill, Haslemere.*

—— Apricots here were in bloom early, consequently were cut by early spring frosts, in some cases destroying all the bloom. Plums set well, and are carrying a heavy crop. Cherries bloomed well and set their fruit, but were very much damaged by wind and cold rain. Peaches and Nectarines set well: are a good crop. Apples bloomed well, but owing to the rain and wind did not set well. Pears set well, but the greater part fell off. Gooseberries and Currants, both black and red, are plentiful and fine. Strawberries fine, but owing to the dry weather were soon over. *W. Kemp, Albury Park, Guildford.*

Notices of Books.

Dr. Marshall Watts has prepared a *School Flora* for the use of elementary classes (Frederick Warne). Its object is to enable the student who has some little preliminary knowledge to identify the common plants he may meet with in his rambles. The book is readily portable, though interleaved for notes, and contains, we are assured in the preface, a complete enumeration of the plants that grow within a few miles of Giggleswick School, in addition to all the commoner plants of the country at large. The plan adopted is the analytical, which is, indeed, the easiest for a beginner, but has the defect of all artificial schemes, of conveying but little idea of the true relationships or family kinships of plants. The pronunciation of the names is indicated and a few woodcuts given. The blank leaves suggest a mode of using the book not indicated in the preface, and that is the insertion by the student of notes of observation or research on the plants in question. Thus, to give one instance, under the head "Drosera" might appropriately be added a brief note relating to its power of absorbing and digesting animal matters—a fact of far more consequence than the mere indication of the locality where the plant grows. The details of structure are to most persons very dry and uninteresting, but when combined with information as to the life-history and mode of action of the machine, the dryness is replaced by no slight amount of interest.

—— What Dr. Watts has done for British wild plants the Rev. W. W. Spicer has done for those of Tasmania, in his little book entitled *A Handbook of the Plants of Tasmania*. As far as we can judge from mere inspection—and no such work can be perfectly tested except in the field—Mr. Spicer has done his work well. He has given us a list of the plants in analytical form for easy reference, and then a classified list according to the sequence of the natural orders, with references to authorities. Had he done nothing beyond this he would have done good service, for there is nothing available for students of the Flora of Tasmania save the costly *Flora of Tasmania* of Sir Joseph Hooker, the scattered publications of Baron von Mueller, or the voluminous *Flora Australiensis* of Mr. Bentham.

—— The veteran botanist, Mr. Miers, has recently published an elaborate monograph on the *Apocynaceæ of South America*, illustrated with thirty-five lithographic plates. The special value of the work consists in this, that it is based on observations made on the living plants in Brazil many years ago. Among plants more particularly interesting to horticulturists, Mr. Miers enumerates fourteen species of Dipladenia, D. nobilis being transferred to Chariomma, D. Harrisoni to Odontadenia, D. crassinoda, splendens, urophylla, and others, to Micradenia.

Garden Operations.

KITCHEN GARDEN.

In this department there will be at the present period of the year an abundance of ground falling vacant from which the crops of Peas, Beans, Potatos, &c., have been removed, which, without much interference with the routine of cropping for the subsequent year, can be made available for salad and similar subjects. The demand for salads has so wonderfully increased of late years as to necessitate almost constant attention to this matter in order to cope with the demand which is constantly required. The present period is the time to plant out extensive breadths of Batavian and Curled Endive, and Black-seeded Cos and Stanstead Winter Cabbage Lettuce for giving the autumn and winter supply. As all the subjects which are used in an uncooked state require to be quickly grown in order to be crisp and tender, see that suitable places for fulfilling these requirements are selected, and proceed with the planting of those plants which were sown about the third week in July immediately they are fit for the purpose. By this time the advanced crop of winter Onions and Spinach ought to have been sown. This should be supplemented by another sowing on or about the 11th of the current month, to form the main crop for the ensuing season, and as such a liberal space between the rows should be allowed. Winter crops of Spinach are at times and in some places liable to canker at the collar of the plant, and die off very much; we therefore recommend the sowings not to be made in

close proximity to each other, and where the soil is light and rich it should be firmly trodden down without being dug, and the plants in the rows be well set out at about 9 inches apart. The general sowing for the main crop of Cabbage should be made about the 8th inst., and a subsequent sowing a week later. Sow also good breadths of a winter kind of Turnip now. About the 20th of the present month sow Lettuce to stand the winter, and come in for spring use; amongst the different kinds which we have tested we still give the preference to the old Black-seeded Brown Cos and the Stanstead Winter Cabbage for sowing at the period referred to. Make a sowing of Cauliflower about the 24th in an open place where the plants are not liable to become drawn. We find that, owing to the long period of dry weather which lately prevailed, the summer crops of Onions are already ripening off; for the sake of appearance the tops of these may be laid down. We have not, however, found this practice to be attended with any beneficial results when large bulbs are desired, as the largest are generally those which stand erect the longest. The recent rainfall has come most opportunely, and already altered the appearance of the different crops considerably, and made planting operations easy to be performed. Take advantage of suitable opportunities, when the weather is dry, to tie up Endive. If this subject is not well blanched its quality is much depreciated, and, undoubtedly from this cause alone, it is not so generally esteemed as it should be for salading purposes. *G. T. Miles.*

Mushroom-House.—If not already done this house should be cleared out entirely, and be thoroughly cleansed, in order to eradicate those terrible pests "woodlice," which are sure to abound, more or less. Everything about it should be put in order, so that operations for the forthcoming season's supply may be commenced. For this purpose it will likewise be necessary to collect manure for the same object. Let the first-made beds be placed in the coolest part of the house, and in the first instance use rather more loam in the beds. *G. Thos. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

The present dry weather, although anything but favourable for the swelling of fruit, will have a most salutary effect in checking the redundancy of growth on trees bare of a crop, or which have light loads to carry, a condition which, judging from the reports just made, is only too common in most parts of the country. There can be no question that a judicious summer pruning and stopping of the young growth will do much to produce fertility; but a dry state of the atmosphere at this season, such as we are now getting, works wonders in aiding the formation of flower-buds and ripening and hardening the wood, which already gives promise of early maturity. In the case of trained trees, however, it will be necessary to give all the assistance possible towards this ripening process, by removing any superfluous shoots, so that the spurs and main leaves around them may have the full benefit of all the light and air that can be afforded while the sun bears plenty of power, as solar heat is one of the principal factors in converting the sap to its proper uses. Now that the stoning of Peaches and Nectarines is over, and the final swelling off is about to take place, abundant supplies of water should be given at the roots, as it is astonishing the amount of moisture they will take up at this stage, and, without artificial assistance during such an arid time as we are now having, it is impossible to obtain fine fruit, or to keep the trees free from red-spider, a pest that is sure to assail them if they are overstocked in any way. Not only will they take plenty of water just now, but they will also bear a good soaking or two of liquid manure, where growing on light poor soils; and if this is supplemented with a slight mulching, to shade the border and prevent evaporation, the roots will be in a comfortable condition for some time to come, unless, as too frequently occurs, they are robbed by vegetable crops growing near. This double cropping is a great mistake, and does more to ruin fruit trees than many imagine; but, with increased demands, most of us are obliged to resort to it, little or much, although fully alive to the evil. In all cases, however, where such a practice has to be pursued, the ground should be cleared as soon as possible, for, bad as it may be during early spring and summer, it is doubly injurious just now, when everything is struggling for existence, and roots are drinking up every drop of moisture they come near with the utmost avidity. To leave anything standing to rob the soil longer than is absolutely necessary is so much loss to the trees, and this not only tells now, but its effect is felt the year following owing to the exhaustion it produces, and the consequent inability there is to form fruit-buds under such circumstances. In cases where grafts failed now is the time to make good the loss by inserting buds, which as regards Plums, Apricots, Cherries, and Peaches, is always the safest and best mode of propagation. In order to be successful, however, it is highly important that the young wood from which the buds are taken should be tolerably mature, for when the bark is in a green soft state they are almost sure to shrivel up and fail, unless an unusually favourable time should happen to set in just as the operation is carried out. In taking the buds the principal thing is to get them off and inserted without bruising, and if this is done and the bark of the stock runs fairly well success is almost a certainty. The best time to set about the work is soon after a heavy rain and when the weather is dull, as then there is a more abundant supply of sap, which is greatly in their favour. Although the wood from fruit-tree buds does not come out so readily as that from the Rose it may easily be removed by a dexterous use of the thumb-nail, and on the skill with which this is done the art of budding principally depends, as any bending back of the bark in doing it ruptures the tissues and causes the part so injured to turn black and die off. This is why amateurs and others unaccustomed to this most interesting branch of gardening so frequently fail in getting buds to take, and another reason is in the tying them in, which should be done with pieces of stout worsted or similar soft elastic material that will remain in the same condition of tightness under any changes of weather. Vines on open walls will now require going over in order to remove any lateral shoots that may have formed, and overshadow the bunches, which, if not fully exposed, will stand but little chance of ripening unless the autumn should turn out unusually favourable. Mildew, the great scourge of outdoor Vines, is easily eradicated if taken in time, by applying dry flowers of sulphur, an operation that should be performed early in the morning while the leaves are moist with dew, as then it adheres more readily than at any other time. A dredger or large pepper-box answers well as a distributor. *J. Sheppard, Woolverstone.*

FRUIT HOUSES.

Pines.—Under the suitable conditions which naturally prevail at this particular season of the year, and with proper attention combined, all young stock in this department will make rapid and vigorous progress. This should be fostered to the utmost extent with the aid of solar influences, and every attention should therefore be given to the ventilation, so as to make these means available for this end. By this time the plants, with few exceptions, will have become so inured to the powers of sunshine as to be able to resist its effects without detriment. Under these circumstances shading should be entirely abolished, and any existing impediments to its free access to the plants be removed. In order, likewise, to promote speedy growth in recently potted plants, let the heat at the roots be well sustained at about 95°. Be cautious in the application of water at the roots of such plants, for until the roots are multiplied so as to absorb it, only a limited quantity will be necessary; on the other hand, when the soil in the pot is well permeated with roots plentiful supplies of this element, with a slight admixture of guano or other stimulating agent in it should be given at intervals as required. A minimum temperature at night of 70° should rule in Pine structures at the present season, and 95° as a maximum when sunshine exists. Close up the house at this point as soon as the sun begins to wane in the afternoon. Ordinary matters—such as sprinkling the floors and syringing the foliage of the plants occasionally—should be attended to as required with regularity. *G. T. Miles.*

Melons.—Stopping, thinning, tying, &c., will be the order of the day in this department, all of which, where success is aimed at, must be carefully and skilfully attended to as advised in former Calendars. The recent and somewhat frequent storms have necessitated the fire being lighted occasionally to dispel unnecessary damp, and now that the nights are getting longer and somewhat colder, the fires will be the better for being lighted when the evenings indicate a falling in the temperature during the night. The atmospheric moisture in the houses, pits, and frames, must of course be regulated in accordance with the requirements of that stage of growth at which the occupants of each structure may have arrived, and the conditions of the weather—that important element upon which so much depends the success of all crops. Shutting up in the afternoon can be done somewhat earlier—say at from three to half-past three—now that the days are becoming shorter. Damping must be done very sparingly in pits and frames where no hot-water pipes are at command. The latter will be the better for having the linings made up a little around those frames in which the plants are just now swelling their fruit. *H. W. Ward, Longford Castle.*

Cucumbers.—Now, and again at the end of the current month, will be a good time to make a sowing of Rollisson's Telegraph—in my opinion one of the best varieties for winter work, producing as it does nice handsomely-shaped and moderately-sized fruit. The plants are also constitutionally good, and very prolific. Sow the seeds singly in large 60's in light mould, and plunge in a Cucumber frame, and shift as they require more room at the roots until they are planted out or finally shifted into their fruiting pots or boxes, as the case may be, for which use an admixture of three parts light loam and one part peat and charcoal should be used. In this mixture I have found winter Cucumbers to grow satisfactorily, more so, in my opinion, than when animal or other manure is incorporated with the above ingredients. Stimulants, moreover, can always be applied in a liquid state as the plants may require it. Put small thin sticks to the plants when sufficiently grown to require support to prevent their being broken through vibration or other causes. Attend to the stopping, thinning, tying, and removing of superfluous and mis-shaped fruits. Syringe the plants twice a day during bright and otherwise favourable weather, and shut up early—at from 3 to half-past 3 o'clock in the afternoon. See that the plants do not suffer for want of or from too much water at the root; but when they require it give it them unsparingly. Look well after wood-lice; they can be speedily reduced by pouring boiling water along the sides and ends of the interior of the structure in which the plants are growing in the morning. The soil should be previously well trodden down. Guard well against red-spider and mildew, and should they appear apply the usual remedies. Should green or black fly perchance put in an appearance, fumigate with tobacco-paper in the evening when the plants are dry, or dust with Pooley's tobacco-powder in the evening when the plants are damp, which should be well syringed off the plants the morning immediately succeeding its application. *H. W. Ward, Longford Castle.*

PLANT HOUSES.

The propagation of most of the winter blooming plants will now be over, and the frame or house should therefore be utilised for the propagation of foliage plants, or other subjects which it is desired to increase. Now is about the best time to propagate Cissus discolor for festooning or draping the roofs of stoves, walls, &c. Cuttings struck now will make nice plants by spring, and under proper treatment will grow compactly next year. Now is also a good time to propagate Cyanophyllums, Sphærogynes, &c., for next year's specimens. Continue to propagate Dracænas and Crotons to work into useful stuff early next year. Also pot and work up a good stock of Cyperus alternifolius variegatus, Fittonia argyroneura, F. Pearcei, and F. Verschaffeltii, Peperomia arifolia, P. argyrea, and P. marmorata, Sonerila margaritacea, Ficus Parcellii, Campylobotrys Ghiesbreghtianus, Sanchezia nobilis var., Selaginella apoda, cæsia, Martensii, stolonifera, and denticulata, &c., all of which will be useful for furnishing during the winter months. Caladium argyrites that ripened off early in the year may again be started into growth, and the growths divided, if desirable, for very small pots. The same may be said of Alocasia Jenningsii and macrorhiza variegata, both of which are useful in a small form. Propagate Pandanus Veitchii, P. utilis, and P. graminifolius from side shoots or suckers. Keep a sharp look-out for Fern spores, and as they ripen shake them on to pans of prepared soil and put them in a warm dark place until they have germinated, Then give more light, and immediately they can be handled by two sharp-pointed sticks, dibble them off into small tufts into other pans to allow them to further develope themselves and prevent damping off. Sow a batch of Nemophilas and Saponarias in small pots; put them in a cold frame, and give them plenty of light. They will make useful stuff for draping the fronts of stages, baskets, &c., late in autumn. Shake out Lachenalias that have been at rest, and re-pot or re-basket them. Baskets are by far the best to grow them in. We get a quantity of sphagnum moss and prepared soil (peat and loam in equal quantity, leaf-mould one-fourth, and a sprinkling of sharp sand and deer dung), commencing at the bottom of the basket with sphagnum, then a little soil, into which the bulbs are equally placed, with their crowns pointing outwards; follow up the sides in the same way, filling up the middle of the basket with soil as the work proceeds, and finish off the top in the same way and lace it over with a little wire. The whole when finished is a mass of bulbs all around the outside, the soil for them to grow in being in the centre and concealed by the moss. They are then put in a cold frame, well watered, kept close and shaded until they have made an inch of growth, and are then hung up to the roof of a cold house and kept well watered until they have done blooming and again put away to rest. Fire-heat is never used except to expel frost: under such treatment they show off their flowers to the best advantage and are much appreciated. Tropæolum Jarrettii should now be repotted, in soil as recommended for Lachenalias, and put into a cold pit until growth commences, when they may be trained over a trellis or otherwise as may be desirable. *J. Ollerhead, The Gardens, Wimbledon House.*

THE

Gardeners' Chronicle.

SATURDAY, AUGUST 10, 1878.

APPOINTMENTS FOR THE ENSUING WEEK

TUESDAY, Aug 13—Clay Cross Horticultural Society's Show.

WEDNESDAY, Aug 14—Royal Agricultural and Horticultural Society of Jersey: Show. Tavistock Cottage Garden Society's Show. Shropshire Horticultural Society's Show (two days).

THURSDAY, Aug. 15—Hawarden Horticultural Society's Show. Taunton Dean Horticultural Society's Show. Sale of Imported Orchids from Colombia, at Stevens' Rooms.

FRIDAY, Aug 16—Paris Botanical Congress (till 22d) Sale of Imported Orchids, at Stevens' Rooms.

SATURDAY, Aug 17—Saddleworth Horticultural Society's Show.

THE detailed reports of the FRUIT CROPS, which have been obligingly furnished us by our correspondents, and which we publish in our present issue, will doubtless be read with much interest. If not quite so unfavourable as those of the two preceding seasons, they are by no means encouraging. This is a fact the more worthy of notice, as the acreage under fruit culture is yearly extending, and in some counties, such as Kent, farmers apparently find it more profitable to convert their arable and pasture lands into orchards. It would be interesting to seek the causes of this. Probably the cost of labour has much to do with it, though the prices realised by the fruit grower in the wholesale markets seem by no means commensurate with the charges made by the retailer, and this remark applies with as much or more force in the case of vegetables. The effect of untoward weather in spring is nearly as marked this year as last; even Gooseberries, one of the hardiest of our fruits, having this year been singularly deficient. Local circumstances, such as favourable positions, suitable soil, rainfall, and the like, though doubtless of great importance so far as quality is concerned, do not seem to affect the general average. The influx of foreign fruits seems to be steadily increasing, and, with increased facilities for transport, is likely to do so. It becomes, then, a very important question for those who advocate the more extensive culture of fruit—in the abstract most desirable—to consider all these varied circumstances before embarking largely in the cultivation and investing their capital.

Reverting to the report before us we may give a brief summary in the following terms:—

APRICOTS.—Generally under the average. The only returns which claim an average crop come from Banff, Caithness, East Lothian, Nairn, Yorkshire (one); Derby, Leicester, Surrey, and Devon (two each); Middlesex (five), Sussex (three), and one each from the counties of Oxford, Lincoln, Berks, Hereford, Somerset, and Dublin. The only places at which the crop is reported to be "over average," are Wycombe Abbey, Bucks; Ashridge and Moor Park, Herts; The Deepdene, Surrey; Heckfield Place, Hants; Longford Castle, Wilts; and Oxton, Devon.

PLUMS.—Under an average generally, about sixty of the returns report "an average;" while an "over average" crop is reported from Tyninghame, East Lothian; Crewe Hall, and Eaton Hall, Cheshire; Elvaston, Derby; Bestwood Lodge, Notts; The Quinta, Salop; Belvoir Castle, Leicester; Wrest Park, Beds; Nuneham Park, Sarsden House, and Blenheim, Oxford; Panshanger, Ashridge and Moor Park, Herts; Stoke Rochford, Lincoln; Bylaugh Park, Norfolk; Rendlesham Hall, Suffolk; the Royal Gardens, Windsor, and Aldermaston Court, Berks; Southgate, Middlesex; The Deepdene, and Garbrand Hall, Surrey; Redleaf, Chevening Park, Torry Hill, and Bifrons, Kent; Goodwood, Sussex; Tortworth, Gloucester, Rhug Gardens, Merioneth; Powis Castle, Montgomery; and Courtown House, Co. Wexford.

CHERRIES.—Under an average generally. "An average" is reported by about eighty of our correspondents, and "over average" by seventeen, the latter coming from Inverary, Argyll; Alloa Park, Clackmannan; Castle Kennedy, Wigtown; Rangemore, Stafford; Belvoir Castle and Cole Orton, Leicester; Nuneham Park, Oxford; Stoke Rochford, Lincoln; Bylaugh Park, Norfolk; The Royal Gardens, Berks; The Deepdene, Garbrand Hall, and Lythe Hill, Surrey; Tortworth, Gloucester; Coffington Farm, Somerset; Palace Gardens, Londonderry, Co. Kerry; and Headfort Gardens, Co. Meath.

PEACHES AND NECTARINES.—Much under an average. An average is reported by less than fifty, and over average by seven only. These come from Cole Orton and Gopsall Hall, Leicester; Panshanger, Herts; Goodwood and Battle Abbey, Sussex; Heckfield Place, Hants; and Longford Castle, Wilts.

APPLES.—Very much under the average. An average crop is recorded by thirty-five only; and over average only at Burghley Park, Stamford; Cambridge House, Twickenham; Garbrand Hall, Surrey; Palace Gardens, Co. Derry; and in Guernsey.

PEARS.—Very much under an average, but sightly better than Apples, though an over average crop is in no instance recorded.

SMALL FRUITS have been abundant and good in quality, with the single exception of Gooseberries, which have been an almost universal failure.

STRAWBERRIES.—A very good average, rather over than under, and the quality has been generally good.

NUTS.—Much under an average.

"Hope springs eternal in the human breast"—no sooner do we dismiss the consideration of the present and the past than we turn to the future. This is the more reasonable, as not only do fruit growers very properly lay stress on the growth and "ripening of the wood" in early autumn, but it is a fact not so much considered as it should be, that not only is the wood ripened at this season, but that already the germs of next season's flowers are forming, and in very many instances are formed. Most important, therefore, is the autumn season. Would that the spring did not so often ruin the work of the autumn. So far the prospect is favourable. Every gardener must ere this have remarked the luxuriant growth on fruit trees this season. The woody development has received little check from the present carrying of fruit crops, as they are light; so that wood-making has its own way. So far the season has been very favourable to the ripening and proper maturation of such growth, and unless a change occurs there is no reason to doubt but that, as far as such wood can be properly perfected, it will be. What, then, will be the result on the next year's crops? Has this woody growth been so much in excess as to injure the due development of the fruit-buds? If so, our prospects of a fruit season in 1879 will be poor indeed. If, on the other hand, there has been a building up of flower-bud and of wood simultaneously, a better prospect is opened before us. These are points, however, that it is yet too early to decide on, but it is worthy the attention of readers during the ensuing autumn. Last spring, in spite of a fine bloom upon the Apple, the crop was a very thin one. Some attributed this sparseness to the influence of the early spring frosts upon the unopened flower-buds, whilst others declared the result to have been independent of frost, and the inevitable outcome of the unripened state of the wood of last year. It should be remarked, however, that the Apple rarely fruits from the maiden growth, but chiefly from the wood of the previous years; still it would not do to dispute an assertion that is so possible when applied to several other fruits. Will those who have been observers amongst fruitists take note during the ensuing autumn of the condition of the wood made this year after the fall of the leaf; estimate fairly its matured or immatured features, and thus form an opinion at the proper time to pronounce whether it is productive or otherwise. By doing this we may eventually be enabled more clearly to guage the damage so freely ascribed to spring frosts.

—— EARLY OPENING OF KEW GARDENS.—Sir TREVOR LAWRENCE, the Member for Mid-Surrey, who has undertaken to bring the subject of the earlier daily opening of Kew Gardens before the House of Commons, has written to the hon. secretary of the Kew Gardens Public Rights Defence Association a letter explaining that, owing to the state of the business of the House, he has been reluctantly compelled to give up all hope of finding a satisfactory opportunity for making his intended motion on the subject this session, but he states his intention of raising the question at the earliest favourable opportunity next session, and of giving notice to that effect before the House rises.

—— A BRANCHED PALM.—One of the most remarkable examples of a branched Palm is described and figured by S. PERCY SMITH, in the tenth volume of the *Transactions and Proceedings of the New Zealand Institute*. Kentia sapida, or Areca sapida, is the only Palm indigenous in New Zealand, and it has not been found far to the south of Canterbury. A branched specimen of this was discovered by one of the survey parties growing in the forest at the base of the Tangihua Mountains, Whangarei. It has eleven separate and distinct branches growing from one parent stem, most of which separate from the main trunk at about 5 feet from the ground, and after rising some 10 feet higher some of them divide again into other branches. The tree itself was about 9 inches in diameter at the ground, and about 6 inches just before it divides; the branches being from three to 4 inches each in diameter. The total height of the tree was about 30 feet, and each branch was crowned with a fine head of luxuriant leaves, forming altogether a most beautiful object. The forest around contained hundreds of ordinary specimens with single trunks. There was no fruit on the branches, though others in the vicinity were in bearing, but this may not be owing to barrenness. It would be rather interesting, Mr. SMITH observes, to ascertain whether the seeds of this particular tree would produce branched offsprings like itself. We may add that the branches, as represented in the sketch, spread very little.

—— BOTANICAL PRIZES.—The Society of Apothecaries have awarded their prizes for proficiency in Botany to medical students as follows:—The gold medal to T. B. FRANKLIN EMINSON, of St. Mary's Hospital, and the silver medal and books to W. EGERTON STARLING, of Guy's Hospital. They have also awarded their prizes for young women as follows:—The gold medal to ALICE GRAHAM, of 155, Hungerford Road, N.W., and the silver medal to MARY ISABELLA WEBB, of West Hill Lodge, Hampstead, N.W. The third in order of merit received a prize in books from Miss TWINING, of Twickenham. The examinations, both for medical students and young women, were conducted by the Rev. M. J. BERKELEY, M.A. The papers of many of the young women showed, we learn, considerable knowledge and ability.

—— LORD BEACONSFIELD, K.G.—It was a very "happy thought" of *Mr. Punch* to republish a series of cartoons, extending over nearly forty years, and illustrative of the political career of the Prime Minister. It will be examined with great interest at the present time.

—— THE CONSERVATORY AT KEW.—To be more precise we should call this No. 4, for its architectural features are not such as to justify a fine-sounding epithet. Nevertheless, enter when you will, it is sure to be gay even in the depth of winter. Many visitors who may only have half-an-hour to spare make for this house at once, and pass over the Aroids, the



FIG. 36.—GRAMMATOPHYLLUM SPECIOSUM. (SEE P. 183.)

Palms, the Succulents, which, if they appeal to a more cultivated taste, are not the plants for the million. It is all the more desirable then that No. 4 should contain the best and most striking plants of a decorative class, and in the highest state of culture. A sprinkling of ordinary greenhouse stuff should be grown at all times to secure colour and brightness at all seasons, but these should be as a fringe to fine specimens of select specimens of little-known ornamental plants, which would serve as reminders to gardeners to vary the monotony of their displays. Strictly botanical objects not of an ornamental character should form no part, or at least not a principal part, of such a house, which should be maintained as a popular house and as a show-house for gardeners who have to study decorative gardening. Just now No. 4 is gay with Fuchsias, among which some of the old sorts, as virgata and coccinea, will hold their own with the more modern varieties in grace, if not in size of flower. Berberidopsis corallina is a very striking climbing plant, with deep crimson Berberis-like flowers, far too seldom seen. Agapanthus, Cannas, Cockscombs, Pelargoniums, Lobelias, Statices, Campanula pyramidalis, Hydrangeas, Lantanas, Balsams, and Begonias, with many others, render this house very gay at this season, while the creepers on the roof are many of them rare and choice. The Camellias are planted out in the centre, and are very attractive in their season.

—— HANGING GARDENS.—Whatever may have been the riches of the hanging gardens of Babylon, it it is pretty certain that, all things considered, they were not excelled by what may be seen in some of the West-end squares. It would be quite worth while for the gardener who has to make a show with limited means, and under unpropitious circumstances, to pay a visit to some of the streets at the West-end of London, and see what may be done to relieve the dingy monotony of London streets. In an area decorated with a dozen hanging baskets variously furnished, we lately noticed one in particular as strikingly effective. It contained a small Yucca as a centre piece, surrounded with Ivy, the dull green of which was relieved by the bold white, yellow and green foliage of Farfugium grande.

—— CARNIVOROUS PLANTS IN GROSVENOR STREET.—In a Fern-case in a window in Grosvenor Street, flourishing amid Trichomanes, Hymenophyllum and other Ferns, may be seen plants of Sarracenia purpurea and Darlingtonia californica—well, not quite so fine as we have seen exhibited by Mr. BAINES or grown at Chatsworth, but still noteworthy as showing what may be done in a London street.

—— THE NATURAL HISTORY COLLECTIONS AT THE BRITISH MUSEUM.—Visitors to the Royal Horticultural Society cannot have failed to notice the speedy completion of the new museum into which it is proposed to transfer the natural history collections from the existing British Museum. It had been hoped that this transfer would have afforded an opportunity for placing the natural history collections, at any rate, under the control of a naturalist of eminence not responsible to a chief librarian, possibly ignorant of natural history, and naturally with little sympathy for it. The Librarian is himself responsible to a body of trustees, men of eminence already overdone with public work and having no special faculty for so great a task as the supervision of a vast museum. What seems to be wanted is a Minister of Education, a member of the Government, to whom the superintendent should be directly responsible, but whose hands should not be unnecessarily tied. It will scarcely be believed that one Government establishment to which a library is all important, and the early acquisition of new books a matter of greatest moment, should have to make the demand to Her Majesty's Stationary Office for books — a demand complied with when it happens to be convenient. The consequence is that months sometimes elapse before the workers in some of our national collections can avail themselves of means which are in the hands of private workers directly after the publication of the work in question.

—— HOW TO MEET AN OLD OBJECTION TO FLOWER SHOWS. — It has often been urged as an objection to horticultural exhibitions, that they would lead to a gardener giving his attention to a few things, to the neglect of the general work of the garden. Experience proves that this is not true as a matter of fact, unless in exceptional circumstances; but it is urged again and again in these later days. The Marlborough Horticultural Society having had to face this objection, have, since its formation three years ago, adopted the practice of offering extra prizes to be competed for by gentlemen's gardeners in Marlborough and Preshute, with the best kept kitchen and flower garden, showing superior cultivation in all departments; and a certificate of merit, duly framed, is given to each prize-winner in addition. These certificates are duly exhibited before the public on the occasion of the annual meeting of the Society. It is satisfactory to know there is always a spirited competition for these prizes, which are valuable premiums on painstaking industry and careful oversight. The winners of the three leading prizes this season are HENRY FORD, gardener to T. E. THOMPSON, Esq., Collen House, Marlborough; EDWARD HOLLIDAY, gardener to W. E. MULLENS, Esq., Marlborough; and JOHN STEVENS, gardener to the Rev. T. A. PRESTON, the Green, Marlborough; the degree of worth being in the order of the names given. This is a wholesome practice, and one that might be adopted by country societies as a part of their practical work.

—— M. THOZET.—We regret to hear of the death, at Rockhampton, Queensland, on June 1, of M. A. THOZET, one of the most earnest and indefatigable practical naturalists in Australia. His efforts in the introduction of useful plants to the colony in which he resided were worthy of all praise.

—— NOTEWORTHY HERBACEOUS PLANTS.—In the herbaceous ground at Kew at the present time may be seen, among many others to be hereafter noticed:—Echium creticum, a fine species, with large deep red flowers; Pentstemon Torreyi, a fine scarlet flowered species like its near ally, Chelone barbata; Castilleia indivisa, a species remarkable for its scarlet bracts.

—— THE DECIDUOUS CYPRESS.—A fine example of this fine American Cypress is growing on the grass-plat close to the mansion at Strathfieldsaye, Hants; and the open, light, fresh, and agreeable tint on its leaves is in marked contrast to the darker and more sombre hues of Elm, Oak, Fir, Chestnut, &c., which are to be found around it. The specimen is not only large, but handsome in appearance and symmetrical in outline, and it is one of the chief arboreal glories of this historical residence. Among the coniferous plants, of which there are many fine examples, is a Wellingtonia gigantea, comparatively young, but of considerable height, very handsome, dense in foliage, with a trunk of remarkable dimensions for the height. It occupies a fine position, and is seen to the very best advantage.

—— MAMMOTH RYE.—This is said to be superior to any in the world, producing seventy-five bushels to the acre; it is said also that it had been found growing wild in Nevada. The large grains have indeed a great resemblance to gigantic grains of Rye. It was sown by Dr. SCHOMBURGK in the Adelaide Botanic Gardens, and came up and produced a good stiff straw and full heads, but the grain was not equal to the seed, and turned out to be a true Wheat, Triticum polonicum, Linn. The Wheat is well known in Germany, where it has been cultivated; but as the plants do not stool well they do not cover the ground, and the grain ripens very unequally and produces a coarse flour. The German agriculturists have given up its culture, which has never been very extensive.

—— BEDDING VERBENA GRUSS AUS ERFURT.—It is worth a journey from London to Chiswick to see this very fine and striking variety in flower in one of the beds on the right hand of the broad walk. It is of a very bright red colour, by the side of which all other red and crimson Verbenas growing near it appear dull and wanting in expression; many who have given up the use of Verbenas in their flower gardens will be desirous of returning to the old love when they see the glorious brilliancy of this interesting stranger. All honour to the raiser of it, for it is a perfect bedding Verbena, with a dwarf close-growing habit, and a freedom of bloom that is the height of profusion. Other new Continental varieties well deserving attention are Otto Froebel, which may be best described as a blue Purple King, very good habit, and remarkably free; and Hofgartner Hindermann, magenta, the white eye having a shaded ring round it, very pretty. A note should be made of these three varieties for bedding purposes. The Floral Committee will probably have an opportunity of seeing these before long, and they will be properly appraised by that body. The first-named of these German varieties can scarcely fail to find a permanent place in bedding plant lists, and that is a great deal more than can be said of several of the new varieties that during the past ten years received First-class Certificates. Guiss au Erfurt should take high rank as an exhibition variety. As grown in the West of England good bedders appear to be best adapted for this purpose.

—— INDIAN WOODS.—A consignment of woods has recently arrived in this country from Calcutta which have been looked upon quite as a novelty, inasmuch as they are the produce of our Indian forests, and are, so far as we are aware, the first batch that has ever been sent to this country for sale by the Forest Conservancy Department. The woods have come over in irregularly shaped logs, some of very large size, and are very varied, so far as quality is concerned, for structural or manufacturing purposes. Thus, for instance, appeared among them such woods as Box (Buxus sempervirens), Olive (Olea cuspidata), the soft and apparently useless wood of Alstonia scholaris, as well as the woods of many other trees well known for the fruits, resins, or other economic products produced by them, but hitherto unknown in this country, at least as timber trees. The collection was sold a short time since by public auction, and realised fairly good prices. It remains, however, to be seen whether the prices obtained were sufficiently remunerative to induce the authorities to send another consignment, for though the prices may have been moderately good as compared with those which usually prevail for similar woods, they may be prohibitive where the cost of transit is very great, for the remarks made in the recently issued Kew report regarding Box wood applies equally to other woods. The remarks referred to are as follows:—"The difficulty of transit from the mountains to the seaboard appears to be the great obstacle." It is to be hoped, considering the vastness of our Indian forests, that such obstacles will in course of time be overcome.

—— CARNIVOROUS PLANTS. — Adverting to a statement in our issue for July 6 that Mr. KNIGHT, of the Chelsea Nurseries, was one of the earliest to experiment on the subject, an obliging correspondent sends us the following note, showing that THOMAS ANDREW KNIGHT also interested himself in the subject:—"As regards the experiment referred to in your number for July 6, I have frequently heard my late rector say that his great friend T. A. KNIGHT told him he once selected two plants of Dionæa muscipula, as nearly as possible of the same size, and placed them side by side, one fed with raw beef, the other left alone. The one fed grew more luxuriantly than the other."

—— CHANGE OF CLIMATE.—Our readers will remember the discussion raised by Mr. MCNAB as to the deterioration of the climate of Scotland, a deterioration not marked in the meteorological registers, and to which was attributed the falling off in the quantity and quality of fruit in various districts. This however must be attributed to other causes. It is curious, however, to find that the same idea is prevalent in Belgium. In the neighbourhood of Tournai, we are told by the *Bulletin d'Arboriculture*, the Vine was formerly cultivated in vineyards, the name of which remains though the Vines are now only grown against walls. In proof of this statement some historical details are given, showing the low price of the wine of Tournai in 965, owing to the abundant produce of the vineyards. Other information is given as to the taxes raised on the wine in 1290, 1315, 1441, 1531, 1546. In 1609 the wines of Tournai were offered to Viscount D'AYRE on his way to marry the daughter of the governor; and it is further stated that the wine was of such quality as only to be presented to the Knights of the Golden Fleece, the governors of provinces, and to princes, and foreign grandees visiting Tournai. Now-a-days Chasselas Grapes alone are grown against walls in Tournai, and have been much

esteemed since the time that Louis XIV. declined to eat other Grapes than the Chasselas of Tournai. The mere fact, however, that it is no longer found profitable to cultivate vineyards at Tournai, is by no means conclusive of any deterioration of climate. Doubtless, if it were worth while to do so, as good wine could be made now at Tournai as heretofore.

—— Pine Growing by Smoke.—M. Ernest do Canto, in a recent number of the *Illustration Horticole*, tells us how in the Azore Isles where, as is well known, they grow winter Pines largely for the English market, it has been found that smoke hastens the production of flowers. The advantage of bottom heat is acknowledged, but as this demands houses specially constructed and these do not exist, portable stoves are used, and it is observed that whenever the smoke escapes into the house the flowering process takes place in about a fortnight. So efficacious is this exposure to smoke that not only do plants of proper age bloom, but also young suckers only just rooted, as well as Rose cuttings. Having observed this, the Pine growers now practise it regularly by burning a little straw or some shavings in the Pine stoves for two or three days. We should like to receive further details as to this process from some of our correspondents in the Azores.

—— Professor Reichenbach.—We are requested to announce that Professor Reichenbach's address for the next four weeks will be at the Herbarium, Royal Gardens, Kew.

—— Arctic Wheat.—Dr. Schomburgk narrates in his report on the Adelaide Botanic Gardens, that he received a sample of Wheat taken from a quantity left by the American Arctic Expedition ship *Polaris* in 1871, which had been abandoned in north latitude 81° 16′. This Wheat had been left on the beach, exposed to the snow and a temperature of 72° to 104° of frost for five years, and was found in a heap by Dr. Ninnis, of H.M. ship *Discovery*, on the return of the last Arctic Expedition to England. Dr. Schomburgk sowed about 300. Of the 300 grains about sixty germinated. The plants grew healthy, and reached to the height of from 3 to 4 feet. It is a bearded Wheat, and ripened in the commencement of January. The ears contained about thirty grains each, which were but small, though round and plump.

—— Gustav Wallis.—We regret to have to announce the death of the well-known horticultural traveller, M. Gustav Wallis, of Detmond. Several letters from M. Edward Klaboch state that Wallis died on June 20 in the hospital at Cuenca.

—— The Dering Woods.—Every passenger by the South-Eastern Railway to Dover, as he nears Ashford, must have noticed the splendid woods to the right hand of the traveller as he faces the engine. A description of these woods is given in the June number of the *Journal of Forestry*. It is easy to see at a glance that these woods are well managed, and that their beauty is beyond average; but we should have been glad if some notion of the expenditure had been given, and of the return obtained for invested capital. The woods are mixed plantations, with fine avenues cut through in various directions, and bordered with Deodars, evergreen Oaks, Silver Firs, &c. A coloured plan is given with the description.

—— Sweet Pea "Butterfly."—This charming novelty was distributed by Messrs. Sutton & Sons of Reading. The flowers are white, with a kind of narrow beaded margin of pale azure-blue, which is also slightly suffused over a portion of the petals. It is a decided acquisition to the Sweet Peas, having a well-marked distinctness of aspect, of a peculiarly delicate character. It is probably a sport from the white form, fixed and perpetuated by careful selection. It is all the more valuable, because there is among Sweet Peas a larger proportion of heavy than of light colours; though all are beautiful and richly fragrant.

—— Cool Orchids.—We are informed that Mr. Horsman has just returned from a collecting trip amongst the cool mountain ranges of the higher parts of Colombia, on behalf of the New Plant Company, Colchester, and that he has brought with him a large collection of Orchids, several new bulbs, especially a new double Amaryllis, and many other things.

—— Pruning.—We extract from the *Indian Forester* the following summary of the effects of pruning on the growth and shape of trees:—

1. Pruning, in as far as it diminishes the leaf power of a tree, must retard its growth.

2. There is a constant struggle to make good this loss, which is therefore only temporary. The branches cut lower down are replaced by the lateral expansion of the upper branches.

3. The loss in consequence of pruning is not great, for even if the whole portion, representing one-third of the foliage, be removed, the leaf power of the tree will only be diminished by one-seventh part; whilst if the top portion of the leaf canopy, representing an equal surface of foliage is removed, the leaf power will be reduced by more than one-half; and as the lower branches and leaves are replaced higher up and in a more favourable position, a less quantity of new leaves will suffice to restore the leaf-power of the tree.

4. Pruning produces not only a larger piece of timber, but also causes it to assume a more desirable shape, and to approach more and more to the figure of the paraboloid, whilst a low branching tree may be even less full-wooded than a cone.

—— A third edition of Mr. Sergeant Cox's *Letters to a Late Student on the Arts of Writing, Reading, and Speaking* has been issued (Cox, 10, Wellington Street). These letters abound in sound common sense, and are replete with practical hints. Though originally addressed to law students in particular they will prove very serviceable to all who have to put pen to paper, read a paragraph aloud, or utter a few words in public.

—— Gardening Changes.—We hear that Mr. J. Weatherston has resigned his position as gardener to Sir H. J. Brydges, Bart., at Boultibrook, near Presteign, Radnorshire, and that he has been succeeded by Mr. Henry Thomas.

GRAMMATOPHYLLUM SPECIOSUM.

A figure of this grand epiphyte—which has been called the queen of Orchids, appears on p. 181. The Grammatophyllums are allied to Cymbidium, differing in certain details of the column and pollen masses. The genus was established by Blume for the plant now under notice, which was originally figured by him in the *Rumphia* (iv., 47, t. 191). It inhabits Java and the other islands of the Indian Archipelago, as well as Cochin China; and Dr. Lindley mentions having had specimens found by Griffith in the Straits of Malacca with a scape 6 feet high and an inch diameter at the base.

In this country the Grammatophyllum speciosum, which is recorded to have been introduced in 1837, was first flowered in 1851 by Mr. Loddiges, of Hackney, the blossoms being, however, small and for the most part developed in a monstrous state. The figure in Paxton's *Flower Garden*, t. 69, was made up from this source. A much finer specimen was bloomed in October, 1859, in the collection of W. G. Farmer, Esq., of Nonsuch Park, Ewell, under the care of Mr. Carson, who was well known, in his day, as a first-rate plant grower. In this specimen the stems were from 9 to 10 feet high, and the scape 6 feet long, growing from the base of the stem. In this case the expanded leathery flowers were nearly 6 inches across, several being produced on the scape. The sepals and petals are bluntly obovate-oblong, undulated, rich golden-yellow, thickly dotted with short oblong spots of reddish-purple; the lip is comparatively small, three-lobed, streaked with red, the side lobes convolute over the column. The stems bear a few large appressed scales at the base, above which they are furnished with the distichous leaves, which are lorate, acute, coriaceo-membranaceous, and from 1½ to 2 feet long. The red streaks on the disc of the lip are ciliated.

Grammatophyllum speciosum was also well flowered some years since by Mr. Scott, while gardener to Sir G. Staunton, at Leigh Park, where also another noble and rarely seen Orchid, Cyrtopodium punctatum, was flowered many years since, and exhibited at one of the Regent's Park shows.

In the wild state the stems, according to Blume, grow from 2 to 3 feet high, and from 1 inch to 1½ inch in diameter, towards the top closely loaded with leaves, which are distichous and equitant, curved backwards, smooth and shining, with a central rib channelled on the upper side, and bluntly protuberant beneath. The scape springs directly from the base of the leaf stem, grown from 5 to 6 feet high, and bears a profusion of flowers for about half its length, each flower standing on a curved stalk about 3 inches long, and having the same or a greater diameter.

The plant is one of large growth, as the foregoing particulars indicate, and can only be accommodated when there is ample space. Nevertheless so noble an object is well worthy of being grown where suitable accommodation exists. It requires the temperature of the East India house, and to be encouraged to make a few strong growths, after which they should have a decided resting period. They are best grown in peat soil, in large well-drained pots, and should be liberally watered in the growing season.

M. Van Volxem, writing in these columns on May 11 last, mentions having seen this species in Manilla growing on the highest forks of the trees fully exposed to the light, moisture being amply provided from the brackish Mangrove swamp.

THE ISLAND OF CYPRUS.

(*Concluded from p.* 107.)

Agriculture and Horticulture.

The condition of agriculture is undoubtedly as bad as it can be, and many years must elapse before any general improvement can be effected, even supposing measures are promply taken with that object. The soil is merely scratched on the surface previous to sowing the seed, and such a thing as manuring is unknown, or at least never practised. The tools and implements are almost exactly of the same pattern as those in use in Egypt. Fresh land is of course more productive than land that has been under cultivation without manure for a long time, consequently the forests have been sacrificed to obtain fresh land. Even now it is the practice to burn the brushwood and herbage; and the fires often extend to the remains of the forest, causing great damage. The evils attending the destruction of the forests are manifold, to say nothing of the dearth of timber and firewood.

The copious rains of winter are carried away to the sea, or evaporate very quickly, and sudden heavy rains cause floods, as there is nothing to hold the water back. Wheat, Barley, and Oats are cultivated—Barley chiefly, as it ripens before the Wheat, and thus escapes the locusts more than Wheat. Several leguminous plants are cultivated, as Ervum Ervilia, E. Lens, Lathyrus Ochrus, Vicia Faba, and Cicer arietinum; the first is generally esteemed, and, as it will grow in almost any soil, it is much more extensively cultivated than any of the others. Cotton, Madder, Tobacco, Flax, and Hemp, are grown on a very small scale. It is estimated that the annual export of cotton during the Venetian dominion was 30,000 bales, and this had dwindled down to 3000 bales in 1865. Cyprian Madder has a great reputation, being surpassed only by Smyrnian. Unger gives the quantity exported as about 90 tons. Formerly the sugar-cane was extensively cultivated; but in Unger's time it was not to be found on the island. The Potato is restricted to the mountainous region, but in the lowlands Colocasia antiquorum is cultivated instead, and affords no inconsiderable proportion of the food of the islanders. Tobacco is not grown in sufficient quantity to meet the wants of the inhabitants. Gourds, Melons, and Cucumbers, Water Melons, and Calabashes, are common, especially Water Melons, which are very refreshing during the hot season. Another Cucurbitacea, the Colocynth, is actually an article of commerce. Here we may mention Resina Ladani, a resin collected by goats when browsing amongst Cistus creticus. It collects on the goats' beards, and these when full are shaven off. The collecting of the resin is apparently left entirely to the goats. The cultivation of vegetables in the sense we understand it is not practised at all, although Cabbage, Artichokes, Asparagus, and Cress (Lepidium sativum), grow wild in the island. It is only on the tables of the wealthy that any variety of vegetable is seen—the poorer class content themselves with the shoots of the wild Asparagus verticillatus, Capers, Cress, Purslane, Samphire, and "other hay and straw." As for pleasure-gardening, except in some of the principal towns, and perhaps some of the monasteries, it is a thing unknown. There were, however, some pleasant gardens in Larnaca when Clarke visited the island. He says (vol. ii., p. 340): "The gardens of Larnaca are very beautiful, and constitute the only source of

delight the women of the place seem to possess. They are, however, no ornament to the town, being enclosed by high walls. Almost every house has its garden; the shade and verdure thus afforded is a delightful contrast to the glare of a white and dusty soil everywhere observed around. In these gardens we noticed two sorts of Jasmine, one common in European countries, and the other derived from Syria; the double-blossomed Pomegranate, a most beautiful shrub; also Lemons, Oranges, Plums, and Apricots. The Phaseolus Caracalla, kept in the greenhouses of the seraglio gardens at Constantinople, flourished here in the open air. They had also the Arbutus Andrachne, growing to an enormous size." Unger once saw Calendula officinalis growing in a pot, and Balsamita vulgaris, Artemisia Abrotanum, A. Absinthium, and A. Santolina, as well as Iris florentina, Roses, and Jasmine, and Melia Azedarach are the only ornamental plants met with here and there. It is worthy of note that the three first are employed in Cyprus, as in Central Europe, to adorn the bride at the wedding and the corpse before it is interred. Some of the Turkish graveyards, as that of Scarpho, were planted with Iris sepulchorum.

Grape Culture.

Of all the branches of husbandry Grape growing is the most important on the island. Not only is sufficient wine made for the inhabitants, but it is one of the principal articles of export. The Grape Vine succeeds in all parts of the island, from the sea-level to an elevation of upwards of 4000 feet; but it is in the southern and south-eastern region of the Troodos and Machera Mountain system where it is most planted and where the best vintages are secured. Here the Vine flourishes on the steepest declivities, and in fact in almost any situation. Unger observes that, if it were desirable, the whole island might be transformed into a vast vineyard. Of course, no manure is used in the vineyards any more than elsewhere, for whence would it come? And the canes here, as in Greece and Syria, have no supports, because the material does not exist in the island. Cyprian wine is celebrated in history, and Unger states that the wine found in every village is of excellent quality; even the commonest kinds are good. The Commandeira wine is dark red, or almost black, when young, but with age it becomes lighter, and eventually has a brownish-yellow hue. A vintage fifty years old was dark brown, and rather bitter, but excessively fiery, and not without bouquet. The natives are very moderate in the use of wine, which was extremely cheap, and so abundant that considerable quantities were distilled for brandy.

The Olive.

This tree is certainly not indigenous to the island, though frequently found in a wild state. It is cultivated all over the island, occasionally up to an elevation of 3500 feet, and it grows in the driest rocky places, but thrives much better near springs. The Olive gardens of Kitti, Moni, Colossi, Episcopi, Lapithus, Bellapais, Kythræa, &c., are extensive, and contain fine old trees, some of which must be several centuries old. Amongst the numerous varieties, those of the last-named place are highly esteemed on account of their large size. The Olive is the favourite fruit of the islanders, and is within the reach of the poorest. During the fast the Greeks eat nothing else, except a little bread. Besides the consumption as food, an immense quantity is used in the thousands and thousands of lamps kept burning to the glory of numerous saints. Not the least care is taken of the trees; and if they were not very tough and tenacious of life, and able to live under hard conditions and take care of themselves, they would be destroyed by bad treatment. Not a drop of olive oil is exported, although it might certainly form a profitable article, considering the productiveness of the country.

Ceratonia siliqua.

The Carob tree is spread all over Cyprus, ascending to an altitude of 2000 feet. In the mountains it is only shrubby, but in the plains it often grows to a large size. Clarke states that it is sometimes as large as the Oak in England. Cultivated trees are all grafted, the operation not being performed until the trees are of considerable size. Carob plantations are most numerous and extensive on the south coast between Mazoto and Limasol, and also in the district between Keryneia and Lapithus. The Carobs are mostly shipped to Trieste, where a spirit is prepared from them. In 1853 the exports reached close upon 4500 tons.

Fruit Trees.

Once there were 800 small orchards in the neighbourhood of Sergios, near Famagosta, and now there are scarcely twenty. The trees in these and all other orchards of the island are Fig, Orange, Lemon, Pomegranate, Almond, Walnut, Cherry, Apple, Pear, and Medlar. The commonest and most generally diffused are Fig trees, which, with Orange, Citron, and Mulberry trees, constitute the bulk of the orchards. Opuntia, Atriplex Halimus, and Tamarisk, are planted for hedges. The Figs are rather poor in quality; but the Oranges and Lemons are excellent, though unfortunately not plentiful. Peaches and Apricots are also grown. Of the former there are only inferior varieties, and the small early Massafranci has the reputation of favouring dysentery. The Apricots, on the other hand, are better. Apples, Pears, Plums, and Cherries are all very poor, the climate being too hot for them. The stately Date Palm must not be forgotten. This is the Mussulman's favourite, and is found wherever there are Turks; but it does not fully ripen its fruit. It adds, however, greatly to the embellishment of the towns and villages. Morus alba is grown for rearing silkworms, but the silk industry, like most others, has been crushed by exacting imposts.

Locusts.

Some seasons the locusts devour almost every green thing, and every season they are troublesome. The peasants hasten to harvest their crops even before they are quite ripe, in order to escape the ravages of these dreaded insects, which often appear in myriads. It is remarkable that the insect that devastates the island is not the same as that which is the enemy of the husbandman in Syria, though the latter also occurs in Cyprus. Stauronotus cruciatus is apparently the only kind of locust that crosses the island in swarms, clearing everything before it. Unger and Kotschy collected the following orthoptera, which are all herbivorous insects:—Decticus albifrons, Acridium tartaricum, Stauronotus cruciatus, Locusta viridissima, Pocthetis Rauliniana, Gryllus capensis, Periplaneta orientalis, Heterogamia ægyptiaca, Forficula auricularia, Gryllotalpa vulgaris, Gryllus burdigalensis, Odontura sp. n., and Tryxalis unguiculata.

With this we must conclude, merely reminding the reader that the work to which we are indebted for the bulk of the foregoing observations, contains much other interesting matter, both historical and scientific, including lists of the lower cryptogams, mammals, birds, insects, &c. *W. B. Hemsley.*

DESIRABLE HARDY SHRUBS.

To those interested in trees and shrubs of an ornamental character the nurseries of Messrs. J. Veitch & Sons at Coombe Wood are at all times worthy of a visit. The avenue of alternate specimens of Wellingtonia gigantea and Araucaria imbricata has a very imposing effect; the trees are very vigorous and well furnished; many specimens of the latter I believe were furnished with cones, but at the time of my visit they had been gathered, as they have a tendency to exhaust the trees. For one thing these nurseries are celebrated, and that is, the collections of hardy trees, shrubs, and Coniferæ, from Japan.

The late Mr. John Gould Veitch was singularly successful in obtaining many good things during his explorations in that mysterious land, and the firm have added considerably to the treasures collected by him. It is not only good policy of any firm, but they are also conferring a boon on the country by adding to the lists of hardy things suitable to the adornment of our parks and shrubberies. I would not say one word derogatory of the introduction of any desirable plants, but we have certainly been overdone in some directions with new tender foliage plants lately, which have been introduced to our stoves to the exclusion of older and better things, and the sale of such plants has been aggravated by the unhealthy stimulant of offering tempting prizes to the purchasers of them. I know for a fact that quantities of weedy-looking things are purchased at a high price, and are discarded after being grown for a year or two. Our stoves are limited in number and size, but our parks are large, and you never hear of new hardy shrubs being discarded.

I noticed the following as being very distinct and desirable shrubs, suitable for even the smallest gardens. Olearia Haastii, which was recently exhibited at one of the fortnightly meetings at South Kensington, and described at the time in this paper, was finely in flower, and the effect of large masses of it, either near at hand or at a distance, was much finer than could be conceived by seeing a small basket of it. The deep green leaves and compact habit of the plants show to advantage the profusion of white flowers. Escallonia Phillipiana, even more recently described and figured, was a novel feature in the long border, and my attention was drawn to the fact that, in addition to its other good qualities, the flowers are sweet-scented.

Hypericum oblongifolium is quite a shrub, from 2 to 3 feet in height, and, as far as my experience goes, is certainly the finest of the genus. The plant was well clothed with bunches of golden flowers, a succession of which is kept up for at least three months, and reminding one of the beautiful Fremontia californica. H. patulum was also in flower; it is of a more dwarf sub-trailing habit, with smaller flowers, which were not quite so freely produced.

A group of Acer polymorphum dissectum had quite a charming effect amongst the other shrubs of a different character; the finely divided leaves are so elegant in themselves, but when you add to this the rich bronzy tinge they assume in spring, which is ever changing as the season advances, it will be seen at once that this is a tree no garden should lack. Hydrangea paniculata grandiflora was also flowering with great freedom, the plants also making good growth. This plant improves much by a closer and longer acquaintance. It is quite hardy and not particular as to soil. One of its most useful characteristics is the profusion of its pink flowers.

Eulalia japonica must also be noticed as one of the most distinct and handsome of the variegated grasses; it is Japanese, and quite hardy in the borders at Coombe. The leaves are broadly linear, handsomely and evenly striped with white; the whole plant is about 4 feet in height. The growth is very rapid, and it seems to be a plant that will accommodate itself to any class of soil or situation. *J. Douglas.*

CEREUS SWARTZII.

Good hedge plants are a desideratum in many places, but there are not many localities out of tropical or subtropical regions where such a hedge as that represented at p. 185 (fig. 37), would be possible. A glance is sufficient to show how effectually it serves its purpose, and how striking its appearance must be. The photograph from which our drawing was made was obligingly forwarded to us by Mr. Hart of Kingston, Jamaica. It represents a hedge of Cereus Swartzii, a species which, like others of its class, grows so freely under suitable conditions, that all that is necessary is to stick a fragment into the ground, when it will grow as freely as a Willow cutting here.

CACTI IN AMERICA, &c.

We have some good collections of Cacti and Agaves in the East—indeed in a few cases they are made a specialty. The finest collections I know of in Massachusetts are owned by Messrs. Ross, Forest Hills; J. C. Hovey, Cambridgeport; Hovey & Co., East Cambridge; and C. S. Sargent, Brookline; in New York by Messrs. Corning, and Menand of Albany, and a few by Kelly, of Rhinebeck; in New Jersey, by Such and Rathbun, of South Amboy, and Doey of Long Branch; and in the West (Missouri) by Shaw, of St. Louis. It is at St. Louis that Dr. Engelman, our great authority on these plants, resides.

Our climate is admirably adapted for the welfare of Cacti, of which we get many interesting and curious species from Colorado, Utah, New Mexico, Arizona, Texas, and other parts of the Far West, but unfortunately we have very few species that are hardy in New England. Opuntia vulgaris, Rafinesquei, and missouriensis are perfectly hardy, enduring our winters with impunity even without any covering. Two years ago Echinocactus Simpsoni survived the winter in our outdoor rockery, but it rotted off last winter. It was well covered with leaves both seasons.

Consignments of Western Cacti are often sold at auction in New York city, when the "homely things" seldom fetch more than a trifle; indeed I have been surprised at the number of Echinocactus polycephalus, cylindricus, and that long-spined section I saw "kicking about" the florists' greenhouses in the neighbourhood of New York. It is quite a common thing to see new and rare kinds gasping an existence about the stokeholes, out-of-the-way corners, or under the stages

of suburban greenhouses, unknown, unvalued, and uncared for; and Louis Menand showed me a little Cereus he bought (from over the boiler) for fifty cents, and on bringing it to Albany refused one hundred dollars for it.

Mr. Menand, who is a most intelligent and enthusiastic cultivator, has some of the finest and healthiest Cacti I know of, and I was particularly struck with the beauty of the little "white" Cactuses, as Echinocereus pectinatus texensis, Mammillaria senilis, M. pretiosa cristata, M. eximia, M. Mulbenphordti, M. acanthophlegma, Opuntia ferox, and many others. Mr. Menand plants out his Agaves and Opuntias in the summer-time, and lifts and pots them in the fall, wintering them in the greenhouse. He finds that Echinocactuses, Mammillarias, and better than those we kept in pots. Last summer—1877—we planted out on the terrace most of our Mammillarias, Echinocactuses, and Cereuses of the gonocanthus and Englemanni class, but with no flattering result. Yuccas planted out grew splendidly, and lifted well, and as for Opuntias and Agaves they grow enormously when planted out; besides they assume a plumpness, vigour, and colour hardly obtainable in pot-nursed plants, and they lift so well that the effect of the displacement is not noticeable. We winter most of our commoner and larger Opuntias on shelves in a dry cellar. They are not potted, but merely lifted and stored as we should Dahlia roots, with the exception that we keep them as dry as possible, turn them often, and cut out any decaying pieces and admit all the light we can, and

Mr. Clements, gardener to Mr. Rathbun, tells me that last summer they had their Stapelias planted out on a hot dry piece of ground, and that they grew splendidly, and towards fall bloomed abundantly. Just now they are planted in a row on the floor along either side of the pathway in one of the greenhouses, as we often see Selaginella Kraussiana, and the little Africans look comfortable enough.

Our hardy Sempervivums are much used in bedding, but large plants so often "bolt" that a reserve stock is always necessary. The tender species—the tree-like kinds—are not much used, but we have employed them in flower-beds with telling results.

Cotyledons of the orbiculatum, farinosum, lanceolatum, and pulverulentum type, we have been unable to grow satisfactorily in the flower-garden, notwith-

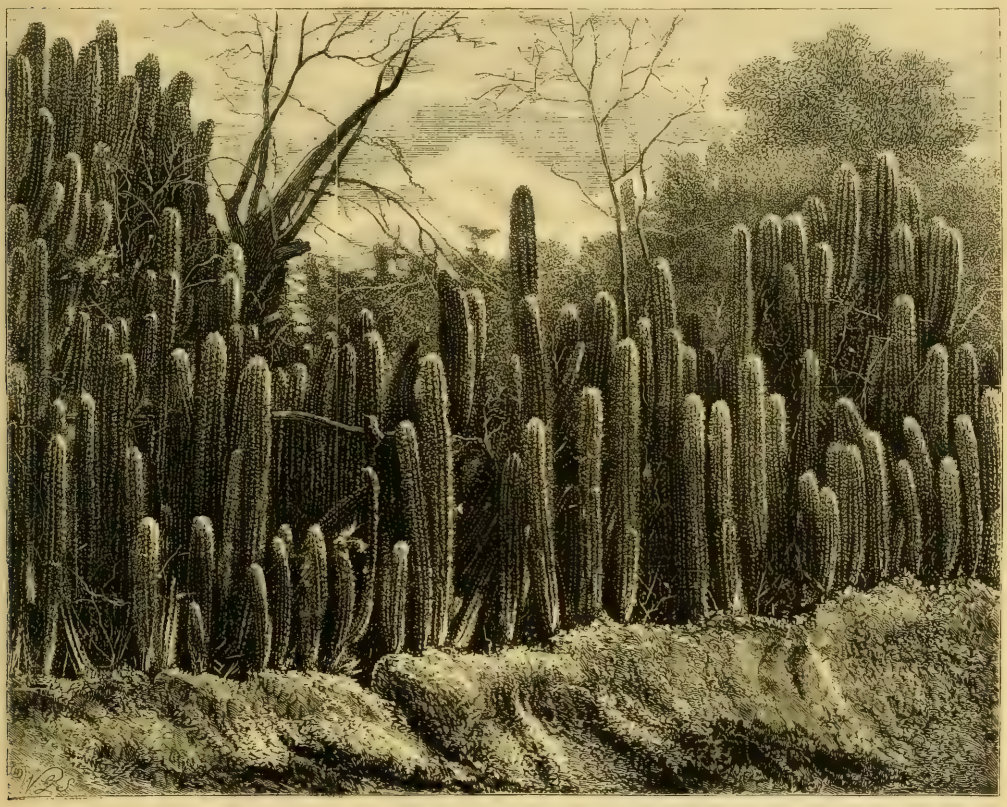


FIG. 37.—A HEDGE OF CEREUS SWARTZII IN JAMAICA. (SEE P. 184.)

somewhat similar genera, do not do very well when planted out in the open garden, consequently in May he plants them out in a cold frame. The frames are uncovered by day in the event of fine weather, but the sashes are replaced at night, and in wet weather kept on during the daytime. About an hour before closing-up time Mr. M. sprinkles his Cactuses overhead with water from a fine rose, just giving enough to wet the ground about a quarter of an inch deep. In October he lifts, repots, and transposes them to the greenhouse. So satisfactory is this method that Mr. M. assures me he "can almost see them grow."

Some growers around Boston used to plant out their Mammillarias, &c., in the garden, but last year I think most of them kept them in pots placed on boards or ashes out-of-doors or plunged in frames. In 1876 we planted out many Aloes, but they did not grow

keep the windows or ventilators open on every favourable occasion. We plant them right out from these quarters in May, and for about three weeks after they look "horrid," but towards the end of June they will have plumped up a little and begin to grow, which they do with great vigour. Euphorbias of the tall-growing species grow beautifully, and have a telling effect in the flower garden; indeed, the candelabrum-like pillars of some of these were amongst the most attractive plants I saw in the flower garden at the Botanic Gardens at Washington.

Phyllocactuses grow thriftily—fat and green when planted out—but some of my amateur neighbours assert that they don't bloom so well as those they keep in pots during the summer time. Last summer we planted out some of the tall-growing Cereuses, as jamaicensis and cylindricus, and they seemed to do pretty well.

standing the reported successes from other sources; they do not grow enough, and every rain washes so much of the "meal" off them that they look rather ghostly. In a frame, however, whereon the sashes were kept night and day all summer, we had good results. We kept the plants in pots, which were plunged in coal ashes, and the ashes we kept moist; but only three times in as many months did we water the soil in the pots. We never touched the leaves with water if we could help it, and when we brought in these plants in October they were lovely rosettes of untainted whiteness. The commoner Cotyledons (Echeverias), as pumila, secunda glauca, &c., are abundantly grown for the flower-garden, thousands of them being used for defining patterns in the "succulent bed." At one place some 16 or 18 miles from Boston is even an "Echeveria garden," a series of scroll-beds patterned with Echeverias and em-

blazoned with "coloured gravel," chopped crockery, brickbats, and minced glass of various hues an utter abomination.

As Lobelias of the Erinus type are of no use here after July, Ageratums sometimes uncertain, and the Viola cornuta and other "bedders" are of no permanent avail in the flower-garden, we want a good lasting blue, and that we have in Kleinia repens. There are several varieties of it, some not much worth, but others again as summer advances become deeper in colour and thriftier in growth, and it is always neat. *William Falconer, Botanic Gardens, Cambridge, Mass.*

Home Correspondence.

Hyacinthus candicans and Gladiolus.—This really excellent garden plant is now in full flower in our nursery, and is admired daily by the numerous visitors to our establishment. We have a large bed of the pure white flowering Hyacinth, edged by a broad border of Gladiolus Brenchleyensis, which is particularly admired. A most splendid effect has been obtained by this combination. The pure white colour of the Hyacinth makes the most striking contrast with the dark-red tint of the Gladiolus, and this grows just of that height as to enable the Hyacinth to exceed by nearly the whole length of the flower-stem the Gladiolus. We consider Hyacinthus candicans, which flowers during a period of several weeks, one of the best ornamental plants for gardens and parks, and can especially recommend the above-described arrangement. *E. H. Krelage & Son, Haarlem.*

Escallonia pulverulenta.—I send you flowers of Escallonia pulverulenta, a very distinct species, now flowering for the first time in the open air. It unfortunately is not quite hardy everywhere, but in a favourable situation on a warm wall it has stood two years. It will not compare for beauty with such sorts as E. montevidensis, but has distinct features of its own, and a perceptible Hawthorn perfume, and is a good plant for a cool house. *T. Smith, Newry.*

Verbenas, &c., at the Castle Street Nurseries, Salisbury.—The display of Verbenas and Pelargoniums of the newer and choicer varieties to be seen now and for several weeks to come is one not easily to be forgotten. The Verbena plants, as also the Pelargoniums, are planted in rows about 18 inches apart in borders in the immediate neighbourhood of the forcing-houses, in which borders, with one or two exceptions, the plants seem to luxuriate. The plants are very healthy, and the hues of the flowers most varied, from the most highly coloured crimson gradually toning down to the most chaste, soft, and delicate pink and white. The profusion of bloom, the perfectness of the trusses, the regularity in the development of and immense size of pips, some of which measure more than an inch in diameter, produce a floral display which is perfectly lovely. I give the names and descriptions of a few of those that took my fancy most. Admiration, very brilliant carmine, slightly shaded towards centre, with immense pips. Favourite, fine deep velvety crimson, with light purplish tinted eye. Boule de Neige, best pure white. Clarinda, plum colour, with white eye. Duke of Edinburgh, bright pink, with crimson ring round the eye. Miss Edwards, beautiful scarlet-pink, with much darker centre, with very small white eye. Adelina Patti, bright pink, with white ring round dark eye, immense truss. Lovely Blue, very bright blue, very sweetly scented; grand flower and strong grower. The Pelargoniums are equally good, but not so extensive in variety, but, nevertheless, the habit of the plants, the size and form of the flowers are all that could be desired in a Pelargonium, some of the colours being very attractive, among which Jennie Dodds and Fire King (in zonals) figure conspicuously, the former possessing quite a new shade of colour. Dahlias, as is well known to your readers, are not only extensively but successfully cultivated in the Castle Street Nurseries. This year the plants have made unusually fine growth. They are very healthy, and most of them are now coming into flower—flowers which for size, form, and perfect finish are simply superb. Of the Roses I need make no remark—they have spoken sufficiently well for themselves at the various metropolitan and provincial horticultural and floricultural shows during the present as in past seasons. Most of the glasshouses are filled with clean well-grown short-jointed pot Vines of the most approved kinds, which in the course of a couple of months will find their way to various and distant counties throughout the country, bearing on them the stamp of high cultural skill, redounding, as most other things cultivated in these nurseries do, to the credit of Mr. James Wyatt, the manager—who has, I understand, filled this position in these nurseries from their infancy. And with what perseverance and care he has, in connection with the late proprietor and founder (Mr. J. Keynes), tended his charge, endeavouring to carry it bravely through a "competitive trade," is well known to most of the readers of the *Gardeners' Chronicle* and other horticultural papers; and how he has succeeded in establishing the name of Keynes and the Castle Street Nurseries throughout the floricultural world, is also well known to your readers: thus rendering Salisbury as famous for its Roses as it so long has been, and justly so, for the beauty of its cathedral architecture and historical associations. *H. W. Ward.*

Madresfield Court Grape.—Last week, in looking through the houses at Wilton House gardens, Salisbury, I noticed a vinery filled with the noble Grape. The vines are, Mr. Challis informed me, all planted in the inside border. They are carrying a nice crop of regular good average-sized bunches, having good berries, which showed not the slightest sign of cracking. Mr. Challis thinks very highly of the Madresfield Court, as his having a house devoted to its special culture will testify. *H. W. W.*

Scurvy of the Sea.—Perhaps the "Scurvy of the Sea," mentioned in p. 90 by "Guernsey," is the "Scurvy-grass" (Cochlearia officinalis), a common plant on seashores, which has the antiscorbutic properties referred to by him. *J. M., Dublin.*

Carpet Bedders.—Whatever captious critics may say as to the æsthetic taste displayed in carpet-bedding, it is at least certain that, so long as gardeners or their employers, whom they aim to please, keep their beds at home for their own pleasure and gratification, and do not send them to some royal floral bedding academy for public display, they have an undoubted right to carry out this development of their own wishes without reference to the whims, fancies, or criticisms of other people. But there is another reason why carpet-bedding should exist, and even be encouraged. Nothing would more tend to the extinction of interest in garden-work than the decoration of all gardens on exactly the same pattern and upon the same dead level; and thus it is desirable to find in each good place some special feature, differing perhaps from that found elsewhere, and which at all times marks the garden in question as worthy a visit from those who admire horticultural specialities. Then, again, one place seems to be specially adapted for the display of carpet-bedding; another has features that render it out of place there; another is remarkable for its masses of mixed plants, its noble glades, its grand trees, its water scenery, and so on; and thus it is impossible to lay down any special rule for the decorative features of any garden. The most indefensible point in carpet-bedding is not in its existence, but rather in the way in which it is worked out; and, assuming that it is altogether in correct taste when done well, it is of course open to criticism when worked out in bad taste, and in a slovenly way. Such carpet-bedding is, however, rather the exception than the rule; and that so much is done well is perhaps largely due to the good examples set to the gardener-learners in these things in our public parks, the Crystal Palace, and in a few of the best private gardens. It is often a matter of complaint against employers that they send their gardeners to these large places to study the designs there worked out, and bid them endeavour to reproduce them in their smaller gardens at home. Such an attempt is sure to lead to failure. That such might be the case if a literal reproduction were attempted there can be little doubt, as it is not unfrequently the case that large designs, however admirably worked out, can hardly be suited for small beds, and that the effect when worked out in a small scale is lost. This is so far true that it is perhaps unwise to attempt any more slavish copying, as it encourages no artistic efforts upon the part of the gardener. An intelligent student would rather note, first, what most telling effects were produced by certain plants, and how combined; and second, what kinds of plants generally were most useful, and, as a rule, the most successful carpet-bedders. By getting well posted in these features a man must indeed be an indifferent designer if he proved incapable of working out within the sphere of his own labour something that should be good, tasteful, effective, and should command the admiration not only of his own employers, but also of their numerous friends and visitors. Designs, however effective on paper, are admired more or less just as the tastes of the gardener may vary, but there can be little or no difference of opinion as to the most useful plants for carpet bedding. In these distinct and clearly-defined lines are essential, as in working out effective designs good contrasts must be had; greens, blues, reds, yellows, whites and greys, form the most common colours of carpet plants, and in these there is a further divergent range of tint according to kind, whilst to this is added variety in habit and growth, but all of that close, dense, compact character, without which no good carpet would be possible. Certain plants present special features for the production of dividing lines or for the working out of the skeleton design prior to the ultimate filling in. Of these Golden Feather, dwarf blue Lobelia, Mentha Pulegium gibraltarica, and Echeveria secunda glauca are specially good, as they present distinctive, well-marked colours allied to reliable habits for the production of lines. Then for the filling in of broad spaces the various dense growing Sedums, such as Lydium, green; hispanicum, grey; and acre elegans, creamy yellow; the variegated Mesembryanthemum, Alternantheras in shades of red, yellow Chickweed, other Lobelias for blue, &c., afford an abundance of material for the designer's selection. There are few of these that have not that natural evenness of growth so essential in the maintenance of uniformity in the design. Perhaps the most troublesome to keep in check is the Golden Feather, which needs much pinching, as in the good soil of flower beds it finds encouragement to grow robust. The new laciniated variety, although a little dwarfer, is only just so, whilst it largely lacks the rich golden tint of the old kind. A new selection from the first named variety that gives all its denseness of leafage and richness of colour with a very dwarf compact habit has just presented itself, and this, if proved to be reliable, will doubtless become the most suitable yellow foliage bedder. Carpet bedding is subject to the charge of flatness whilst unrelieved by the introduction into it of a few taller plants, as may suit the taste of the gardener. These are found in abundance in some of the hardier Dracænas, dwarf Thistles, large Echeverias, Sempervivums, Pachyphytons, small Agaves, &c., and many other things that may be to hand, provided they do not present unharmonious features, and preserve form and foliage in perfection throughout the season. *A. D.*

The Best Kept Gardens.—Will "M." allow me to supplement his excellent report of the Marlborough horticultural show, with a short note of one class in the schedule which was judged in the week before the show. The class was "for gentlemen's gardens in Marlborough and Preshute." "For the best kept kitchen and flower garden showing superior cultivation in all departments, with a certificate of merit" [glass excluded.] The gardeners of seven masters competed, the gardens were very well kept; those gaining 1st and 2d prizes were admirable, and the 3d not only thoroughly well kept, but with an interesting collection of alpine and herbaceous plants. It was very pleasant to see at a great public school evidence everywhere of the increased taste for gardening which has happily so greatly developed itself of late years in this country. *George F. Wilson, Heatherbank, Weybridge.*

Fumigators.—Some of your correspondents would perhaps kindly give their experience of a want which I and doubtless many often feel, viz., that of an efficient fumigating apparatus, for all that I have seen or tried lead me to infer that we have not yet attained the acme. Tobacco paper, perhaps the most economical, effective, and generally used article, always more or less moist, will not burn satisfactory without a handful of live coals or (better still) charcoal to kindle it—the largest size of those in use emitting so small a volume of smoke that I find it impossible to do the work effectually, so shall *pro tem.* resort to a sieve or wire basket involving of course the presence of the operator. Tebbs' is a neat strong apparatus, but difficult to kindle as per directions; and the largest size far too small to fumigate a medium-sized house effectually. *E. K., Carton.*

The Potato Disease.—The reports with respect to the general appearance of the Potato crop, now so freely furnished, point to the conclusion, that so far the disease has been more destructive in the Southern or earlier districts than in Northern ones; indeed, in carefully scanning the reports it was easy to perceive that the more northerly they became in locality the more glowing the accounts of the Potato crop. Is this difference to be ascribed to the disease having expended its force this year in the Southern localities, or does it arise because the fungus is but slowly travelling northwards, and has therefore not yet reached the most remote Potato fields? It is a commonly observed fact that the disease does not appear in a destructive form in any crop until that sort has attained to a certain degree of maturity. Does, therefore, the fact that Potatos in the South are earlier matured, point to the conclusion that the disease will appear in the North in due time? I trust not, and hope the worst mischief it can accomplish is past; but if the heavy rains that have fallen here within the last few days have been general, there can be little doubt but that a much wider spreading of the dreaded fungus amongst the late kinds will take place. Of all this however we shall hear in

good time; but meanwhile it is eminently satisfactory to hear that, so far as at present the Potato crops in the great northern fields are concerned, they look well and healthy. I have here just now a somewhat curious contrast outdoors—except in some of the latest kinds scarcely a green leaf. Within doors there is growing in a soil-bed, in a roomy span-roofed house, a lot of seedling Potatos, of which the foliage is as green and luxuriant as could be desired. Except just to mark the exception where drip gets in, there is here and there a spot or two, but as showing the general effects of protection from outside influences the result is conclusive. *Alex. Dean, Bedfont.*

Disa grandiflora.—As accuracy is of the utmost importance, permit me to correct the following sentence (see p. 154, col. *b*):—"The labellum, however, is beautifully reticulated with bold crimson-purple lines on a whitish ground." It ought to read the "dorsal sepal," instead of the "labellum." This dorsal sepal, which is of scoop form, with a very prominent keel, is the most beautiful limb of the flower, and envelopes the two inferior petals, which are in the form of a Chinese sandal, and between which the awl-like labellum is situated. The flower is as extraordinary in its details as it is captivating as a whole. Pity it is not generally in better cultivation. Possibly Mr. Speed might let us know how he manages it so well. *James Anderson, Meadowbank.* [Mr. Bull's D. Barelii was sold at Stevens' rooms in 1872, not 1874. Eds.]

Reports of Societies.

Royal Horticultural: *Aug.* 6.—W. Haughton, Esq., in the chair. The Assistant-Secretary, Mr. Jennings, having read the awards of the committees, and called attention to a few of the more prominent objects of interest exhibited, proceeded to make a few remarks on tuberous Begonias, the special feature of that day's meeting. Begonias, so named in honour of Michael Begon, a Frenchman, originally consisted of ornamental-leaved plants, sometimes called Elephant's Ears, but now included two divisions or classes—one fine-foliaged and two floral, or as they are most generally termed tuberous-rooted. The original plants of the latter race came from South America, whence they were first introduced by the Messrs. Veitch, through their traveller Pearce. The first to arrive was B. Veitchii, a stemless species with conspicuous flowers, thrown well above the little tuft of round leaves. Then came B. roseflora, which specifically differs only in colour from B. Veitchii. This was followed by B. boliviensis, a very distinct plant with a fine erect, branching habit, and richly coloured flowers; by B. Pearcei, similar in habit to the last-named, but having yellow flowers; and lastly by B. Davisii, a very dwarf species of the Veitchii type. These are the materials on which hybridists have been working, and a very great improvement has been brought about by the judicious crossing that they have been submitted to. M. Lemoine, of Nancy, had raised many interesting hybrids, and amongst them some with partly double flowers. This is, of course, not the natural habit of the plant, but a monstrosity, in which the stamens have developed into petals, more or less perfectly. The true form of the Begonia is recognised in the staminate flowers with four petals, and the pistillate with five, though this is by no means constant, as an examination would prove. The tubers were very small, and required only to be potted in April and grown on without forcing for planting out in May, from which time they will flower in the open air until November, or they may be lifted in September and transferred to pots for house decoration. They like a light sandy friable loam, and are very impatient of damp. In a suitable soil and a well sheltered situation they are hardy enough to withstand the rigours of an ordinary winter. When they are cut down water should be withheld for about three weeks, when they will again commence to grow if so desired.

Fruit Committee.—John Lee, Esq., in the chair. Mr. William Thomson, of Clovenfords, sent a remarkably fine bunch of the Duke of Buccleuch Grape, weighing 2 lb. 14 oz., perfect in shape, with very large berries, and free from spot or blemish of any kind. A Cultural Commendation was awarded. Messrs. Charles Lee & Son, Hammersmith, received a vote of thanks for a capital sample of the ripe fruit of the Lawton Blackberry, an excellent American variety for garden cultivation. Mr. Sidney Ford, gr. to W. E. Hubbard, Esq., Leonardslee, Horsham, showed a collection of Potatos, about three dozen sorts, represented by fair-sized, clean, and well-grown tubers—a capital display for the time, which was awarded a Silver Knightian Medal. From the Chiswick Garden came a well-grown and very interesting collection of Drumhead Cabbages, to which a Cultural Commendation was awarded; and good samples of the Trebons Onion, Vick's Criterion Tomato, and the Ascot Citronelle Grape, a small, white, round-berried variety, of fine flavour.

Floral Committee.—Dr. Denny in the chair. The special feature of this meeting was the large display of tuberous-rooted Begonias, contributed by the Chiswick Garden; Messrs. John Laing & Co., Messrs. Hooper & Co., and Messrs. Veitch & Sons. By far the largest collection came from Chiswick. It included well-grown plants of most of the leading Continental varieties, and a very large batch of seedlings, which if it contained nothing very striking, at least illustrated their usefulness as decorative plants. Messrs. John Laing & Co. received a Gold Medal for a magnificent group of seedlings, of the present year's raising, which show an advance in the range of colours, and a decided improvement in the form and substance of the flowers. Some of them were named, and amongst these the most noteworthy for their fine quality were Mrs. H. J. Elwes, a good white, of excellent shape and rare texture; Thomas Bell, the most perfect in form as a florist's flower that has yet been shown, being perfectly circular in outline, measuring 2¼ inches across, with petals of the substance of leather. The only fault was to be found in its colour, a dingy shade of yellow, but having got the shape, that can easily be corrected in another generation of seedlings. Sir Trevor Lawrence is a fine dark crimson; the Marquis of Salisbury, a full deep rosy crimson; and Viscountess Cranbrook, soft rose, a very pleasing variation in colour. The most striking of all was Mrs. Dr. Todd, a rich lustrous crimson in colour, with finely-formed flowers, freely produced, and thrown well above the foliage. This was awarded a First-class Certificate, and well deserved it. Messrs. Laing & Co. also showed a seedling of the Boliviensis type, grown as a basket plant, and most amply illustrating the high value of this section for that kind of decoration. Messrs. James Veitch & Sons contributed flowering plants of the species from which these garden hybrids have sprung, such as B. Veitchii, B. roseflora, and B. Davisii, together with the fine Queen of the Whites, the dark crimson-flowered Mrs. Charles Scorer, and a very diminutive variety, no doubt a seedling from the charming little B. Davisii, named Mrs. Arthur Potts, which has dark blood-red flowers—quite a little gem in its way. Messrs. Veitch & Sons also sent several other interesting plants, to be alluded to below, and a Gold Medal was awarded to the collection. Amongst the seedlings raised at Chiswick were two varieties of great merit, one of which, named Chiswick Blush, was awarded a First-class Certificate, and the other, the Hon. Miss Bruce, well deserved, though it did not gain this honour. Chiswick Blush is a fine flesh-tinted pink flower of medium size, with a rare free flowering habit; while the Hon. Miss Bruce is a lovely cup-shaped flower, a nice shade of rose with a white centre. Lady Alfred Churchill belongs to the same type, but is of a much paler colour. From Messrs. Hooper & Co. came a group of plants, together with one of seedling Gloxinias, which gained a Silver Banksian Medal. The plants exhibited by Messrs. Veitch & Sons, in conjunction with the Begonias above alluded to, consisted of a most interesting display of Sarracenias, Droseras, and other insectivorous plants, together with a nice group of Nepenthes, which included N. Kennedyana, an interesting species insomuch as it is the first species introduced from North Australia, and thus forms the connecting link with the mainland. The same firm again showed the fine yellow Torrenia Baillonii, which gained a Botanical Commendation; and also cones of the Araucaria imbricatia, gathered from trees growing in their Coombe Wood nursery. Mr. B. S. Williams also received a Silver Banksian Medal for a capital group, which included the new Dendrobium d'Albertisii, described at p. 366, vol. ix., which was awarded a Botanical Commendation; a flowering spike, with ten blooms, of the remarkably continuous blooming new Dendrobium superbiens; the distinct oval-leaved Croton Jamesii, the showy C. Prince of Wales, the very handsome noble-leaved C. Williamsii; and a small, narrow-leaved, and highly-coloured, bushy-growing, and very distinct species, named C. camptophyllus; also the beautifully transparent-leaved Caladium, La Perle de Bresil, and a curious hybrid, between Caladium and Alocasia. Messrs. Kelway & Son, Langport, showed a grand collection of Gladioli, which was awarded a Gold Medal; and three varieties were selected for the award of First-class Certificates. These were Gorgonius, a large, soft, rosy crimson flower, feathered and spotted with a darker shade; Herois, a fine rose-pink, edged with scarlet and light in the centre; and Telamon, a pale-centred full pink, shot with crimson. Mr. R. Dean, Ranelagh Road, Ealing, exhibited a dwarf variety of the well-known Golden Feather Pyrethrum named Tom Thumb, the plants of which, as compared with Golden Feather, from seed sown at the same time last autumn, were exactly half the height. If this can be got true from seed it will be a valuable acquisition for carpet bedding. Mr. Cannell, Swanley, again sent a fine stand of cut blooms of Verbenas and Pelargoniums. Mr. Osborn, gr. to — Buchan, Esq., Southampton, exhibited a flowering plant of the yellow Odontoglossum Lindeni. This is the first time the plant has been exhibited here in bloom, though it has been known to cultivators for about seven years past. Mr. Osborn, who had tried the plant for some time in a Cattleya-house, at last succeeded in flowering it under cold treatment. It comes from Columbia, but as shown was no great beauty.

National Carnation and Picotee: *August* 3.—The exhibition of the Northern section of this Society was held in the grounds of the Royal Botanical and Horticultural Society of Manchester. This was one of the largest exhibitions ever held in the North, certainly the largest that has been held at Manchester for many years. One exhibitor brought about 200 blooms, and did not even find a place on the prize list. Of single blooms we are almost safe in saying that a larger number was never staged at one show. In such a large number of blooms there is always some pleasant excitement in finding the premium flowers. This time the high honour was awarded to the scarlet bizarre Mercury (Hextall), chosen from Mr. G. Rudd's stand of twelve dissimilar blooms, and further the flower was staged just as it was cut from the plant. Richard Gorton, Esq., also exhibited a fine bloom of Mercury, just inferior to the other; and the same exhibitor had in his stand the best crimson bizarre in the exhibition—Rifleman (Wood); this is a fine constant variety. The Leeds strain of Lord Milton (Ely), C. B., was shown in fine colour. Mr. Pohlman exhibited a fine sport from Lord Milton, a rose-flake, which shows considerable promise. Mr. Ben Simonite, of Sheffield, was not up to his usual high standard, although he exhibited some very fine seedlings, notably a scarlet bizarre, which is destined to take a high position if he can get stock of it. He had also a very good purple-flake, also a scarlet-flake of considerable refinement. We did not expect Mr. Simonite to stand very high, as he had written to say "This is the worst season I have ever had; the north-east wind destroyed the blooms as they opened; smoke with all its accompanying evils has done its worst." Mr. Booth, of Failsworth, exhibited an even lot of blooms. He brought up some good scarlet bizarres, such as Lord Napier, Admiral Curzon, and Sir Joseph Paxton. Mr. Booth, R. Gorton, Esq., and Mr. R. Lord exhibited very good Picotees. Mr. Booth's stand was composed of fresh medium-sized blooms. Medina, Hy.P.; Mary, L.P.; and Zerlina, Hy.P., were very fine. Mr. Gorton had a very fine bloom of the Hy.P.P. Mrs. Fuller. Mr. G. Rudd had Thomas William, L.R., very fine; the best in its class. One feature lacking at the Northern show was the plants in pots. It is very desirable that they should be exhibited in pots, and the committee might stipulate that they should be exhibited without cards. As usual, all the blooms in the show were exhibited on cards, and however much this may be objected to by some, it is certain that they must be exhibited in that way until a better has been discovered. It is very easy to criticise in such matters, for doth not the poet say—

> "A man must serve his time to every trade
> Save censure—critics all are ready made."

The following are the judges' awards:—

Carnations: For twelve blooms, distinct, Mr. G. Rudd, Undercliffe, Bradford, was 1st with Mercury, S.B.; this flower gained premium; Sybil, R.T.; J. D. Hextall, C.B.; Juno, P.P.; Spofforth, S.F.; James Douglas, P.F.; Clipper, S.F.; Mars, S.B.; Sarah Payne, P. and P. B.; Garibaldi, S. B.; John Keet, R. F.; John Harland, C.B.—a fine stand of flowers, even in size and very fresh. Mr. Jonathan Booth, Pole Lane, Failsworth, Manchester, was 2d, he had amongst others good blooms of James Cheetham, S.F.; Earl of Wilton, P.F.; William Harland, S.F.; Lord Napier, S.B.; Mrs. Hurst, R.F., and Splendour, S.F.; this was also a very good stand. Mr. Ben Simonite, Rough Bank, Sheffield, was 3d with a stand mostly seedlings of his own. 4th, Mr. R. Lord, Hole Bottom, Todmorden. 5th, Mr. John Beswick, Middleton, Manchester.

For twelve Carnations, nine, distinct, Richard Gorton, Esq., Eccles, near Manchester, was 1st, with Mercury, C.B.; Rose of Stapleford, R.F.; Mr. Battersby, S.F.; Albion's Pride, C.B.; Fanny Gardiner, S.B.; Rifleman, C.B.; Clipper, S.F.; Graceless Tom, C.B.; Juno, P.P.; and Sir Joseph Paxton, S.B. This was a very fine stand, Rifleman and Graceless Tom being superb. 2d, Mr. John Fletcher, North Brierly, Bradford: he had good blooms of Admiral Curzon, S.B.; Sportsman, S.F., and Mars, S.B. Mr. T. Mellor, Ashton-under-Lyne, was 3d; Mr. Joseph Chadwick, Dukinfield, being 4th. Six Carnations, dissimilar, the 1st prize in this class went to Mr. W. Taylor, Middleton, Manchester. It was a very fine stand indeed, and contained Sportsman, S.F.; Lovely Ann, R.F.; Admiral Curzon, S.B.; Mr. Battersby, S.F.; Earl of Wilton, P.F.; and Lord Napier, S.B. Mr. E. Pohlman, Halifax, was 2d; Mr. F. Bateman, Low Moor, Chesterfield, 3d; Mr. W. Slack, Queen Street, Chesterfield, 4th; Mr. John Whittaker, Royton; Rochdale, 5th. In the classes for single blooms, scarlet bizarres: 1st, Mr. Booth, with Admiral Curzon; 2d, Mr. Lord, with the same; 3d, Mr. Booth, with Lord Napier; and 4th, with Admiral Curzon; 5th, Mr. Ben Simonite, with a seedling; 6th, Mr. G. Rudd, with Sir J. Paxton.

Crimson bizarres: 1st, Mr. Rudd, with Lord Milton; 2d, Mr. Simonite, seedling; 3d, Mr. Booth, with Captain Stott, and 4th with Lord Goderich; 5th, Mr. Rudd, Captain Stott; 6th, Mr. Booth, Eccentric Jack. Pink and purple bizarres: 1st, 2d, 3d, Mr. Booth, with Eccentric Jack and James Taylor; 4th, Mr. Rudd, with Wm. Harland; 5th and 6th, R. Gorton, Esq., with Sarah Payne. Scarlet flakes: 1st, Mr. Lord, with Clipper; 2d, Mr. Rudd, with Sportsman; 3d, Mr. Lord, with Annihilator; 4th, Mr. Booth, with a seedling; 5th, Mr. W. Taylor, with Annihilator; 6th Mr. Beswick, with James Cheetham. Rose-flakes: 1st, 2d, 3d, Mr. Rudd, with James Merryweather and Lovely Ann; 4th, Mr. W. Taylor, with Apollo; 5th, with Lovely Ann; 6th, Mr. Lord, with John Keet. Purple flakes: 1st and 2d, Mr. Lord, with Dr. Foster and Squire Meynell; 3d, Mr. G. Rudd, with Squire Meynell; 4th, Mr. Lord, with Juno; 5th and 6th, Mr. Ben Simonite, with seedlings.

Picotees: twelve dissimilar, Mr. Booth was 1st, with a very fine stand of medium-sized blooms containing J. B. Bryant, Beauty of Plumstead, light scarlet; Ada Mary, light red; Zerlina, Ethel, Mrs. Summers, Miss Horner, Brunette, Alliance, Mary, Medina, heavy purple; and Edith Dombrain. The 2d prize stand from Mr. R. Lord was a very good one, and it must have taken the judges some time to decide who would be 1st; his blooms not in the above were John Smith, Mrs. Allcroft, a superb bloom, and afterwards selected as the premium; Rev. F. D. Horner, light red; Ann Lord, Wm. Summers, Mrs. Niven, Mrs. Lord, heavy rose; Alice, and Miss Small. 3d, Mr. Simonite, with seedlings, very fine, especially one light red, in the style of Mary, light purple; 4th, Mr. Beswick; 5th, Mr. Rudd.

Twelve Picotees, nine dissimilar: R. Gorton, Esq., gained the highest prize; his flowers were in fine condition and very bright; they were Edith Dombrain, Mrs. Fuller, heavy red; Purity, heavy rose; Norfolk Beauty, Mrs. Summers, Mary, Fanny Helen, Zerlina, J. B. Bryant; 2d, Mr. Mellor; 3d, Mr. Fletcher; and 4th, Mr. Chadwick.

Six dissimilar: Mr. E. Pohlman was 1st: his stand contained Flower of the Day, a good heavy scarlet; and Minnie, light purple. 2d, Mr. W. Taylor: he had Brunette, a very heavy red, which has been fine this year, and a very pretty Mrs. Lord. 3d, F. Bateman, Esq.; 4th, Mr. W. Slack; and 5th, Mr. W. Whittaker.

In the classes for single blooms heavy red Picotees Mr. Robert Lord was 1st, 2d, 3d, and 4th, with John Smith; 5th, Mr. Simonite, with Princess of Wales; 6th, R. Gorton, Esq., with Mrs. Fuller. Light red: 1st, Mr. Lord, with Rev. F. D. Horner; 2d, 3d, 4th, 5th, and 6th, Mr. Booth, with Mrs. Summers, Mrs. Bowers, and Ada Mary. Heavy purple edges: 1st and 6th, Mr. Booth, with Alliance; 2d, Mr. Beswick, with Wm. Summers; 3d, Mr. Simonite, with Mrs. Niven; 4th, Mr. Lord, with Zerlina; 5th, Mr. Booth, with Fanny. Light purple: 1st, Mr. Simonite, with Mary; 2d, Mr. Booth, with Mary; 3d, Mr. Mellor, with Mary; 4th, Mr. Beswick, with Ann Lord; 5th, Mr. Beswick, with Mary; and 6th, with Ann Lord. Heavy rose: 1st, Mr. Simonite, with Lady Louisa; 2d, Mr. Beswick, with Bonny Jane; 3d, Mr. Lord, with Miss Horner; 4th, Mr. Booth, with Fanny Helen; 5th, Mr. Lord, with Mrs. Lord; 6th, Mr. Booth, with Fanny Helen. Light rose: 1st, Mr. Lord, with Mrs. Allcroft; 2d, Mr. Mellor, with Miss Wood; 3d, Mr. Simonite, with Miss Wood; 4th, R. Gorton, Esq., with Empress Eugénie; 5th, Mr. Beswick, with Mrs. Allcroft; 6th, Mr. Booth, with Miss Wood.

Many of the flowers in the above lists have done remarkably well in the North this year, and have not succeeded in the same way in the South. Mrs. Allcroft, for instance, did not come out well; the petals were narrow and badly arranged, while Mr. Lord's flowers of that sort were remarkably fine. The Carnation and Picotee more than any other flowers are influenced by the seasons and also by situations; certain flowers that have done well this year may be indifferent next, and flowers that have made their mark in London will not do so in Manchester the same year. For this reason it is always necessary to grow a larger number of sorts than would otherwise be required. (*From a Correspondent.*)

Weston-super-Mare and East Somerset Horticultural: *July* 31.—The exhibitions brought together annually under the auspices of this Society hold a place equal to any in the West of England, where, as in the northern division of the country, a great deal has been accomplished of late years in the shape of a marked improvement in the cultivation of the various subjects exhibited. Those who are acquainted with this beautifully situated watering-place will have noticed the uniformly neat appearance of the houses, with their nice but generally small gardens. With a view to induce an improvement in the condition of these, the Society have offered a series of prizes, amounting to about a score, for the best kept garden and the neatest arrangement of window plants, &c. The prizes were not merely offered, but the committee, in conjunction with a gentleman who takes an interest in such matters, took the means to bring the subject before the residents in a way that has been so far satisfactory that 217 competitors entered the lists; the general results of which it will not be difficult to realise. The exhibition, taken as a whole, in the even, generally superior description of the productions displayed, was in advance of any that have preceded it, which circumstance, coupled with the brilliant weather and numerous attendance, was a well-merited reward for the arduous labours of the promoters.

The open class for twelve stove and greenhouse plants, in or out of flower, was remarkably well represented, both in blooming and fine-foliage subjects with a freshness in almost all rarely met with at this comparatively late season. Mr. Tudgey, gr. to T. F. J. Williams, Esq., Henwick Grange, Worcester, took 1st, showing beautifully bloomed specimens of Dipladenia amabilis, Ixora coccinea, Allamanda grandiflora, Clerodendron Balfourianum, Erica Fairrieana, and E. Austiniana; an immense bushy Gleichenia hecistophylla, the handsome Palm Pritchardia pacifica, and Cycas circinalis—the whole as fresh as usually seen at the spring shows. Mr. Cypher, of Cheltenham, who was a good 2d, had a grandly bloomed Allamanda Henderson, Bougainvillea glabra, Erica æmula, a fine example of Cycas Normanbyana with elegant plume-like fronds on a trunk, 2 feet high; Livistona altissima, Cocos Weddelliana, and Gleichenia rupestris. E. Pilgrim, Esq., Cheltenham, 3d. His best flowering plants were Franciscea calycina major, very well bloomed; Stephanotis floribunda, and several finely-flowered Heaths, with an immense specimen of Encephalartos villosus, and an equally good Croton longifolius, an old but, when well done, handsome kind.

Six blooming plants (open): Here Mr. Cypher was well to the front. His most meritorious examples were Lapageria rosea, Eucharis amazonica, large and well flowered; and Allamanda nobilis. Messrs. Bryant & Hoskins 2d. In their half-dozen was a large and evenly bloomed Rondeletia speciosa major.

In the class for six ornamental-leaved plants Mr. Cypher had an easy win, showing amongst others a good specimen of Thrinax elegans, still one of the best Fan Palms. Mr. Pilgrim 2d. His collection contained Geonoma Seemanni, G. Schottiana, and G. saripiquense, the latter a plant of moderately compact growth, the leaves elegantly subdivided, very dark green in colour, not nearly so well known as it deserves to be. He had also a small plant of Croton Queen Victoria, which fully bears out the character of being one of, if not the very best large-leaved kind of the many now in cultivation.

For eight exotic Ferns Mr. Cypher was also 1st. In his exhibit was a very well managed specimen of Adiantum cardiochlæna, 6 feet through, one of the finest of the large-growing Maidenhair Ferns. Mr. S. Brown, Whitecross, 2d.

Eight Adiantums: Mr. Brown 1st, with plants in beautiful condition, including A. colpodes, A. æthiopicum, A. concinnum, and A. gracillimum. Mr. Cypher 2d.

Mr. Brown was 1st for six Clematis, exhibiting well flowered examples of the Jackmanni type. The same exhibitor was also 1st for six Liliums in pots.

In the amateurs' division of the schedule W. Ash, Esq., was 1st for six flowering plants with a moderate half-dozen. Mr. Pilgrim, showing in the same class a better lot, was disqualified through inadvertently not staging all distinct genera, as required by the schedule. In six fine-foliaged plants the same thing occurred, Mr. Ash getting 1st through Mr. Pilgrim's mistake. This regulation of requiring all distinct genera to be shown is an innovation in schedule making, better omitted, leaving it for the judges to decide whether there is sufficient variety or not, as the case may be, in the competing collections—a matter always taken into account by those who know their work. Mr. Pilgrim had an extra prize awarded to each of his groups shown in these classes. Mr. Ash took 1st for four Begonias, with well grown and excellently flowered plants of Acme, Vesuvius, Kalista, and Ne Plus Ultra.

Mr. Wilson, Frome, had an extra prize for a very distinct and interesting collection of succulents, consisting of Melocactuses, Stapelias, Opuntias, Mesembryanthemums, Echeverias, Sempervivums, Haworthias, &c.

Roses were here again very fine for so late, Mr. Prince, of Oxford, exhibiting twenty-four varieties in threes that would not have disgraced a leading exhibitor early in the season; amongst them Camille Bernardin, Marie Rady, Victor Paillat, Pierre Notting, Louis Van Houtte, Victor Verdier, and Marie Guillot, were for the time extremely fine; Mr. Cooling, Bath, 2d. Twelve Tea varieties: Mr. Prince was also 1st, Mr. Cooling 2d.

Gladioli, twenty-four: Messrs. Kelway & Son, Langport, 1st, staging, as usual, although too early for the best blooms, a splendid lot of flowers, consisting of established favourites and some new seedlings, amongst which was Earl Russell, which received a First-class Certificate; it is a very fine and distinct kind, with a deep flesh-coloured ground flaked at the margin of the sepals and petals with dark rose, with a deep crimson throat, the lower segments heavily blotched with deep crimson, a broad, not too long petalled variety, having a dozen perfect flowers open at once. Mr. Dobree 2d, who also staged a good group, the same exhibitor taking 1st in the amateurs' class for Gladiolus.

Centre-pieces arranged for a dinner-table, with fruit and flowers combined, as also for drawing-rooms with flowers alone, were much in advance of those usually met with at provincial shows, bearing evidence that the arrangers could discriminate between over and under doing such groups—the former much the more prevalent, but the latter, although not so objectionable, by no means a rare occurrence. For a drawing-room stand, Mr. J. Meekins was 1st, with a very elegant group. The base of the stand was filled with Dipladenia amabilis, Allamandas Ixora coccinea, and Bougainvillea; the white double Feverfew, blue Gloxinias, and large Ferns lying flat on the table. The three trumpet-shaped side branches held several small blush and white flowers and pink Begonias; the top, also a trumpet-shaped glass, contained a couple of sprays of Oncidium flexuosum, white Heaths, and Hoteia japonica, the whole draped with Lycopodium cæsium. Mr. Hooking, 2d, had a similar arrangement. For a group comprising fruit and flowers, T. H. Pirgo, Esq., 1st, showed a similarly arranged collection. Bouquet: 1st, Mr. Hooking; 2d, Mr. Meekins.

Fruit was well shown. For eight varieties, Mr. Wilson, gr. to Earl Fortescue, Castle Hill, Great Molton, was a good 1st, with a large and handsome Smooth Cayenne Pine, Black Hamburgh and Foster's Seedling Grapes, Belle Beauce Peaches, Early Newington Nectarines, Brown Turkey Figs, Rivers' Early Prolific Plums, and Morello Cherries. Mr. Foote, gr. to Sir C. Elton, 2d, had, amongst others, finely finished Black Hamburgh and Muscat of Alexandria Grapes, Royal George Peaches, and Pitmaston Orange Nectarines.

Three bunches white Grapes: 1st, Mr. Hallett, with good Muscats; 2d, the Rev. J. Heyworth, staging very fine Golden Champion, good bunches, large in berry and nicely coloured. Three bunches black Grapes: 1st, Mr. Marsh, gr. to F. Norris, Esq., who had beautifully finished Black Hamburghs; Mr. Dufferin, 2d, with Madresfield Court, handsome in bunch and large in berry.

Eight Peaches: Mr. E. Miller, gr. to F. Sargart, Esq., Bristol, 1st, with Princess Dagmar; Mr. Wilson, 2d, showing Crawford's Early, very handsome.

Eight Nectarines: Mr. Dufferin, 1st, with beautifully-coloured Pitmaston Orange; J. B. Lowe, Esq., 2d. Mr. Wilson received an extra prize for four very fine Smooth Cayenne Pine-apples. (*From a Correspondent.*)

Southampton Horticultural: *Aug.* 3 *and* 4.—This Society held its annual summer exhibition on the above dates in Westwood Park, and it must be classed as by far the most successful the Society has ever held. This is easily accounted for by the fact that Royal patronage in the person of Prince Leopold had been secured—and not patronage only, but His Royal Highness also presented a cup of the value of 10 guineas for the best collection of eighteen miscellaneous plants, not less than five to be in bloom, the winner being Mr. Wills, gr. to Mrs. Pearce, The Ferns, Bassett, whose plants, though not so large as the second and third collections, were wonderful examples of high culture, the best specimens being Maranta Veitchii, Alocasia metallica, Croton majesticus, Cypripedium barbatum majus, and Dracæna Baptistii. The 2d prize went to Mr. Amys, gr. to the president of the Society, the Hon. Eliott Yorke, Netley Castle, who had fine specimens of Oncidium flexuosum, Adiantum farleyense, and Eucharis amazonica. The 3d award was made to Mr. Budd, gr. to F. G. Dalgety, Esq., Lockerby Hall, Stockbridge; and the 4th to Mr. Browning, gr. to F. Holloway, Esq., Marchwood Park, Southampton. The next large plant class was one for twenty miscellaneous plants, not less than six to be in bloom; and here the 1st award was made to Messrs. T. Jackson & Son, Kingston, for a very superior collection, and the 2d to Mr. S. Cummins, gr. to A. T. P. Hoare, Esq., Brownlow, Bitterne, Southampton. The smaller classes for collections of dinner-table plants, as also of Orchids, Ferns, Fuchsias, Pelargoniums, Petunias, Coleus, and Begonias, were all of them well contested, the latter being shown in extra good style by Mr. N. Blandford, gr. to Mrs. Haselfoot, Moor Hill, Westend, Southampton; Mr. Wills, and Mr. Harbut, gr. to R. Driver, Esq., Barnfield Hill—the prizes going in the order named. There was a considerable amount of "extras," amongst which were a grand collection of succulents from Mr. H. Boller, London, which were a source of attraction and wonder, a rustic being heard to exclaim, "They beant growing, they be artificials;" and the open mouth of wonder bespoke his sincerity. One of the most interesting features of the show were the groups of plants arranged in a space of 10 feet by 8 feet, for which six competitors entered the lists, all of them being far too crowded, which gave one the idea that they were thus arranged to hide defects of culture, though in justice to the exhibitors we must add that such was not the case, as all of them were creditable to the growers, but certainly not to their artistic skill;

in any one of the groups half the plants would have made up a far more effective exhibition. The tent which gained the largest number of admirers was one devoted solely to table decorations, bouquets and cut flowers generally, the competition being keen in all the classes; and we may safely assert that out of the five exhibitors for "the most tasteful table decoration occupying a space of 8 feet by 4 feet," not one would have disgraced a metropolitan show, and yet all the exhibitors belonged to the locality. The show of fruit did not come up to our expectations, and taken as a whole was below the average in quality; there were some four or five good dishes of Grapes, ditto of Peaches, all the rest being second-rate, and the Melons simply execrable. The vegetable classes were not so well filled, or the produce so fine as usual, and, what was worse, in the majority of cases it was badly set up and in two or three cases they were not even washed. It is to be hoped that the bestowal of Royal patronage is not to be a means of extinguishing the production of good vegetables such as have invariably been seen at this show. The arrangements of the tents and of their occupants were all that could be desired, and Mr. Fuidge, the hard-working secretary, must be credited (though not a gardener) with a real gardeners' taste. There are now upwards of 700 annual subscribers, which virtually renders the Society independent as to finances in case of a rainy show day, and we could wish that in this respect all similar societies were as fortunate as Southampton. (*From a Correspondent*).

Apiary.

British Bee-Keepers' Association.—*Exhibition of Bees, Hives, &c., at the Royal Horticultural Gardens, South Kensington*: *August* 6, 7, *and* 8.—The fourth exhibition of this Association was held as above, and proved, as usual, very interesting to the general public as well as to bee-keepers. The gardens at South Kensington being in a more central position than the Crystal or Alexandra Palaces, hitherto chosen for the show, it was hoped it would attract many of the upper classes, whose interest in the subject of humanity to the honey-bees would be excited sufficiently to bring improved methods of bee-culture before the cottagers in far-away localities. The Association has for President this year the Baroness Burdett-Coutts, who graced the show by her presence, and contributed some fine glasses of honeycomb, not for competition. The present year has, in many localities, been a most indifferent one for honey gathering, the cold weather of early June having thrown the stocks very backward, hence the number of exhibits does not equal some of the previous years, and heavy supers of 50 lb. and upwards were entirely absent; but this may be partly ascribed to another reason, for experience has proved that large masses of honeycomb in one receptacle are practically unsaleable, and the example of America, and the teaching of experts in bee culture, have taught bee-keepers to send their honey to market in small parcels, if they would find a ready sale. We noticed among the exhibits many small boxes of honey weighing about 1 lb. each, which soon found purchasers. These boxes were described in our columns, and introduced from America, by Mr. John Hunter; and for a sample shown on this occasion the judges awarded him a Bronze Medal. In class 10, which was for the largest and best harvest of honey in the comb from one stock of bees, three prizes were offered, but only two competitors put in an appearance. Mr. S. Thorne, of Buldock, exhibited two supers of about 18 lb. each, another partly filled, and eleven sections of about 2 lb. each—total, 75 lb.; the second prize only giving a total weight of 39 lb. In class 11, for the best exhibition of honey from one apiary, the 1st prize was withheld, the 2d being awarded to Mr. W. Martin, of High Wycombe, with two fine sets of sectional supers. In class 12, for the best super of honey (excluding glass), the 1st prize was gained by Mr. Lighton, of Frampton, Boston, who showed, 36 lb. in nine sections; 2d prize, Wm. Martin, for a capital super of 30 lb. weight; the 3d, 4th, 5th and 6th prizes going for much smaller weights. In this class, not for competition, the Baroness Burdett-Coutts showed a beautiful super of about 30 lb. weight, which the judges Highly Commended. In cass 15, for the best exhibition of honey in supers or sections of supers, separable, and each not more than 3 lb. in weight. Mr. Thorne was again to the front, taking the 1st prize with a great number of small sections of a very good character; so tempting indeed that a customer was soon obtained for the lot. The 2d prize we thought misplaced, as we certainly should have given precedence to a very clean and neat exhibit of Mr. W. Freeman, to whom the judges awarded the 3d position. In class 15, for the best single section in the comb, weighing not more than 3 lb., the 1st prize was carried off by Mr. Hunt for a real beauty, closely run by Mr. Walton, who took 2d. The collection of run, or extracted honey, was very creditable, though not large. Some further classes for honey were devoted especially to cottagers, and it is a noticeable fact that in the open classes two-thirds of the prizes at least were won by men in the same class of life, showing that, by proper attention, the working-man can hold his own in bee culture.

We now come to the hives. In class 1, for the best hive for observation purposes, the Silver Medal was taken by Mr. Brice Wilson, of Newbury, for a very ingenious arrangement embodying the principle of the leaf hive of Huber. Mr. Wilson's hive attracted great attention, the chief feature being its folding and revolving construction, with a tunnel for the queen to pass through when the compartments are close together. We fear, however, its great cost (six guineas) will preclude its common use. The 2d prize was taken by Messrs. Abbott Bros., for a glass-covered hive made to swing on a door-post. The same exhibitors also took 1st prize for the best movable comb-hive, whose principal novelty consisted in the facility it afforded for expansion or contraction as the needs of the bees require; its construction also allows the interior to be divided by diaphragms of perforated zinc shutting off the queen, the intention being to devote a portion of the combs to honey storing only. The 2d prize hive (Mr. J. M. Hooker's) also affords facilities for enlargement and contraction, and has many very good points, but we cannot help thinking that science in hive-making is overdone. Contrivances in many of the hives are numerous and ingenious, but utterly out of place in practical bee-keeping for profit, and impossible to be adopted by working-men, whose education in bee culture the Association is striving for. The 3d prize hive (Mr. Baldwin's) is also a good hive, and of a more simple character. Many hives suitable for cottagers were exhibited, for which prizes were given to Mr. Lee, Messrs. Abbot Bros., Mr. Hall, and Mr. Simmins, but as in the judging "economy" was to be taken into consideration, we fear the prices sometimes attached were such as copies of the prize hives could not readily be obtained at. Supers were shown in abundance, sections largely predominating, which we were very glad to see. Mr. James Lee was again to the front with his well-known first-class workmanship, and Root's small sections (exhibited by Mr. John Hunter) took the 2d prize. A large collection of hives and bee furniture was as usual shown by Messrs. Neighbour & Sons, to whom a prize was awarded. Honey extractors were not in force, and those shown were far inferior to Mr. Cowan's, exhibited in previous years. We think the judges would have been justified in withholding all the prizes. For new inventions, calculated in the opinion of the judges to advance the culture of bees, but few exhibits appeared. A Silver Medal was given to Messrs. Abbott Brothers for a driving apparatus, which, on trial afterwards, proved a nuisance. The Bronze Medal for the 2d prize was awarded to Mr. R. Iliffe, for an apparatus for making comb foundation, which was in every way inferior to Root's (American) machine standing by its side, exhibited (not for competition) by Mr. Hooker. In the face of this indisputable fact we are at a loss to see why the medal should have been awarded. A collection of sixty microscopic slides illustrating the anatomy of the hive-bee, exhibited, with microscope for examination, by Mr. John Hunter, gained a Silver Medal; and a Bronze Medal was won by Mr. W. Hunt for a stand of natural flowers exemplifying honey sources. Many more exhibits than we can here mention were on view, and underwent a large amount of critical examination, but the great attraction of the meeting was the manipulation with live bees in the Association's new bee tent, which is so constructed as to allow the operators and the bees a clear space in the middle, and the public a covered ring all round fronted with net, through which in perfect safety they can view the operations. The "drivings" were continued at intervals all through the afternoon, and each was preceded by a short lecture on bee life and death by Mr. John Hunter, which much interested the numerous audiences. On the first day of the show a competition for the Association's prizes took place between six experienced bee-masters, the points of excellence to be attained being who could drive out the bees from the full stock into an empty one in the shortest possible space of time consistent with neatness, coolness, and capture of the queen in her transit. The 1st prize was taken by William Martin, who succeeded in accomplishing his task in 5¾ minutes; Mr. Thorne taking 2d prize, his driving being done in a very masterly manner in 5⅛ minutes, but unfortunately he did not capture her majesty in her transit, which lost him the 1st place. The impunity with which the bees were handled caused great astonishment to the beholders, and many were the enquiries as to why the bees did not sting. Great credit is due to the Rev. H. R. Peel, the honorary secretary, for the manner in which the arrangements were carried out—always an arduous and responsible task.

PLANT PORTRAITS.

Calceolarias, Herbaceous, *Revue de l'Horticulture Belge*, June, 1878. — A plate representing several flowers of Van Houtte's strain.

Cœlia macrostachya, Lindl., *Revue Horticole*, 1878, p. 210.—A handsome Orchid with globose pseudobulbs, from whose summit proceed stems with long sword-shaped leaves. The inflorescence is a dense spike protruding from the base of the pseudobulb. Flowers pink. Guatemala.

Deherainia smaragdina, Dcne., *Botanical Magazine*, t. 6373.—A remarkable Mexican shrub, with oblong lanceolate serrulate leaves, hirsute along the nerves, and with clusters of green flowers concealed below the leaves, each flower being Primrose-like and 1½—2 inches in diameter. Imported by M. Linden. It is the plant known in gardens as Posoqueria macrantha, Theophrasta smaragdina, and Jacquinia smaragdina.

Fritillaria armenia, Boiss., *Botanical Magazine*, t. 6365.—A small 1-flowered species, with lanceolate or linear lanceolate leaves, nodding bell-shaped flowers of a purple or yellow colour, free from tesselations. Native of Armenia. The yellow-flowered variety, which it is surmised may prove to be a distinct species, was collected near Smyrna by Mr. George Maw.

Fritillaria Sewerzowi, Regel, *Botanical Magazine*, t. 6371; also called Korolkowia Sewerzowi.—It has the habit of a Polygonatum with the flowers of a Fritillaria, and of a lurid purple colour. Mountains of Turkestan. Figured from a specimen of Mr. Elwes'.

Griffinia ornata, T. Moore, *Botanical Magazine*, t. 6367.—This is the plant described and figured in these columns, 1876, vol. i., p. 266, fig. 47. It was imported from Brazil by Mr. W. Bull.

Hæmanthus Mannii, Baker, *Botanical Magazine*, t. 6364.—A species resembling H. cinnabarinus in the flowers, but differing in the production of leaves from a special stem formed after the scape. Introduced from Liberia by Mr. Carder to Mr. Bull's establishment.

Leucopogon verticillatus, R. Br., *Botanical Magazine*, t. 6366.—An erect shrub, allied to Epacris, with whorls of sessile lanceolate leaves and axillary spikes of pink flowers. The young leaves are described as of a lovely rose colour. Native of West Australia, whence it was introduced by Mr. J. Anderson-Henry.

Lily Mr. Anthony Waterer, *Florist*, July, 1878. — A hybrid between L. speciosum ♀ and L. auratum ♂, raised by Mr. G. Thomson, Garden Superintendent of the Crystal Palace, some years since. It is a beautiful Lily, betraying its hybrid origin very distinctly.

Magnolia stellata, Maxim. *Botanical Magazine*, t. 6370.—This is the very beautiful deciduous spring flowering Magnolia shown by Messrs. Veitch in the spring of the present year under the name of M. Halleana. It is a native of Japan, and is one of the best additions to hardy shrubs of recent times.

Masdevallia polysticta, Rchb. f., *Botanical Magazine*, t. 6368.—The figure previously given of this (tab. 6258) is now referred to M. melanopus, *Gardeners' Chronicle*, 1873, i., p. 338; 1874, ii., p. 322. The true M. polysticta is a native of Northern Peru, and was figured in our columns in 1875, i., p. 656, fig. 134.

Masdevallia Shuttleworthii, Rchb.f., *Botanical Magazine*, t. 6372 (see *Gardeners' Chronicle*, 1875, i., p. 170 and 1876, ii., p. 782).—The plate is taken from a unique specimen in the collection of W. H. Punchard, Esq., of Twickenham. The flowers have a shallow cup-shaped tube divided into three oblong

segments of a pinkish colour dotted with minute spots, and each prolonged at the apex into a long tail-like appendage. Colombia.

PEACH BALTET, *Revue Horticole*, 1878, p. 250.—Said to be the best of the late Peaches. The tree is a good bearer, the leaves without glands. The fruit is a free-stone, of medium size, elongated, spheroidal, with a short beak. Skin cream-coloured, tinted with scarlet and purple on the sunny side. Flesh white, juicy, sugary, aromatic. Raised by the late M. Baltet.

PLUMS, USEFUL, *Florist*, July.—1, Diamond, one of the largest and most beautiful Plums grown, excellent for cooking. Ripens in September. Raised by Mr. Hooker, of Brenchley; 2, Belgian Purple, a medium-sized fruit recommended to amateurs either for dessert or for kitchen purposes.

ROGIERA CORDATA, *Revue Horticole*, 1878, p. 230.—A Rubiaceous shrub, allied to Ixora, with opposite, entire, broadly lanceolate leaves, and terminal heads of small white flowers. Native of Guatemala.

TULIPA SAXATILIS, Sieber., *Botanical Magazine*, t. 6374.—A Cretan species of great beauty, having large mauve flowers with a bright yellow eye. It was introduced from Crete by Mr. G. Maw.

THE CHINCHONAS CULTIVATED IN ASIA.*

ANY contribution to previous knowledge of Cinchonas and their most profitable culture is welcome. We are not in a position, however, to judge of the value of a great deal contained in the pamphlet quoted below; but if Mr. Kuntze's claims to the honour which he covets rest upon the merits of this work alone, or even combined with his primeval fresh-water ocean, his chances should be very slender indeed. Nevertheless, we give the substance of it for the benefit of our friends in India, who may be able to corroborate or controvert the writer's views. From the title we expected a monograph of the whole genus, but found it to include only the forms cultivated in Asia. In the course of his travels Mr. Kuntze visited the plantations in Java and in India, and he states that he is the first botanist who has comparatively investigated the Dutch and English plantations since they have been in a flourishing condition; consequently he is in a position to publish many hitherto unknown facts. With regard to the yield of alkaloid, he says, "It is no small result of my Cinchona studies that I can confidently propose a plan whereby in future it will be possible to obtain an average of 12 per cent. instead of the 1—4 per cent. hitherto obtained." This is to be effected by planting hybrid forms, as the secretion of quinine is increased by hybridity. "And the more irregular the hybrid—that is to say the less the characteristics of the parents are blended in the offspring, the richer the bark is in quinine. At present only one irregular hybrid is known, C. Ledgeriana, which yields from 5—13¾ per cent. The latter equals 17.83 per cent. of sulphate of quinine, the maximum quantity hitherto found. Unfortunately this hybrid is mostly sterile, whilst all the other hybrids are extraordinarily fertile."

An "irregular" hybrid is the offspring of a species fertilised by the pollen of a hybrid, in which the characters of the parents, instead of commingling and forming an intermediate in leaves, flowers, &c., are separate and easily recognised. The present method of planting practised by the Dutch is in rows on gentle slopes in forest clearings at an elevation of 5000 feet to 5500 feet. Treated thus Kuntze states they succeed well, and this mode of treatment he regards as better than that adopted by the English in India. All the kinds succeed in Java, whereas in most other plantations only C. succirubra succeeds.

According to the official report of July, 1876, there were then in Java 2,012,187 Cinchona trees, namely:—

1,001,670	C. Calisaya—Hasskarliana
565,336	C. officinalis
223,200	C. Calisaya—Ledgeriana
177,433	C. succirubra and caloptera
44,036	C. lancifolia
512	C. micrantha

The Dutch are letting C. succirubra and C. micrantha die out, because their bark is very poor in quinine; whilst the English have planted little else than the former, the bark of which is unsuitable for commerce, as it usually contains only 1 per cent. of quinine against 3 per cent. of cinchonine. The number of Cinchona trees in India is estimated at 10,000,000 to 12,000,000. With regard to species, Mr. Kuntze could only distinguish four in the plantations of Java and India, three of which he "was obliged to rename, because the names by which they are known in cultivation are partly defective, partly connected with faulty descriptions, and partly include species and allied hybrids." This proceeding is all the more indefensible as the author recognises the fact that hybridity in the genus is illimitable. His species he places in two groups, characterised as follows:—

A. Leaves small, dark green, ribbed almost coriaceous leaves, regular capsules, and funnel-shaped fruit-calyx.
   1. C. Weddelliana, Kuntze; C. Calisaya, *pro parte*.
   2. C. Pahudiana, Howard.

B. Leaves ample, light green, thin, capsule ventricose, beaked.
   3. C. Howardiana, Kuntze; C. succirubra, *pro parte*.
   4. C. Pavoniana, Kuntze; C. micrantha, *pro parte*.

C. lancifolia mutis, C. officinalis, L., C. scrobiculata, Hb. et Bpl., C. purpurea, R. et P., and several others are regarded as hybrids of American birth. The *specierum hybridarumque clavis* is no doubt carefully elaborated, as the author has had some practice in "reforming" the classification of Brambles; but we fail to see the utility of it. In the first place it is admitted that the species freely hybridise, and the hybrids cross with each other and the species in the most indefinite manner. Secondly, will any one planter label a certain hybrid according to its pedigree as follows: "*C. Howardiani-Pahudiani cum Pahudiana denuo cum Pahudiana-Weddelliana*"? Each succeeding generation of seedlings, if the offspring of cross-fertilisation, which they most likely would be, would get an additional name. The hybrid C. Ledgeriana was originally brought from America by Mr. Ledger, who found it 120 *leguas* from Pelechuco in Bolivia, and it has also been accidentally raised in India; Kuntze recognises it as the offspring of the hybrid Pavoniani-Weddelliana fertilised with pollen from one of the original parents, and as it is sterile he proposes raising it artificially in the manner indicated. Respecting C. micrantha, the author says that the larger the blade of the leaf is, the shorter is the petiole; but this is not in accordance with our experience.

* *Monographia der Gattung Cinchona, L.; Abhandlung geschrieben behufs Erlangung der Würde eines Doctors, &c.* Von C. E. O. Kuntze.

Variorum.

SUNDAY MORNING AT COVENT GARDEN.—I am not about to speak of any very early hour, suffice it to say that it was about 7 A. M. when I visited the scene. The market itself was of course closed, and the ultra-mural mart was held before the railings of St. Paul's Church. You remember Hogarth's picture, "Morning." I cannot visit Covent Garden in early morning without the truth of Hogarth's picture being impressed upon me. The change has been for the better, but the present St. Paul's Church looks down on characters who represent well those whom its predecessor saw congregate in the open space in front. The morning to be described was fine, which no doubt accounted for the number of early risers; moreover, the spot appeared the still more busy on account of the quiet prevailing in the surrounding streets. The space in front of the church was crowded with people, nearly all of the humbler class, who were buying bouquets and pots of flowers to decorate their homes and make them look more cheerful by these visions of the country. The sellers ranged outside the market itself, with their boxes of plants on the ground, were vociferous in praising them. The wares consisted principally of Geraniums in pots (which were in great demand), also bouquets made up and being made up from large bunches of different flowers—Pinks, Ferns, &c. Here was a seller of Pelargonium cuttings (some with a flower), specifying each one as the best as he collected six, then offering them for a "tanner," and having found a buyer, declaring he liked the man who had no money, thereby hinting that his price was fixed, and on some one offering him less told him he had better sow them; after which he collected six more, all of the best quality. Next to the seller just mentioned was one of Calceolarias, who declared them superior to any other flower on account of their size. In the road along the edge of the pavement were vendors of ginger-beer, who were doing a brisk trade and were calling out lustily "beer a penny a-bottle." The buyers were moving slowly about, people of all ages—the young man with his fair partner bedecked with the purchase of flowers and a bouquet in her hand which was fresher looking than herself; men, women, boys and girls nearly all carrying pots or bunches of flowers or bouquets. It seemed like a morning dedicated to the goddess Flora, the devotees coming with their offerings. At one spot was a Watercress man who, finding trade rather slow, was offering his stock to another in the same line as "all fine and fresh;" but he did not know his man, as after looking over the "cresses" his hoped-for purchaser pronounced them as those he had sold to "George" yesterday, and refused to buy. At another spot was a large cistern cart containing Sarsaparilla. The man selling it (the beneficial successor of Hogarth's quack doctor) was by means of three liquids showing in a wine-glass, first the healthy state of the stomach, then the unhealthy, and lastly changing the latter to the former. After this he harangued the people, telling them that too much stout and bitter was bad overnight and required something to put them right in the morning; if they had a dry tongue they should not take so much whiskey, but if they had indulged he had the very thing to put them right—here it was, and only a penny a glass. A glass of wine for a penny—it was almost giving it away, but it was to do them good. Among the purchasers (of whom there was a large number) were boys and girls who no doubt took it for its invigorating qualities, or because they had nothing else to do; of course they could not have taken it for moistening a dry tongue as a result of the previous night, Near this was a group of six men eagerly engaging in conversation about some unfortunate who had figured at a police-court, and had left his friends for a short time. Of this group, one had a board on his breast intimating he was "blind," but from the knowing look of his eyes and the very vehement way he enforced his opinion, and pointed from one to the other of his hearers as if deprecating them, he appeared nothing less than a "cadger," one who would no doubt impose later on the charitable, and knock the pavement with his stick to call people's attention to the fact that he was "blind." In front of Evans' was a row of flower women who had made early purchases and were selling bouquets and flowers, but they could not agree (thus taking the place of Hogarth's brawlers in Tom King's coffee-house), and who were engaged in an animated wordy warfare, to the intent that if one had minded her own business the other would not have given vent to so much strong language. But the hands of the clock are pointing to eight, and the purchasers are moving off, leaving only those who had not the means to buy; so following the former example, I bought a bouquet and paid double its value, and bid adieu to Covent Garden. *Pictorial World.*

A MAN OF EXPERIMENTS.—Professor W. J. Beal, of the Michigan Agricultural College, seems to have head and hands full of experiments—if we may judge from his recently published report—and when not nipped in the bud by the elements, or the untimely cow, they are more or less satisfactory and instructive. Forty varieties of seed from Japan were planted last year, none of which seemed to give Radishes, Onions, Cabbage, Lettuce, Beets, Beans, Squashes, of quality equal to those already known among us. Quite a number did not mature seeds; those which did will be subjected to further trial. Careful tests were made with nineteen varieties of that "pungent and penetrating manifestation of the vegetable world"—the Onion. The Professor remarks that a few of the White Globe—which kept longer without sprouting than any other kind — were carefully set out for seed, and he offers the suggestion that if attention was persistently given to this quality, and only those planted for seed which are found nearest perfect at the latest date in spring, the result would be the production in due time of a race which would resist decay to the greatest possible extent. Doubtless the careful gardener might easily add thus to the native strength which is in Onion. Of Tomatos, Little Gem is too small; Trophy—when the plants are started early—is preferred for late pickings; the Conqueror is rightly named for early use. The Professor—"having for some time been convinced that there is as much opportunity for using skill in breeding corn as in breeding any kind of domestic animal"—made the initial steps of an experiment of raising seed-corn in a patch by itself, where good cultivation was given, and all the poor stalks either removed or their tops cut off before shedding any pollen. Having tried all sorts of material for mulch, he now prefers clean straw, old or new, or marsh hay, or corn fodder cut 2 inches long, less or more. Pine shavings get into the soil and are a nuisance; he urges the same

objection against tan-bark or any stuff which does not decay readily and help to enrich the land. Five pistillate flowers of Musk Melon tied up so as to exclude bees, proved abortive, and the same result occurred in the case of Cucumbers, while the crop of Hubbard Squashes artificially fertilised by hand was increased from a quarter to a third. Of forest trees under experiment, the greatest success is with white Ash, the seeds of which germinated freely, and two-year old specimens stand in the nursery row from 3 to 6 feet high, while those transplanted are only half as large. Silver Maples, removed from the river bottoms when only a few inches tall had in three years attained the height of 13 feet and stem diameter of 2½ inches. Some slight attention at odd times was given to Potatos—of which fruit that grows at the root there were 250 sorts under cultivation—and the number of species of plants in greenhouse has run up to 950. As an agreeable indication of the local interest attaching to these experiments we are told that "it is no unusual thing to see from six to ten conveyances standing at one time near the grounds," and as one perceptible fruit of this interest it is said that there is in these parts "a rapidly increasing construction of greenhouses of moderate cost." *New York Tribune.*

Esparto in South Australia.—The Esparto-grass, a native of Spain, has during the last few years gained a great mercantile reputation for its valuable fibre as an excellent material for ropes, and also for the best writing paper without any other admixture, and has become an essential article of import into England and other places. The value of the Esparto-grass is about £5 to £7 per ton, and it is said that as much as from six to eight tons can be obtained from one acre. It grows on the poorest soil, especially limestone or sand; in fact, where the soil will produce no other vegetation the Esparto-grass will grow. It grows even in the sands of the Sahara, on stony hills, and on the edge of the coast. The plants cultivated in the Adelaide Gardens, according to Dr. Schomburgk, grow most luxuriantly, and there is not the slightest doubt that many thousand acres of arid land, of a limestone or sandy nature in different parts of the colony, which are scarcely fit for pasture, by sowing it with Esparto-grass may become useful, and may be changed into productive districts. Another grass of the same superior quality for paper making, and which grows just as well as the Esparto, Lygeum spartium, Loefl., also a native of Spain and Africa, fetches the same price in the markets. Only the fibre is sent home, as is done with New Zealand Flax. The scarcity of the material for paper making becomes more and more apparent in Europe, as the consumption increases from year to year. South Australia produces numerous native plants for paper making of a greater or less value, especially the following genera, viz., Cyperus juncus, Lepidosperma, Carex, Cadium, Dianella, &c., which grow abundantly along the coast. Even the bark of Gum trees provides material for a fair paper. The important question is, "What means can be found for reducing the bulk of the stuff for exportation?"

Grasses for Dry Places. — Our readers in some of the colonies, in the south of Europe, in Peru, and other places where heat and drought prevail, will be interested in the following results of Dr. Schomburgk's trials in the Adelaide Botanic Gardens:—

"Amongst these grasses are seven kinds which show not the slightest effect of the drought, and foremost of these is Panicum spectabile, Nees (Phillip's Grass). During the hottest time the plants have grown vigorously, and not a blade of the grass has been injured by the hot winds. Truly this grass cannot be too strongly recommended as the best summer grass. Saccharum cylindricum, a kind of sugar-grass, also deserves high recommendation. Festuca duriuscula, Linn. (Hard Fescue-grass); Pennisetum fimbriatum; Aira cæspitosa, Linn. (tufted Hair-grass); Bromus longiflorus, Willd. (long-flowering Broom-grass); and Bromus inermis, Linn. These seven kinds withstood the drought.

"The following ten kinds suffered more or less from the drought, but not one species entirely destroyed, and they are well worth the attention paid to them:—Elymus condensatus, Presl. (Bunch-grass); Piptatherum Thomasii (falling awn grass); Cynosurus cristatus, Linn. (Crested Dogtail-grass); Andropogon giganteum; Paspalum ciliatum, Humb. and Bonpl. (Millett-grass); Poa pratensis, Linn. (common Meadow-grass); Dactylis glomerata, Linn. (Cocksfoot-grass); Milium altissimum (Millett-grass); Festuca rubra, Linn. (Fescue-grass).

"The following five kinds suffered materially, and cannot be recommended:—Holcus lanatus, Linn. (Sugar or soft grass); Agrostis verticillata, Vil. (Switch-grass); Alopecurus pratensis, Linn. (Foxtail-grass); Ceratochloa exaltata.

"The following kinds entirely succumbed to the drought:—Avena flavescens, Linn. (Oat-grass); Poa fluitans, Scop. (Water-grass); Festuca elatior, Linn. (tall Fescue-grass); Phleum pratense, Linn., Catstail-grass).

"As already mentioned, the Prickly Comfrey suffered, also Plantago lanceolata. The different kinds of Clover suffered more or less, but the Lucern and Sheepbush, Pentzia virgata, stood their ground well."

The Weather.

State of the weather at Blackheath, London, for the week ending Wednesday, August 7, 1878.

Month and Day	Barometer: Mean Reading Reduced to Sea-level	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest	Temperature of the Air: Lowest	Temperature of the Air: Range	Temperature of the Air: Mean for Day	Temperature of the Air: Departure of Mean from Average of 69 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity	Wind: Average Direction	Rainfall
Aug.	In.	In.	°	°	°	°	°	°			In.
1	30·01	+0·297	70·0	51·0	19·0	60·6	−1·1	51·4	80	E	0·00
2	29·72	−0·037	72·8	55·5	19·3	60·2	−2·1	51·2	81	E.S.E.	0.00
3	29·51	−0·21	65.8	55.0	10.8	59.7	−2·5	55·3	84	E.S.E.	0.19
4	29·60	−0·15	71·7	55·5	18·2	61·7	−0·5	56·6	84	E.N.E.	1·74
5	29·69	−0·09	77·5	56·5	21·0	65·5	+3·3	56·1	73	E:S.E	0·25
6	29·55	−0·10	77·0	58·0	19·0	65·8	+3·7	58·2	78	S.S.E.	0.24
7	29·70	−0.05	74·5	59.0	15.5	65.5	+3·5	55·9	71	S.W	0·00
Mean	29·69	−0·06	71·5	55·0	17·5	62.8	+0.6	55.8	79	E.S.E.	sum 2·02

Aug. 1.—The morning fine, but generally overcast. The afternoon bright and clear; cloudy at night.
— 2.—Dull and cold till 10 A.M. Afterwards alternately fine and bright, then dull and overcast.
— 3.—Early morning fine. Thunderstorm at 10, frequent rain till 2 P.M. Overcast afterwards.
— 4.—A violent thunderstorm, vivid blue lightning early in the morning, during which rain to the depth of 1·05 inch fell; thunder and lightning early in the afternoon. Another thunderstorm 4 to 5, when 0·28 inch of rain fell in 20 minutes. No rain after 5 P.M.
— 5.—Fine and bright morning, fine day till evening. Lightning after 8; heavy rain 9 to 11 P.M.
— 6.—Heavy rain early in the morning, afterwards fine, bright, and warm. A fine day.
— 7.—Morning fine and bright, and a very fine day.

London: *Barometer.*—During the week ending Saturday, August 3, the reading of the barometer about London at the level of the sea increased from 29.96 inches at the beginning of the week to 30.39 inches on July 31, and decreased to 29.72 inches by the end of the week. The mean reading for the week was 30.06 inches, being 0.20 inch higher than in the preceding week, and 0.13 inch above the average for the week.

Temperature.—The highest in the week was 74°.2 on July 30, and the lowest was 51° on the same day; the highest temperature on July 31 was 68°.5, but the night of this day was warm, the lowest temperature being 56°. The mean of the seven high day temperatures was 71°, and of the seven low night temperatures was 53°.9. The extreme range of temperature in the week was 23°.2; the mean daily range was 17°.1; the greatest range in one day was 23°.2 on July 30, and the smallest was 10°.8 on August 3.

The temperature of the air was below its average on every day. The mean daily temperatures were: 61°.8, 58°.5, 59°.7, 60°.9, 60°.9, 60°.2, and 59°.7, successively; and the departures below these averages were 0°.4, 3°.8, 2°.6, 1°.4, 1°.4, 2°.1, and 2°.5 respectively. The mean temperature for the week was 60°.2, being 2° below its average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed on grass in the full rays of the sun, was 148° on August 1; on the last day of July it was 100° only, and on the other days of the week the reading exceeded 100°, and was less than 148°. The lowest readings of a self-registering thermometer with its bulb placed on short grass, and fully exposed to the sky, was 46° on the night of July 30. The average for the week was 50°.

Wind.—The general direction of the wind for the first four days was N., and was principally E. or E.N.E. on the remaining three days.

England: *Temperature.*—The highest temperatures of the air in the week were 78° at Bristol, 76°.5 at Eccles, and 75° at Truro. At Portsmouth the highest temperature in the week was 71°, at Sheffield 72°, and at Brighton was 72°.1. The lowest temperature in the week was 42°.2 at Nottingham, 43°.1 at Bristol, and 45° at Eccles. At Plymouth the lowest temperature was 54°, at Portsmouth 53°, and at Liverpool 52°.3. The range of temperature in the week was largest, 34°.9, at Bristol, 31°.9 at Nottingham, and 31°.5 at Eccles. The smallest weekly range was 18° at Portsmouth, 19°.2 at Norwich, and 19°.5 at Plymouth. The average from all the stations was 74°.1 for the highest temperature, 48°.8 for the lowest, and 25°.3 for the weekly range.

The mean of the seven highest day temperatures were 74° at Bristol, 73·7 at Cambridge, 72°.7 at Truro, at Hull 67°.1, at Sheffield 67°.5, and at Bradford 68°. The average from all stations was 69°.9. The mean of the seven lowest night temperatures were 57°.4 at Portsmouth, 55°.7 at Plymouth, and 54°.5 at Brighton. The three stations with lowest night temperatures were Bristol, 48°.9, Wolverhampton 50°.2, and Eccles 50°.2. The mean from all stations was 53°.2.

The mean daily range of temperature was greatest at Bristol, 25°.1, the next in order was Eccles, 22°.3, and Cambridge, 21°, and was smallest at Norwich, 10°; the next in order of magnitude was Portsmouth, 13°, and both Leeds and Sunderland, 14°.1. The mean from all stations was 16°.7.

The mean temperature of the air for the week was highest at Portsmouth, 62°.1, the next in order were at Cambridge, 61°.4, and at Truro and Plymouth, both 61°.2. The lowest mean temperature was 75°.6, both at Wolverhampton and Hull, the next in order were 57°.9 at Sheffield and 58°.6 at Nottingham. The mean temperature of the week, as found from all stations, was 59°.8, being 3°.5 colder than in the week ending July 27, and 0°.4 of lower temperature than in the corresponding week of the year 1877.

Rain.—The fall of rain was variable; it fell on one to four days in the week at different stations; at Wolverhampton it amounted to 1.22 inch, of which 0.56 fell on the 2d, and 0.66 on the 3d; at Sheffield the fall was 0.87, of which 0.60 fell on the 2d and 0.27 on August 3; at Hull the fall was 0.79, but it fell on four different days, 0.31 fell on July 29, and 0.25 on August 2; at Nottingham 0.594 fell, of which 0.219 was collected on July 28, and 0.374 inch on August 3; at both Eccles and Leeds 0.5 was collected, the whole fell at Eccles on August 3, on which day only 0.04 fell at Leeds. At Portsmouth no rain fell in the week, and falls at Plymouth, Sunderland, and Truro were very small. The average fall from all stations was 0.36 inch. The weather generally for the week was fine and dry.

Scotland: *Temperature.*—The highest temperature of the air in the week was 77° at Glasgow, at Aberdeen the highest was 64°.8; the general average from all stations was 72°. The lowest temperature in the week was 44° at Perth, the lowest temperature in the week at Greenock was 49°.5; the mean from all stations was 45°.9.

The mean temperature of the air for the week from all stations was 57°.9; the highest was 59°.1, at Perth; at Aberdeen the highest was 56°.

Rain.—The fall at Aberdeen was half an inch, and the falls at the other stations were much less, and at many stations no rain fell. The average fall was 0.11 inch.

Dublin.—The highest temperature was 74°.3, the lowest 41°.6, the mean for the week was 59°.2, and the fall of rain two-hundredths of an inch.

JAMES GLAISHER.

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

Box Edgings: *J. D.* September or October, if the weather and the ground are suitable. Break the ground up well, and press the soil closely about the roots.

Cherry Tree: *Ignoramus.* Remove the breast-wood by-and-by, and nail in such as you require to furnish the tree.

Clematis: *Ignoramus.* Yes; cut the plant down in the winter.

Cucumber Disease: *James Davidson.* The cause of this disease has not yet been discovered.

Compass Plants: *T. S.* They are so-called because some of the leaves sometimes and under some conditions point North and South. Poetically, they always do.

Double Flowers: *E. H. K.* The list you want is published in Dr. Masters' work on Vegetable Teratology.

Foxglove: *L. B.* The sooner you sow the better.

Golden Feather: *M. C.* Either in the autumn in the open air, or in the spring under a frame.

Gooseberry: *C. B., Carlisle.* The variety is not known to us.

Grapes: *C. J.* The Grapes were smashed when they reached us, as "C. J." might have imagined would have been the case when he sent them in a thin cardboard box. It is useless to trust such fragile things to the tender mercies of Post-office officials.

Grape Stands: *Vitis.* The size of the stands and the box must depend upon the size of the bunches, which you do not give, and upon the conditions stated in the schedule, if any are given. Any carpenter would suggest the proper sort of box you want; we have no preference in the matter.

Insects: *Cherry,* Your Cherry leaves appear to have had the upper surface gnawed off by the black slimy larvæ of the small black sawfly, Tenthredo (Selandria) Cerasi, Linn., which have all left the leaves to go into the ground to become pupæ. *J. O. W.*

Jobbing Gardeners: *J. Johnstone.* From 6 A.M. to 6 P.M., with the usual hours for meals in summer, and from daylight till dark in winter.

KEW GARDENS: *W. S.* Yes, "cew" Gardens are open to the public on Sunday afternoons.

NAMES OF PLANTS; *Monkshood.* 1 to 9 are all Aconitum Lycoctonum; 10, Delphinium elatum.—*A. G., Clonmel.* 1, Linaria purpurea; 2, Coronilla varia.—*J. H.* Olearia Haastii.—*A Subscriber, Chesterfield.* 1, Lisianthus Russellianus; 2, Lychnis coronaria; 3, Sedum carneum; 4, S. spuriuni; 5, Eleagnus, species indeterminable; 6, Sedum reflexum, var. albescens; 7, Magnolia, species undeterminable.—*W. P.* 1, Medicago sativa; 2, Melilotus parviflora.—*C. E. F.* Valeriana officinalis.—*F. H. C.* 1, Ceanothus azureus; 2, Zauschneria californica; 3, Veronica spicata; 4, Symphoricarpus racemosus; 5, undeterminable; 6, Eccremocarpus scaber.—*K.* Specimen not found.—*G. Bath.* Olearia Haastii.—*G. S.* 4, Coccoloba Platycladon. The other specimens insufficient.—*F. G. M.* Convolvulus cneorum.—*A. E.* We do not recognise either of them.—*Frank Taylor.* 1, Phlebodium aureum; 2, Pteris tremula; 3, send when in flower; 4, Adiantum macrophyllum; 5, Selaginella Martensii.—*Cobo.* Hard to say from plants named you must send better specimens, we can do nothing with such miserable scraps.—*H. E. W.* The Hare's-foot Trefoil, Trifolium arvense.—*E. H. C.* Viburnum lantana, a common English shrub in limestone districts. *D. M.* 1, Dactylis sp.; 2, Campanula sp.; 3, Clematis integrifolia; 4, Sedum acuteum; 5, Lysimachia vulgaris; 6, Prenanthes purpurea.—*A. G. G., Clonmel.* 1, Hypericum hircinum; 2, Mentha hirsutum.—*G. T. F.* 2, Serratula tinctoria; 4, Sempervivum calcareum. The others are far too miserable specimens to be identified.—*C. H. D.* Verbascum Chaixii.—*Redwood.* Helianthus doronicoides probably (specimen insufficient), Cytisus capitatus, Aristolochia sempervivum, and Hippeastrum reticulatum.

ONIONS: *F. M. D.* The long drought succeeding very wet weather is quite sufficient to account for the condition of your Onions, though it is possible they may have been attacked by a Peronospora, which is often very destructive. We find an undescribed fungus belonging to the genus Mystrosporium, but it is clearly an after-growth. *M. F. B.*

PETUNIAS: *H. Cannell.* A very excellent strain, including both single and double varieties; they are of very large size and finely varied in colour. The Fuchsia, too, is of large size and fine proportions, with a widely-expanded and handsomely-striped purple corolla.

ROSE TREES: *Ignoramus.* Yes; fresh plant them by all means.

TRITONIA: *C. W. D.* The plant is much subject to going off as you describe, when grown in pots. They do not generally get enough water, and are an easy prey to thrips.

CATALOGUES RECEIVED.—Messrs. Vilmorin-Andrieux et Cie. (4, Quai de la Mégisserie, à Paris), Catalogue of Flower Seeds; also Catalogue of Bulbs, &c.—Messrs. Haage & Schmidt (Erfurt, Prussia), General Bulb Catalogue.

COMMUNICATIONS RECEIVED.—G. D. H.—W. K.—A. H. (thanks)—A. M.—W. G.—J. C.—A. H.—D. T. F. W. T. W. Y.—P. G.—G. M.—W. B.—Youngster.—W. C.—C. M.—James Veitch & Sons.—J. S. C.—Scotia.—R. M. (thanks)—R. G.—F. H. D.—J. R. J.—C. H.

Markets.

COVENT GARDEN, August 8.

A large supply of Grapes are now reaching us from the Channel Islands, and prices have been considerably reduced. Our market keeps quiet. Kent Filberts are making a heavy sale. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	6 0	12 0	Hydrangea, per doz	9 0	18 0
Bouvardias, do	12 0	24 0	Mignonette, per doz.	3 0	9 0
Calceolarias, p. doz.	4 0	12 0	Musk, per dozen	2 0	6 0
Campanula, per doz.	6 0	12 0	Myrtles, per doz.	6 0	12 0
Coleus, per dozen	3 0	9 0	Palms in variety		
Cyperus, do.	6 0	12 0	each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, per		
— viridis, per doz.	18 0	24 0	dozen	6 0	24 0
Euonymus, var., doz.	6 0	24 0	— scarlets, zonal		
Ferns, in var., doz	6 0	18 0	per dozen	2 6	9 0
Ficus elastica, each	2 6	15 0	Petunias, per dozen	4 0	12 0
Foliage Plants, various, each	2 0	10 6	Rhodanthes p. doz.	6 0	12 0
Fuchsias, per dozen	4 0	18 0	— Fairy, per doz.	9 0	12 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Pelargoniums, 12 spr.	0 9	1 6
Bouvardias, per bun.	1 0	4 0	— zonal, 12 sprays	0 4	1 0
Calceolaria, 12 bun.	6 0	12 0	Phlox, 12 bunches	6 0	12 0
Carnations, 12 bunch.	4 0	12 0	Pinks, var., 12 bun	4 0	9 0
Cornflower, 12 bun.	2 0	6 0	Primula, double, per		
Eschscholtzia, 12 bun	2 0	6 0	bunch	1 0	2 0
Euchsia, per doz.	4 0	12 0	Pyrethrum, 12 bun.	3 0	6 0
Gardenias, 12 blms.	3 0	9 0	Roses (indoor), doz.	1 6	12 0
Gladiolus, various, 12 spikes	1 0	4 0	— (outdoor), 12 bun.	3 0	12 0
Heliotropes, 12 sp.	0 6	1 0	Stephanotis, 12 sp	3 0	9 0
Jasmine, 12 bunches	4 0	9 0	Stocks, 12 bunches	4 0	9 0
Mignonette, 12 bun.	2 0	6 0	Sweet Peas, 12 bun.	2 0	6 0
Myosotis, 12 bun.	3 0	6 0	Sweet Sultan, 12 bun.	6 0	9 0
			Tropæolum, 12 bun.	1 0	4 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 6	4 0	Melons, each	3 0	8 0
Apricots, per dozen	1 6	3 0	Oranges, per 100	6 0	12 0
Figs, per dozen	1 6	6 0	Peaches, per dozen	4 0	12 0
Filberts, per lb.	0 7	0 8	Pears, per doz.	1 0	3 0
Grapes, per lb.	0 6	4 0	Pine-apples, per lb.	2 0	8 0
Lemons, per 100	4 0	12 0	Plums, ½-sieve	3 6	7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Herbs, per bunch	0 2	0 4
Aubergines, p. doz.	3 0	..	Horse Radish, p bun.	4 0	..
Beans, French, per lb.	0 4	0 6	Lettuces, Cos, Eng., per score	1 6	2 6
— broad, per bush.	3 0	..	Mint, green bunch	0 4	0 6
Beet, per doz.	1 0	2 0	Onions, young, bun.	0 4	0 6
Cabbages, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Carrots, per bunch	0 4	0 6	Peas, green, per qr.	1 6	2 0
Cauliflowers, per doz.	4 0	6 0	Radishes, per bunch	0 1	0 3
Celery, per bundle	1 6	2 0	— Spanish, doz.	1 0	..
Chilis, per 100	5 0	..	— New Jersey, doz.	2 0	..
Cucumbers, each	0 4	1 6	Shallots, per lb	0 6	..
Custard Mar., doz.	3 0	..	Spinach, per bushel	2 0	3 0
Endive, Batav. dozen	1 6	..	Tomatos, per dozen	2 6	3 0
Garlic, per lb.	0 6	..	Turnips, new, p. bun.	0 6	..
			Vegt. Marrows, doz.	2 0	..

Potatos:—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

SEEDS.

LONDON: *Aug. 7.*—In consequence of the Corn Exchange having been closed on Monday last, the attendance on the market to-day was above the average. For Trifolium there is a steady inquiry at late rates; the quantity offering is by no means in excess of the demand. There is nothing doing in Trefoil; the largeness of the crop both at home and abroad naturally indisposes buyers from operating. As regards red Clover seed no fresh feature presents itself. Letters just received from Canada and Illinois hold out the promise of an abundant seed harvest. In Ontario the season appears to be unusually early—fully two to three weeks so, according to some reports. All the crops there are said to be exceedingly good, especially the Fall Wheat, which has been well secured. The area under Wheat is larger than ever before planted in Canada. It is worth noting that during the latter part of July new Rye and new Barley had in certain parts of the Dominion been already marketed. In some of the Western States the late extreme heat is reported to have materially reduced the prospects of the Wheat crop. Owing to the recent rains there has been more business doing on Mark Lane in sowing Rape and Mustard seeds. Canary seed is dearer, but Hemp continues dull and neglected. New blue Peas are offering, but the prices asked prohibit, or rather postpone business. New English Rye of good quality is now obtainable at moderate rates. Linseed is steady, with an improved inquiry. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Monday being a Bank Holiday the market was closed. Trade on Wednesday was in much the same state as previously reported. Little disposition was shown to buy, and in the absence of any pressure to sell, quotations showed no particular change. There was a little new English Wheat of pretty good weight and quality, purchasable at, say, 50*s.* per quarter; but it is as yet too early to judge of the entire crop by the appearance of the few samples hitherto brought forward. The weather of the past few days, without being adverse, has not been exactly propitious; but the prospect, nevertheless, remains good.—Average prices of corn for the week ending August 3:—Wheat, 44*s.* 10*d.*; Barley, 33*s.* 3*d.*; Oats, 27*s.* For the corresponding period last year:—Wheat, 65*s.* 6*d.*; Barley, 35*s.* 5*d.*; Oats, 28*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday there was a short supply of beasts. English were not of very good quality, but American as good as hitherto. On the whole, there was a considerable deficiency in weight of meat, and prices were consequently about as of late, notwithstanding Bank Holiday. There were few sheep, and late quotations were well maintained for them. Trade was dull for lambs, at lower rates. Calves sold about as on Thursday last. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 6*d.*; lambs, 7*s.* to 8*s.*; pigs, 3*s.* 8*d.* to 4*s.* 8*d.*—On Thursday the cattle trade was dull in tone. Supplies were tolerably good, and quite equal to the demand. Beasts sold slowly, and were drooping in value. Sheep and lambs were in slow request. The former were disposed of at about late rates, but the latter were weaker. Calves were quiet and unaltered.

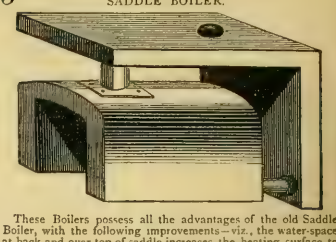
HAY.

At Whitechapel on Tuesday there was a large supply, and only the better qualities realised the prices of last week. Trade was dull. Prime old Clover, 120*s.* to 135*s.*; new, 100*s.* to 105*s.*; inferior, 80*s.* to 90*s.*; prime old meadow hay, 90*s.* to 100*s.*; new, 80*s.* to 85*s.*; inferior, 50*s.* to 70*s.*; and straw, 43*s.* to 53*s.* per load.—On Thursday there was a fair supply on offer, and the trade ruling very dull inferior produce was again cheaper, but prices were nominally unaltered for the best sorts.—Cumberland Market quotations:—Superior old meadow hay, 92*s.* to 105*s.*; inferior, 70*s.* to 80*s.*; new, 72*s.* to 88*s.*; superior old Clover, 132*s.* to 140*s.*; inferior, 100*s.* to 112*s.*; new, 84*s.* to 105*s.*; and straw, 52*s.* to 58*s.* per load.

COALS.

There was no market on Monday, that being a statute holiday. On Wednesday the demand for all descriptions was dull, at the following quotations:—Springwell West Hartley, 15*s.* 3*d.*; Walls End—Hetton, 17*s.*; Hetton Lyons, 15*s.* 3*d.*; Hawthorns, 15*s.* 3*d.*; Lambton, 16*s.* 6*d.*; Original Hartlepool, 17*s.*; South Hetton, 17*s.*; Thornley, 16*s.*; Adelaide, 16*s.*

JONES'S PATENT "DOUBLE L" SADDLE BOILER."



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	18 in.	18 in.	3 0	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1000	16 0 0
24 ,,	24 ,,	48 ,,	1400	20 0 0
28 ,,	28 ,,	60 ,,	1800	25 0 0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

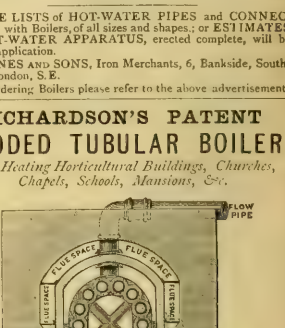
"Having given your 'Patent Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.

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RICHARDSON'S PATENT
HOODED TUBULAR BOILER,
For Heating Horticultural Buildings, Churches, Chapels, Schools, Mansions, &c.



This Boiler has a larger area of direct heating surface than any other that is made.

60 per cent. less fuel is used than with a plain Saddle Boiler of equal power.

Apply for particulars and Price List to the Patentees.

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FOR PORTMANTEAUS, TRUNKS, *BAGS and HAT CASES,*
GO TO
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Also the TOURIST COMPANION. Store Prices.

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MARENDAZ AND FISHER have received from their Agents at Archangel several large shipments of new ARCHANGEL MATS; also a large quantity of ST. PETERSBURG MATS from Cronstadt. A small quantity of RAFFIA in Stock.
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Size—8 inches wide, with roller 9 inches diameter, £1 10s.

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ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES, STEAM ROAD ROLLERS.

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AVELING & PORTER'S ENGINES have gained the highest Prizes at every important International Exhibition. The two Medals for Progress and Merit were awarded them at Vienna for their STEAM ROLLERS and ROAD LOCOMOTIVES; and at the last trials of the Royal Agricultural Society of England their AGRICULTURAL LOCOMOTIVES gained the First Prize after exhaustive trials, when one of their 10-horse power Engines, fitted with single slide and ordinary link-motion, indicated 35-horse power, with a consumption of *three and one-fifth pounds of coal* per horse-power per hour.

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The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

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"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire; and 19, Parliament Street, London, W.C.

IRON ROOFS for SALE, Cheap.—Several Iron-framed Roofs, from 20 feet to 40 feet span (not curved, no skilled labour required in fixing), covered with galvanised corrugated Iron. Apply HEMMING AND CO., 47, Moorgate Street, London, E.C.

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H. FREEMAN AND SONS, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 42 feet long, 13 feet wide, £50; 21 feet by 13 feet, £38; 12½ feet by 10 feet, £15. Estimates given in wood or iron.

SIR JOSEPH PAXTON'S HOTHOUSES FOR THE MILLION

ARE CHEAP, PORTABLE and LASTING.

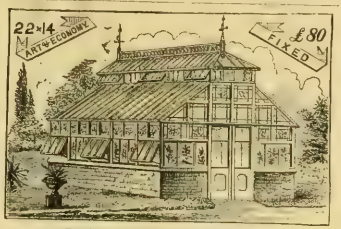
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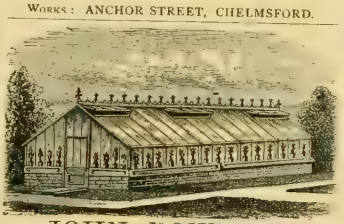
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PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } 35s.

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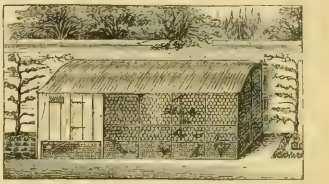
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NEW PORTABLE LEAN-TO POULTRY HOUSE.



The Night House is made of wood, painted green outside and lime-whited inside, with run underneath for shade and shelter; new O.G.-shaped galvanised roof, which is very ornamental, and affords good ventilation; fitted with shifting perches, sliding window, large door and lock for attendant, small door for fowls, and hen ladder, no nest boxes. Strong galvanised Wire Run, with corrugated iron roof, door, and lock, and all necessary bolts and nuts complete.

Prices—Carriage paid to any railway station in England:

1st size, No. 7, with run complete, 12 feet long, 4 feet wide £7 5 0

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THE "CHATSWORTH"

VAPORISING FUMIGATOR.

(J. S. Ellis' Patent, No. 1395)

KILLS THRIPS, KILLS MEALY-BUG, KILLS RED-SPIDER, KILLS SCALE, &c.

☞ **Price 37s. 6d.**





This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective mode of ridding them of that enemy to Cultivation, *Filth*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation; *for it is self-acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Plants or Flowers.*

Testimonial from Mr. Speed,

Gardener to His Grace the Duke of Devonshire, Chatsworth.

"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Squibs, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug, and most Scale, is a thing to be remembered.

"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being vaporised before passing into the house make it quite safe to be left until the combustion is finished.

"THOMAS SPEED,
"The Gardens, Chatsworth, October 9, 1877.

"Mr. Ellis, Norfolk Foundry, Sheffield."

Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

"THE CLOSER WE SHAVE our customers the better they like us, and if we take, easily, all but their skin, they are delighted." Thus said, or did, MECHI'S MAGIC STROPS, PASTE, and RAZORS, which for Fifty Years have maintained the No. 1 position.—112, Regent Street, London, W.—All the nice things in Dressing Bags, Dressing Cases, and Elegancies for Presentation. Catalogues post-free.

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HOLLOWAY'S PILLS.—Good Digestion.—Holloway's Pills are universally acknowledged to be the safest, speediest, and best corrective for indigestion; loss of appetite, acidity, flatulency, and nausea are a few of the inconveniences which are remedied with ease by these purifying Pills. They strike at the root of all abdominal ailments, they excite in the stomach a proper secretion of gastric juice, and regulate the action of the liver, promoting in that organ a copious supply of pure, wholesome bile, so necessary for digestion. These Pills remove all distention and obstruction, and from their harmless composition are peculiarly well adapted for delicate persons and young children. Whilst casting out impurities these excellent Pills strengthen the system and give muscular tone



JOHN EDMONDS & CO.,

HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, LILLIE BRIDGE, WEST BROMPTON, LONDON, S.W.

Conservatories, Greenhouses and Hothouses of every description Erected and Heated in any part of the Kingdom or Abroad.
Kiosks, Summer-houses, Verandahs, Glass Approaches, &c.—Pit Lights, Garden Boxes, Hand Glasses, &c., in Stock.

PATENTEES OF THE "TUBULAR SADDLE BOILER," THE BEST CAST-IRON BOILER.

Illustrated Catalogue free by Post. NOTE.—*The Works adjoin West Brompton Station, Metropolitan District Railway.*



T. H. P. DENNIS & CO.

MANSION HOUSE BUILDINGS,
QUEEN VICTORIA STREET, LONDON, E.C.,

CONSERVATORY AND GREENHOUSE BUILDERS,

AND

HOT-WATER ENGINEERS.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH,

MANUFACTURERS of PRIZE GARDEN IMPLEMENTS, PRIZE GARDEN FURNITURE, &c.

DESCRIPTIVE LISTS Free by Post. *Orders amounting to 40s. Carriage Paid.*

36-GALLON SWING WATER BARROW.



The above is invaluable for carrying liquids of all kinds. No Garden, Farm, Stable, or Kitchen Yard should be without one. Two or more tubs can be had with one carriage at a small additional cost. A lad can easily work it; but if required to travel long distances over rough ground a pony can be attached. The wheels and carriage are wrought iron, and the tub oak.

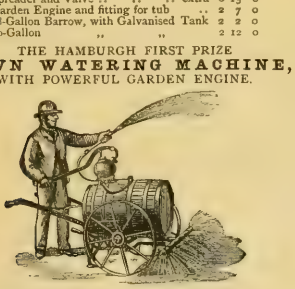
Cash prices. Carriage paid to any Station in England.

Price	£2 10 0
Ditto, with two tubs	3 8 0
Spreader and Valve .. .. .. extra	0 15 0
Garden Engine and fitting for tub ..	2 7 0
18-Gallon Barrow, with Galvanised Tank	2 2 0
30-Gallon ,, ,,	2 12 0

THE HAMBURGH FIRST PRIZE

LAWN WATERING MACHINE,

WITH POWERFUL GARDEN ENGINE.



Cash Prices. Carriage paid to any station in England.

Complete (36 gallons)	£6 10 0
If without Pump	3 10 0

This new article is very complete, and most useful in large gardens; is fitted with valve and spreader for distributing water or liquid manure. Waterpots and pails can be filled when the spreader is not in use.

The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

GARDEN ROLLER, Balance Handle.



These are very heavy and well made.

SINGLE-CYLINDER.

18 in. long by	18 in. diam...	£1	17 6
20 ,,	20 ,, ..	2	5 0
22 ,,	22 ,, ..	2	12 6
24 ,,	24 ,, ..	3	5 0

DOUBLE-CYLINDER.

18 in. long by	16 in. diam...	£2	5 0
20 ,,	18 ,, ..	2	12 6
22 ,,	20 ,, ..	3	5 0
24 ,,	22 ,, ..	3	15 0
26 ,,	24 ,, ..	4	5 0

PORTABLE PUMP.



For Liquid Manure or Water.

With stand .. £2 5 0
10 feet of India-rubber Suction Pipe, with Clip and Strainer.. 1 10 0

Powerful Garden and Conservatory Engine.

Can be used with a pail or Water-barrow, £2 2s.



IMPROVED GARDEN ENGINE.



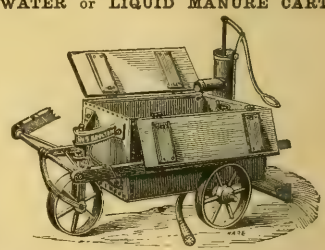
A first-class article, made extra strong, with very powerful engine, throws a continuous stream of water 50 feet.

Cash Prices. Carriage paid to any Station in England.

15 gallons, £3 10s. | 20 gallons, £4 | 25 gallons, £4 10s.

The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

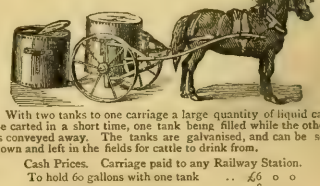
Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£10 10 0
,, 200 ,, ...	12 10 0
,, 250 ,, ...	14 10 0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	3 15 0
Spreaders .. .. each	0 15 0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carted in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

Cash Prices. Carriage paid to any Railway Station.

To hold 60 gallons with one tank ..	£6 0 0
,, 100 ,, ,, ,, ,, ..	8 0 0
Valve and Spreader for ditto	1 5 0

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

Seqriova 216

THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 *are* 1*s. each.*

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, August 20, at 11 o'Clock. GENERAL MEETING for ELECTION of FELLOWS at 3 o'Clock.

Admission One Shilling.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to

Mr. THOMSON, Crystal Palace.

WINTER GARDENS, SOUTHPORT.—A CHRYSANTHEMUM and FRUIT SHOW will be held on THURSDAY and FRIDAY, November 21 and 22. SCHEDULES may be obtained by applying to

A. CAMPBELL, Horticultural Superintendent.

BISHOP AUCKLAND HORTICULTURAL SOCIETY.

GRAND PLANT and FRUIT SHOW—

Greatest Dahlia Show in England—will be held on August 30. For Schedule of Prizes apply to

J. C. HENDY, Secretary.

ISLE of THANET FLORAL and HORTICULTURAL ASSOCIATION, and ST. PETER'S COTTAGERS' GARDENING SOCIETY.

The TWENTY-THIRD ANNUAL EXHIBITION will be held in Bromstone Park, St. Peter's, Ramsgate (by kind permission of G. E. Hannam, Esq.), on WEDNESDAY, August 28, 1878.

GLAMORGANSHIRE HORTICULTURAL SOCIETY

The SIXTEENTH ANNUAL SHOW will be held at Cardiff, on WEDNESDAY, August 21, when £300 will be given in Prizes. For Schedules, &c., apply to

The Wharf, Cardiff. EDWARD PAYNE, Hon. Sec.

BANBURY HORTICULTURAL SOCIETY.

The THIRTY-SECOND ANNUAL SHOW will be held on TUESDAY, August 27. SCHEDULES, including OPEN PRIZES for ROSES and GLADIOLI, and of £10 and £5 for STOVE and GREENHOUSE PLANTS, to be had of the Secretary,

Mr. E. J. HARTLEY, High Street, Banbury. Productions conveyed from and to railway.

WARWICKSHIRE AGRICULTURAL SOCIETY.

A GRAND HORTICULTURAL EXHIBITION in connection with the above Society (open to all England) will be held at COVENTRY on SEPTEMBER 10 and 11, 1878. Schedules and every information on application to

Mr. THOMAS WIGSTON, 32, Bishop Street, Coventry.

Cineraria, Primula, and Calceolaria.

F. AND A. SMITH offer SEED of the above, saved from their unrivalled strains, in 1*s.*, 2*s.* 6*d.*, and 5*s.* packets. Also strong SEEDLING CINERARIAS, at 1*s.* 3*d.* per doz., or 7*s.* 6*d.* per 100.

The Nurseries, West Dulwich, S.E.

RICHARD WALKER has to offer ROBINSON'S DRUMHEAD PLANTS at 2*s.* 6*d.* per 1000, and all other sorts at 3*s.* per 1000, package included. If not liked can be returned. My plants are all best qualities.

Market Gardens, Biggleswade, Beds.

GLADIOLI.—Spikes of Bloom now ready. Price on application to

KELWAY AND SON, Langport.

Grevillea robusta.

SANDY AND SON offer beautifully-grown PLANTS of the above, in 4-inch pots, 1 foot to 18 inches; 50*s.* per 100. The Nurseries, Stafford.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

Gentlemen's Gardeners, Amateurs, and Others

REQUIRING

GARDEN POTS of best quality, are requested to send their orders to

J. MATTHEWS, Royal Pottery, Weston-super-Mare.

Price List on application.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, calls attention to his splendid stock of well ripened GRAPE VINES, suitable for planting Vineries. Catalogues free. Trade supplied. Terms on application.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

LILY OF THE VALLEY, finest strong crowns for forcing at 45*s.* per 1000. AZALEAS with buds, in nice healthy plants for the market. CAMELLIAS, nice plants at lowest rates. Orders requested at once. Prices on application to

ROBERT NEUMANN, The Nurseries, Erfurt.

SEEDLINGS. — Immense quantities of Thorns, Scotch Firs, Alder, Birch, &c., for transplanting and in strong plants. Apply to

Messrs. LEVAVASSEUR AND SONS, Nurserymen, Ussy, Calvados, France.

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HERBERT TATE, Seedsman, &c., 24, Southgate, Halifax, Yorkshire.

Centaurea ragusina.

W. THOMPSON, Seedsman, Tavern Street, Ipswich, begs to offer to the Trade a fine sample of New Seed of the above. Also a small quantity of seed of the C. RAGUSINA COMPACTA. Prices on application.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.

CATALOGUES and Prices on application. Special terms to the Trade.

HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

WANTED, the PRESENT ADDRESS of J. W. SMITH, late of 302, Bowling Back Lane, Bradford.—E. P. DIXON, 57, Queen Street, Hull.

Geranium Cuttings.

WANTED to Purchase, Cuttings of choice Gold and Silver Tricolor, Bronze and Zonal GERANIUMS. Send list of sorts, and price per 100 or 1000, to

DANIELS BROS., The Town Close Nurseries, Norwich.

To Growers of Sage.

WANTED, a quantity for Planting, both Green and Red. Also THYME PLANTS.—Address, stating price per 100 or 1000, to

JAMES BUNCE, Market Gardener, Copley, near Halifax.

WANTED, a small Retail NURSERY and FLORIST BUSINESS, about 10 miles from London. Must be genuine and on moderate terms.

A. B., *Gardeners' Chronicle* Office, W.C.

WANTED, CUTTINGS of good Geranium or other Bedding Plants, hard, soft-wooded, or herbaceous stuff (named.) List and price to

C. R. FREEMAN, Seed Grower, Norwich.

WANTED, BRUGMANSIAS, one each of Knightii and sanguinea, good plants, about 5 or 6 feet. State price, &c., to

FISHER, HOLMES AND CO., Handsworth Nurseries, Sheffield.

Geranium Cuttings.

WANTED, about Sixty Dozen strong GERANIUM CUTTINGS, of six good Bedding sorts. Not to include Flower of Spring, Vesuvius, Beauty of Calderdale, Madame W. Paul, or Silver Nosegay.

T. VINCENT, Harlaxton, near Grantham.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18*s.*, 24*s.*, and 30*s.*

BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

THE ORCHARD HOUSES of THOMAS RIVERS AND SON are now in full fruit, and can be seen at any time.

Sawbridgeworth, Herts.

CHOICE FERNS.—Gleichenia dichotoma, 3*s.* 6*d.* each, and upwards; Gleichenia dicarpa and speluncæ, 5*s.* each, and upwards. Special LIST of other Ferns on application.

W. AND J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

CINERARIAS, from choice named kinds.—Fine plants, ready for potting on in 60 pots, 2*s.* per dozen, 10*s.* per 100. The same plants out of pots, 1*s.* 6*d.* per dozen, 8*s.* per 100. Very fine Seed of the above, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet; per ounce on application to

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

Zonal Pelargonium Cuttings.

H. CANNELL has an acre of the above, and now offers fine Cuttings very cheap, 100 splendid distinct kinds for 10*s.* 1 *id.* Catalongue.

Home for Flowers, Swanley, Kent.

STRAWBERRY RUNNERS, in pots and from open ground. A large and fine Stock now ready.

CATALOGUES on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To the Trade.

LILIUM AURATUM, 12*s.* per dozen, extra fine; HYACINTHS, White Roman; JONQUILS, double; NARCISS, paper-white and double Roman; ANEMONE FULGENS; SNOWDROPS, double and single; BEGONIA FROEBELI, double white NARCISS. Prices low, quality extra.

F. SANDER AND CO., Seed Growers, St. Albans.

Strawberries.

CHARLES TURNER is now prepared to supply strong runners of all the established varieties, as well as several little known but excellent kinds. For full descriptions, see Charles Turner's LIST, which may be had post-free on application.

The Royal Nurseries, Slough.

Comfrey.

C. R. CHICHESTER, Runnamoat, Rosscommon, will put on rails SYMPHYTUM ASPERRIMUM, TRUE PRICKLY COMFREY, at 6*d.* per pound, 1*s.* 6*d.* per 100 Root Cuttings, 2*s.* 6*d.* Sprouted Root Cuttings. This valuable soiling plant is strongly recommended for headlands, waste corners, and game covers. Bags from 1*s.* to 2*s.*, returnable. Special quotations to the Trade.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

TRIPOLI ONION SEED. Giant Rocca, 6*d.* per ounce; Large Late Flat Red, 6*d.* per ounce; Large Late Flat Red, extra, 1*s.* per ounce; Large Late Flat White, 6*d.* per ounce; Large Late Flat White, extra, 1*s.* per ounce; New Queen, 1*s.* per ounce.

Illustrated CATALOGUE on application.

BIDDLES AND CO., The Penny Packet Seed Company, Loughborough.

Decorative Pelargoniums.

F. AND A. SMITH are now distributing their new varieties of the above, which are strongly recommended for their bright, diverse, and original colours, dwarf robust habits, rendering the use of sticks and tying in a great many instances unnecessary. They have obtained much commendation and several awards, and will give general satisfaction. Lists with terms on application.

West Dulwich, S.E.

STRAWBERRY PLANTS.—Strong and well-rooted Runners can be had of the following sorts:—James Veitch, Sir Joseph Paxton, Eleanor, and British Queen. The fruit from the British Queen have been pronounced the finest in the market. Price List on application to

A. WHITEHEAD, Oakwood, Chislehurst.

STRAWBERRY PLANTS.—100,000 Vicomtesse Héricart de Thury (Garibaldi), now ready for shifting into 6-inch pots, and all the best proved Covent Garden kinds. Special quotations for large quantities. Catalogue, with valuable information, post free.

H. CANNELL, F.R.H.S., Swanley, Kent.

To the Trade.

ROMAN HYACINTHS, white and blue; NARCISSUS, double Roman and paper-white; SNOWDROPS, single and double. Special low quotations on application to

JAMES CARTER, DUNNETT AND BEALE, High Holborn, London, W.C.

Hollies.

C. WHITEHOUSE, Brereton Nursery, Rugeley, Staffordshire, has to offer extra fine one-year seedling and two years transplanted Hollies, 12 to 20 inches, well rooted, a large portion suitable for working. A sample 100 sent for 10*s.*, for cash only with order. Now is a good time to move them. Also one year Seedling Hollies, 5*s.* per 1000.

SALES BY AUCTION.

Postponement of Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that the SALE of ORCHIDS, advertised to take place at the Auction Mart on MONDAY next is unavoidably for the present postponed.

Auction and Estate Offices, 98, Gracechurch Street, E.C., and Leytonstone, E.

Brixton Hill, S.W.

FINAL CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Streatham Place, Brixton Hill, on TUESDAY, August 20, at 1 o'Clock precisely, handsome specimen AZALEAS, CAMELLIAS, and other GREENHOUSE PLANTS, in excellent condition; FRAMES and PITS, LAWN MOWING MACHINE, CARTS, NEST of SEED DRAWERS, and other EFFECTS.

On view day prior to Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, and Leytonstone, E.

Kensal Green.

Ten minutes' walk from Station. By order of the Executors.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Kensal House, on THURSDAY, August 29, at 1 o'Clock precisely, the whole of the STOVE and GREENHOUSE PLANTS, including Specimen Araucaria excelsa, 12 feet; double Camellias, 2 to 8 feet; trained Azalea indica, &c.; four GREENHOUSES and FITTINGS, and other EFFECTS.

May be viewed the day prior. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Stove and Greenhouse Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, August 20, at half past 12 o'Clock precisely, Established and Imported ORCHIDS, in the best possible condition, and lotted especially for those forming new collections, there being plants of all sizes, amongst them a quantity of plants of Calanthe veratrifolia and Lycaste Skinneri, and several other small collections of Orchids; specimen PALMS, FERNS, CROTONS, and other STOVE and GREENHOUSE PLANTS; 5¾ ounces of SEED of the finest strain in cultivation of Primula sinensis fimbriata alba and rubra; TREE FERNS, ornamental GARDEN SEATS, &c.; also a large PLANT VAN, 8 feet by 12 feet, boarded over.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 21, at half-past 12 o'Clock precisely, eleven cases just received, containing HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, IRIS, and other BULBS, from well-known farms in Holland, in large and small lots to suit all buyers.

On view morning of Sale, and Catalogues had.

Streatham Hill, S.W.

A valuable COLLECTION of STOVE and GREENHOUSE PLANTS, removed from The Cedars, Streatham Hill, to the Paragon Nursery, for convenience of Sale, an Auction not being permitted on the premises by the purchaser of the estate.

MR. JAMES STEVENS is instructed by the Owner to remove and SELL by AUCTION, without reserve, at the Paragon Nursery, Streatham Hill, S.W., on WEDNESDAY, August 21, at 12 for 1 o'Clock precisely, a collection of valuable imported ORCHIDS, EXHIBITION PLANTS, including fine specimens of Fuchsias, Azaleas, Camellias, Begonias, Achimenes, Marantas, Caladiums, and Ferns; and a variety of miscellaneous GREENHOUSE and STOVE PLANTS; also the OUTDOOR EFFECTS, including artistic Vases, Garden Seats and Chairs, several Mowing Machines, Garden Roller, Iron Tree Supports, 150 casts of Pots, four nearly new 2-light Boxes, Summer-house, Boiler and Fittings, Garden Tools, and numerous Effect.

On view at the Nursery, two days previous to sale, and Catalogues had on the Premises; at the "Crown and Sceptre" Tavern, Streatham Hill; and at the offices of the Auctioneer, Mr. JAMES STEVENS, 112, High Street, Clapham, S.W.

Middlesex and Bucks.

MR. E. P. NEWMAN will SELL by AUCTION, during AUGUST and SEPTEMBER, 300 ACRES of POTATOS, growing on farms in the parishes of Hayes, Hillingdon, Harmondsworth, West Drayton, Horton, and the adjoining neighbourhood, in Lots. Most of the Potatos are Regents of first-class quality and from new Scotch seed. Credit will be given.

Catalogues of the various Sales can be obtained free by post on applying to the Auctioneer, 41, High Street, Uxbridge, Middlesex.

Manchester.

SALE of a Collection of VALUABLE PLANTS, for the most part of half-specimen size, which have been removed from Crow Nest, Saltaire, Yorkshire, consisting of Fine and Rare Miscellaneous PLANTS for STOVE, GREENHOUSE, and CONSERVATORY, and a good Assortment of BRITISH and EXOTIC FERNS.

ARTINGSTALL AND HIND respectfully give notice that they are instructed to SELL by AUCTION, on TUESDAY, August 27, beginning at 12 o'Clock prompt, at their Sale Premises, 45, Princess Street, Manchester, a large quantity of desirable PLANTS.

Catalogues are being prepared, and will be issued several days prior to Sale.

For further particulars apply to the Auctioneers, Manchester.

Berkshire.

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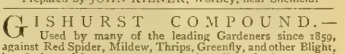
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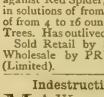
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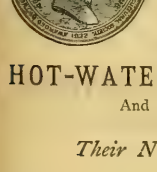
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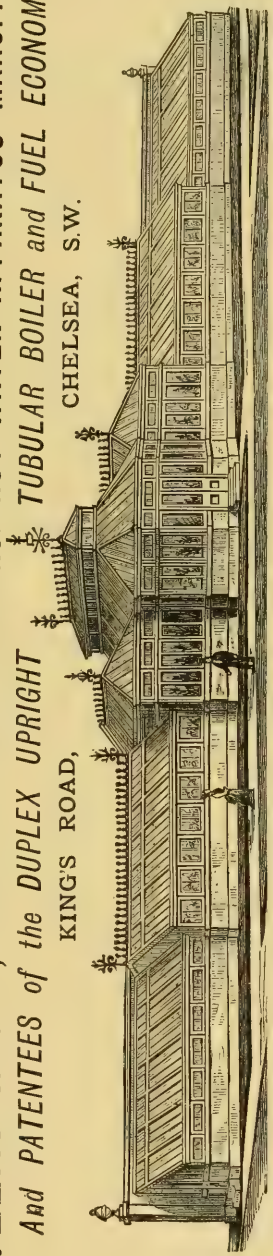
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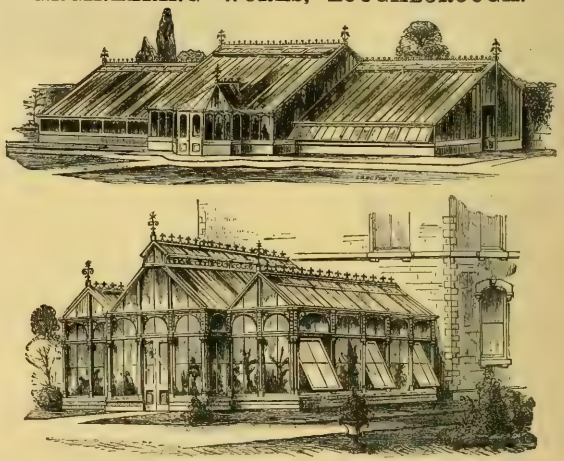
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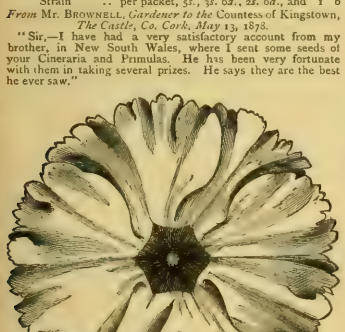
From the Rev. H. W. YULE, *Shipton, May* 31, 1878.

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

CINERARIA, Weatherill's Extra Choice Strain .. per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From Mr. BROWNELL, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5s., 3s. 6d., 2s. 6d., and 1 6

From Mr. A. BOGIE, *Gardener to the* Hon. G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom. I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. .. per packet 3 6

From Mr. J. GUNNER, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year. It has been much admired by all who have seen it."

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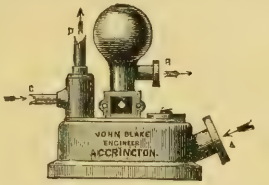
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This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wincham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From JOHN BARNES, ESQ., *Contractor, Chatburn and Hellifield Railway, Contractor's Office, March*, 1877.

"Dear Sir,—I have the pleasure to inform you that the three Hydraulic Rams you erected for me on this contract about two years ago, have continued to work very satisfactorily, without requiring any repairing. With a fall of 5 feet sufficient water has been raised daily by each ram to supply two of my locomotive engines: they have fully answered my expectations and all that has been said of them."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From Mr. THOMAS MASON, *Alkincoates Hall, Colne, September* 30, 1871.

"Sir,—Your self-acting Hydraulic Ram gives me entire satisfaction; it has been at work about fifteen months, and has only been seen once during the last six months; it is forcing about 1400 gallons per day of twenty-four hours to a height of 194 feet."

From JOHN PENNINGTON, Esq., *Emmott Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.



SATURDAY, AUGUST 17, 1878.

EFFECTIVE GROUPING OF PLANTS.

IT is now a good many years since some of the provincial horticultural societies first introduced into their schedules classes for groups of plants effectively arranged, and more recently prizes for such groups have been offered and competed for at some of the shows of the metropolitan societies. That this is a step in the right direction few will be disposed to question, for such displays tend to educate those whose duty it is not only to grow well the various plants they are called upon to cultivate, but also when grown, to arrange them to the best advantage not alone in the different glass structures they are intended to decorate, but also to group them artistically in the rooms, corridors, and other available spaces not only of such mansions as by their extent may justly be styled palatial, but likewise the many of a less pretentious character, which the occupiers are nevertheless desirous to adorn and enliven by the presence of these the most acceptable, and, when selected with judgment and skilfully disposed, the most elegant objects with which a dwelling can be embellished. In such private establishments, where plant decoration of this kind is regularly carried out, practice in this as in other matters helps to guide and correct the taste until proficiency is attained. That there is plenty of room for more extended knowledge in all that pertains to it is evident, for nothing is more common than to meet with individuals who can grow plants fairly, and yet evince all but a total absence of an eye to grouping them in a way calculated to produce the best effect by the judicious association of form and colour.

Let me be clearly understood. I am now speaking of arranging plants, foliage and flowering subjects, combined in a way that they will be the most pleasing to look upon for the time being, or, in other words, a temporary arrangement such as is required for an ordinary festivity; or at most the disposal in a conservatory for a short time of plants that have been grown elsewhere, with a view to their doing duty for a limited period in this manner. In the case of plants located in a glass structure, of any description, with the object of making their growth therein, I am anything but an advocate for making effective arrangement the first consideration, for where such is the course followed, the cultivation in all, with few and these accidental exceptions, soon falls down to a very low ebb, and if adopted generally would bring the cultural standard, of which plant growers in the kingdom are justly proud, even below that of Continental countries, where the presence of more sunlight than we get places the plants that have to be grown all, or partially, under glass, less under the attenuating influences of fire-heat. It is quite necessary to urge this, for to satisfy immediate appearances gardeners, against their better judgment, and after useless remonstrance, are sometimes compelled to arrange the occupants of the houses under their charge in a way that prevents the possibility of their existing, much less ever reflecting credit upon the cultivator. One of the most palpable instances of this kind was recently brought under my notice, where a handsome structure, costing several thousands of pounds, had been erected, and on its completion the gardener (a

thoroughly experienced man) was directed to have a lot of Honeysuckles and Ivies dug up from the woods and planted out along with a host of Clematis and other hardy things, intermixed with Dipladenias, Allamandas, Bougainvilleas, and similar heat-requiring plants, also planted out. How the unlucky individual who, as a matter of course was held responsible for the well-doing, and called to account if all this happy family did not thrive, was to succeed, unless possessed of Alladin's wonderful lamp, it would be difficult to guess.

Even at the various provincial exhibitions where these competitions are held, the description of plants employed and the grouping are often alike a mistake. That most frequently made consists in the selection of too many large plants, both such as are cultivated for their leaf beauty, and also in the case of the flowering subjects introduced, the latter sometimes consisting of bushy trained specimens—than which nothing could possibly be more out of character. The introduction of too much colour is equally objectionable, as also is the use of massive, low, broad fine-leaved plants. I have seen this season at several exhibitions where this feature was introduced, what otherwise would have been a creditable arrangement completely spoilt by the presence of a fine specimen of Cycas revoluta, with nothing to balance it sufficiently on the opposite side of the group; in fact such plants are only fit for very extensive combinations of this kind, and then in the back-centre or key position, and for which unless on a considerable stem they are insufficient in height, and then even in large groups not equal to a good Tree Fern on a sufficient stem, flanked right and left, not too near, by a couple or more of medium growing Palms. The mistake is often made of using too great a number of large plants proportionate to the extent of the group or space to be covered, the result of which is that the individuality is lost of the comparatively few plants that are required to stand out in relief, above what may be termed the undergrowth or carpet out of which the taller subjects should spring.

The first essential in arranging either a large or small group is to have a sufficient background of green foliage, as a matter of course regulated in height by the height of the apartment and the space to be filled, and to avoid anything approaching crowding amongst the taller plants which are intended to stand out in relief above the lower subjects, which latter should be placed close enough to hide the pots or tubs in which the former are grown. Another matter of importance is not to have too much colour in the shape of flowering plants, or to introduce too many plants bearing high colours, either of which are offensive. The green foliage should always predominate, at the same time it is possible to err by using such a preponderance of green as to produce in the whole a sombre appearance.

The highest colours, especially if in anything approaching a mass, usually look the best when placed the furthest of the coloured subjects from the eye, avoiding the common error of giving to the arrangement a spotted appearance by dotting the flowering plants singly at short stated intervals amongst the green, or in making straight continuous lines of colour, thereby producing that which is usually a bad example of the ribbon-border, once so fashionable in flower gardening. In place of this, the different blooming plants when stood, each kind together, at sufficient intervals apart in the green setting, produce a much more artistic effect. As a matter of course, the front of the arrangement should be composed entirely of dwarf, low-growing plants in all cases, stood so near together that the whole of the pots are hid from view, the extreme front being covered with such things as Isolepis gracilis, Lycopodium, or something of a similar character.

In London, where of late years, as is well known, this kind of decorative work has been very much on the increase, it is known in the trade as furnishing, and those who lay themselves out specially for it, as might be supposed, have something like an acknowledged system to guide them. Amongst those who have gained celebrity for taste and originality in these arrangements I may mention Mr. Wills. To those who have not had an opportunity of seeing the way these arrangements are now carried out in the metropolis, a few details of the description and numbers of plants Mr. Wills uses will convey some idea of the effect produced. It will be scarcely necessary to say that the extent of the space to be filled determines the size of the foliage plants he uses. Where admissible large Tree Ferns and massive leaved Palms are employed for the background, with a few of the more elegant dwarfer growing Palms, such as Cocos Weddelliana, Chamædorea graminifolia, or Geonoma gracilis, single-stemmed Aralias, the Fern-leaved Cupania, Grevilleas and Dracænas of sufficient height proportionate to the extent of the group stood informally at intervals at mid-distance from the back to front of the space filled; the whole thickly carpeted at the back of the group with dwarf Palms, Dracænas, spreading low-growing Ferns, Ficus elastica, Crotons, Dieffenbachias, Pandanads, Theophrastas, Panax, Marantas, Anthuriums, Alocasias, Caladiums, Acacias, Aspidistras, Cordylines, Yuccas, Phormiums, Myrtles, Lomatias, and others of similar habit. The flowering plants employed are such as happen to be in season for the time being:—Roses in abundance, dwarf Azaleas, Epiphyllums, Celosias, Cyclamens, Amaryllis, Bouvardias, Gladiolus, Boronias, Eucharis amazonica, Abutilons, Pelargoniums, Cinerarias, Primulas, Calceolarias, Hoteias, and Richardias, with choice Orchids, amongst the commoner things and other flowering subjects of a character such as usually seen in Covent Garden. Of these the quantities Mr. Wills uses are enormous, as much as 30,000 in a week, including Lycopodium denticulatum, Isolepis gracilis, and the British yellow-flowered Loosestrife, Lysimachia nummularia, or Creeping Jenny as it is more usually called. Of these three latter Mr. Wills uses as many as 15,000 per week during the busy season. These figures will give some idea of the way in which the plants that form the base of the arrangements are massed, standing so close that not a vestige of pot is to be seen, the Creeping Jenny covering the extreme front and acting as a verge.

In addition to flowering plants Mr. Wills uses an almost incredible quantity of cut flowers, consisting of such things as Camellias, Azaleas, Gardenias, Zonal Pelargoniums (red, white, and pink), Stephanotis in hundreds of bunches, and Roses—as much as a thousand flowers in a day, even during the spring before they are in bloom out-of-doors. The taste, at all events in London, for plants and flowers in the dwellings of almost all who can afford them—from those whose wealth enables them to procure all that money can purchase, down to those in a very much more humble position—is such that it is difficult to say where it will end. *T. Baines.*

New Garden Plants.

Hæmanthus (Nerissa) Kalbreyeri, *Baker, n. sp.**

This is another new species of the section of the genus Hæmanthus, marked by thin leaves, small reflexing bracts, and spreading perianth segments, of which the old H. multiflorus is the type. It was gathered by Mr. Kalbreyer when out collecting in Guinea for Messrs. Veitch. His dried specimen in the herbarium of the British Museum bears the label "Isles de Los, in open spaces under trees." It belongs to the group with a special leaf-bearing stem, and comes in between H. Mannii and H. multiflorus. The plant is here characterised from a living specimen, presented by Messrs. Veitch to the Kew collection, which flowered March, 1878.

Rootstock a globose corm, with fleshy cylindrical fibres. Leaf-stem developed after the flowers, half a foot long, with copious claret blotches on a green ground, bearing two or three short-petioled oblong leaves, which reach a length of 9—10 inches, and a breadth of 2½—3 inches, bright green on both sides, with a deltoid base and a channelled midrib, the central main veins ½ inch apart, connected by very close oblique fine cross veinlets (about four to a line). Scape lateral, reaching, according to Mr. Kalbreyer, a length of 2—3 feet. Umbel 30—40-flowered, 5—6 inches in diameter; bracts oblong, reflexing; pedicels 1—1½ inch long. Perianth bright crimson, 15—16 lines long; tube cylindrical, ½—⅝ inch; segments narrow, linear, 1 inch long, spreading or reflexing when fully expanded. Filaments stout, bright red, erecto-patent, equal in length to the perianth segments. Anthers linear-oblong, a line long. Style entire, rather longer than the stamens. *J. G. B.*

* *Hæmanthus (Nerissa) Kalbreyeri*, Baker, n. sp.—Caule foliifero speciali post scapum producto; foliis 2—3 breviter petiolatis oblongis acutis, venulis transversalibus creberrimis; scapo laterali 1—3 pedali; pedicellis elongatis; perianthio 15—16 lin. longo; segmentis anguste linearibus, tubo cylindrico 3—4-plo longioribus; filamentis perianthii segmentis æquilongis.

Hæmanthus (Diacles) albo-maculatus, *Baker, n. sp.**

This is a fine new species of Hæmanthus of the group of H. coccineus, with a dense head of pure white flowers. In general habit it comes nearest to H. hyalocarpus, Jacq., but by its white spreading bracts, veined with green, it approaches H. virescens, Herb., from all the forms of which it may be easily distinguished by its large ligulate green leaves, copiously spotted with white. We had it first in 1875 from Messrs. Low, of Clapton; but the material which they sent was not enough to fully settle its characters. In December last Messrs. E. G. Henderson & Son presented to the Kew collection a living plant in fine flowering condition, from which this present description was made. As to what province of the Cape it comes from, I have no information.

Bulb compressed, about 2 inches the longer diameter, with thick green fleshy tunics. Produced leaves two, contemporary with the flowers, ligulate, fleshy, quite glabrous when mature, very obtuse, above 1 foot long, 2½—3 inches broad above the middle, deep green, with copious spots of white, obscurely ciliated in an early stage only. Scape lateral, plain green, slightly compressed, glabrous, 3—4 inches long. Flowers in a dense head 2—3 inches in diameter; bracts 6—7, oblong, 1½—1¾ inch long, spreading, white, veined with green; pedicels very short. Perianth pure white, 1—1½ inch long, the ascending linear segments twice as long as the tube. Filaments white, a little exserted; anthers oblong, yellow. Style white, reaching to the top of the stamens; stigma minute, capitate. Ovules pendulous from the axis at the apex of the cells. *J. G. B.*

* *Hæmanthus (Diacles) albo-maculatus*, Baker, n. sp.—Bulbo compresso, tunicis crassis viridibus; foliis productis a synanthiis ligulatis glabris obtusis pedalibus et ultra albo-maculatis primum obscure ciliatis; scapo 3—4-pollicari glabro viridi leviter compresso; floribus dense capitulatis; bracteis 6-7 oblongis capitulo brevioribus albidis venulis viridibus percursis; pedicellis brevissimis; perianthio albo pollicari; segmentis linearibus ascendentibus tubo duplo superantibus; filamentis albis exsertis; antheris citrinis.

Tulipa Kolpakowskiana, *Regel, Descrip. Plant. Nov., fasc.* v., p. 50.†

This is a new species, discovered in Turkestan by Mr. Albert Regel, and named by his father, Dr. Regel, in compliment to General Kolpakowsky, the governor of the eastern province of that territory. It belongs to the same group as T. Gesneriana, Didieri, and Fransoniana, but at first sight, with its narrow leaves and comparatively small yellow flower flushed with red on the outside, looks more like one of Sylvestres, especially T. australis. From the yellow-flowered form of Gesneriana it differs by its narrow leaves, subacute perianth-segments, and very small stigma. Botanically it is a well-marked plant, but for decorative uses it falls far below Greigii, Eichleri, Fransoniana, and many others. My description is taken from a plant that flowered at Kew last April, the bulb of which was received from Dr. Regel.

Bulb middle-sized, ovoid, the brown tunics thinly hairy on the inside. Stem, including the peduncle, about 1 foot long, glabrous, glaucous, 1-flowered. Leaves three, confined to the lower half of the stem, linear-lanceolate or linear, glabrous, glaucous, the lowest ½ foot long, under 1 inch broad. Perianth 1½ inch long, campanulate, bright yellow inside, without any dark blotch at the base of the segments, which are nearly all alike in shape, the outer ones oblong, subacute, the inner ones rather broader above the middle, both rows under ⅝ inch broad, the three inner concolorous on the back, the three outer flushed with red. Stamens about ½ inch long, yellow through-

† *Tulipa Kolpakowskiana.* — Bulbo ovoideo magnitudine mediocri, tunicis brunneis intus tenuiter pilosis; caule triphyllo glabro glauco pedali unifloro; foliis linear-lanceolatis vel lineari-bus acutis glaucis glabris; perianthio luteo campanulato sesquipollicari; segmentis sub-conformibus oblongis sub-acutis, interioribus dorso concoloribus, exterioribus dorso rubellis; macula basali nulla; staminibus luteis perianthio triplo brevioribus; antheris filamento glabro subæquilongis; stigmate parvo.

out, the linear-oblong anthers as long as the glabrous filaments. Stigmas yellow, very small, narrower than the green triquetrous ovary, which is ⅛ inch long. *J. G. B.*

A SYNOPSIS OF THE GENUS AQUILEGIA.

(*Concluded from p. 111.*)

Group III. *Macranthæ.*—Sepals 1½ –1½ or even 2 inches long, so that the expanded flower is 2½—3 inches in diameter.

Of these we have one species from each of the principal geographical areas over which the genus is spread, viz., Europe, Siberia, the Himalayas, and North America.

* Old World Species.

24. *A. glandulosa*, Fisch. in D.C. Prodr., vol. i., p. 50; Ledeb. Fl. Ross, vol., i., p. 56; Sweet, Brit. Flow. Gard., ser. 2, t. 55; Knowles and West. Flor. Cab., t. 10; Regel, Gartenfl., tab. 289, fig. 1.—Stem 1—1½ foot long, 1—3-flowered, finely pubescent in the upper half. Petiolules of well-developed root-leaves 1—2 inches long, bearing three distinctly-stalked divisions; ultimate segments much narrower and deeper than in *A. vulgaris*; upper surface green, lower slightly glaucous. Stem-leaves few, small and bract-like. Sepals bright lilac-blue, ovate, unguiculate, acute, usually about 1½ inch long, quite half as broad as long. Lamina of the petal cuneate, lilac-blue in the type, less than half as long as the sepals, rather rounded at the tip, as broad as long; spur ½—⅔ inch long, stout, much incurved. Head of stamens shorter than the lamina of the petals. Follicles 1 inch long, densely pilose; style short (¼—⅓ inch), falcate, divergent.

A native of the Altai Mountains and other districts of Central Siberia.

Var. *jucunda*, Fisch. and Lall. Ind. Sem. Petrop., 1840, p. 2; Lindl. in Bot. Reg., vol. xxxiii., t. 19; Flore des Serres, t. 535; Regel, Gartenfl., tab. 289, fig. 2.—Flower rather smaller than in the type. Lamina of the petal white, more truncate at the tip. Head of stamens as long as the lamina of the petals.

A fine form, well-known in cultivation.

25. *A. alpina*, Linn. Sp. Plant., edit. ii., p. 752; D.C. Prodr., vol. i., p. 50; Deless. Ic., t. 48; Lodd. Bot. Cab., t. 657; Sweet, Brit. Flow. Gard., t. 218; Reich. Ic. Fl. Germ., t. 4734; A. montana, Sternb. Denks. 1818, p. 60.—Stem about 1 foot long, bearing not more than 2—3 flowers in the wild state, glabrous in the lower part, finely pubescent upwards. Petiolules 1—2 inches long, bearing three nearly sessile divisions; ultimate lobes as narrow and deep as in any of the species; texture more membranous than in *A. vulgaris*; upper surface green, the lower rather glaucous. Stem bearing 1—2 petioled biternate leaves. Flowers usually bright lilac-blue, rarely white, or pale claret. Sepals broad ovate, with a distinct claw, acute, usually 1¼—1½ inch long, more than half as broad. Petal lamina about half as long as the sepals, slightly rounded and faintly emarginate at the tip, nearly as broad as long, often white when the sepals are bright coloured; spur stout, more or less incurved, as long as the lamina. Head of stamens shorter than the lamina of the petals. Follicles pubescent, 1—1½ inch long; style ¼—⅜ inch.

Mountains of Central Europe, from Dauphiné eastward to Transylvania, ascending to 7000 feet above sea-level.

26. *A. fragrans*, Benth. in Maund. Bot., vol. iv., t. 181; A. vulgaris var. pyrenaica, Hook. fil, and Thoms. Fl. Ind., vol. i., p. 24, in part.—Stems more slender than in *A. vulgaris*, 1½—2 feet long, few-flowered, finely pubescent in the upper part. Petiolules 1—2 inches long, bearing in well-developed leaves three distinctly-stalked divisions; texture as thin and ultimate lobes as deep and narrow as in *A. alpina*; upper surface green, lower slightly glaucous. Stem bearing 2—3 large petioled biternate leaves. Flowers white or pale claret-purple, finely pubescent, very fragrant. Sepals ovate, subacute, 1¼—1½ inch long, not reflexing, about half as broad as long. Petal-lamina very cuneate, ⅜ inch long and broad, slightly rounded at the tip; spur slender, slightly curved, about as long as the lamina, little knobbed at the tip. Head of stamens about as long as the lamina of the petals. Follicles pubescent, ¾—1 inch long; style ¼—⅓ inch.

Temperate region of the Western Himalayas, Kashmir, Kistwar, &c., at an elevation above sea-level of about 8000—10,000 feet. Introduced into cultivation by the Royal Horticultural Society about 1840.

* New World species.

27. *A. cærulea*, James, in Bot. Long Expedit., vol. ii., p. 15; Torrey, in Ann. Lyc. New York, vol. ii., p. 164 (1827); Torrey and Gray, Fl. N. Amer., vol. i., p. 30; *A. leptocera*, Nuttall, in Journ. Acad. Phil. 1834, p. 9; Hook. in Bot. Mag., t. 4407; *A. macrantha*, Hook. and Arn. Bot. Beech, tab. 72, on plate only.—Stems as stout and tall as in *A. vulgaris*, bearing several flowers when well developed, glabrous in the lower part, finely pubescent upwards. Petiolules 1—2 inches long, bearing in full-grown leaves three distinctly-stalked divisions; texture less firm than in *A. vulgaris*; ultimate lobes as deep and narrow as in *A. alpina*; upper surface green, lower slightly glaucous. Lower stem-leaves large and biternate. Sepals usually whitish, sometimes more or less tinted with lilac-blue or claret, oblong, obtuse, unguiculate, usually 1¾—1¾ inch long by about half as broad, reflexing when the flower is fully expanded. Lamina of the petals half as long as the sepals, always white, very cuneate, rather rounded at the tip, not so broad as long; spur very slender, straight, 1½—2 inches long. Head of stamens about as long as the lamina of the petals. Follicles pubescent, 1 inch or more long; style ⅜ inch.

Plentiful in the subalpine region of the Rocky Mountains in Utah and Colorado, at an elevation of from 7000 to 10,000 feet above sea-level, and occurring also more sparingly on the Californian Sierra Nevada. Of the two colour-groups of Columbine, the red-yellow and lilac-claret-white series, all the American species belong to the former except this and *A. brevistyla*. Here the bright colours seem to be comparatively rarely brought out, and the whole flower is generally whitish. But this affords no valid ground for dropping the original name, cærulea, as has been proposed more than once by botanists of high authority. The only species besides cærulea with such a long slender spur is the more southern *A. chrysantha*, which differs by its yellow flowers and smaller sepals.

This finishes the descriptive enumeration of all the known species. To conclude the paper, I give a systematic and geographical key to the species as here adopted, and an index of names:—

1. Systematic Key to the Known Species of Aquilegia.

Group I. *Micranthæ.*—Small-flowered Columbines.

Stem-leaves all small and bract-like.

1. A. Einseleana	2. A. viscosa
3. A. thalictrifolia	4. A. parviflora

Lower stem-leaves large petioled and biternate.

Lamina of the petals much shorter than the sepals.

5. A. lactiflora	6. A. pubiflora.

Lamina of the petals nearly or quite as long as the sepals.

Spur short and curved — 9. A. brevistyla

Spur moderately long, nearly straight.

7. A. viridiflora	8. A. Buergeriana
10. A. canadensis	11. A. flavescens

Group II. *Mesanthæ.*—Middle-sized flowered Columbines.

Stem-leaves all small and bract-like.

12. A. pyrenaica	13. A. Bertolonii

Lower stem-leaves large petioled and biternate.

Spur short.

14. A. glauca	20. A. flabellata

Spur about as long as the lamina of the petal.

Lilac-claret-white flowers; short stamens.

15. A. Moorcroftiana	16. A. Amaliæ
17. A. leptoceras	18. A. vulgaris
19. A. sibirica.	

Red-yellow flowers; long stamens.

21. A. formosa	22. A. Skinneri
Spur very long	23. A. chrysantha

Group III. *Macranthæ.*—Large-flowered Columbines.

Spur short	24. A. glandulosa
Spur moderately long	25. A. alpina. / 26. A. fragrans
Spur very long	27. A. cærulea

2. Geography of the Genus.

The following table shows in succinct form the general distribution of the species through the northern hemispheres of the Old and New World respectively. As many of the species are local, and others widely distributed, it would be desirable to obtain further information as to the character of soil in which they grow naturally.

European species, 8.—A. Einseleana, A. viscosa, A. thalictrifolia, A. pyrenaica, A. Bertolonii, A. Amaliæ, A. vulgaris, A. alpina,

Siberian, 7.—A. parviflora, A. lactiflora, A. viridiflora, A. leptoceras, A. vulgaris, A. sibirica, A. glandulosa.

Japanese, 2.—A. Buergeriana, A. flabellata.

Himalayan, 4.—A. pubiflora, A. glauca, A. Moorcroftiana, A. fragrans.

North American, 6.—A. brevistyla, A. canadensis, A. flavescens, A. formosa, A. chrysantha, A. cærulea.

Central American, 1.—A. Skinneri.

3. Alphabetical Index to the Published Latin Names.

Accepted species in italics; synonyms and varieties in Roman.

alpina, 25	Gebleri, 19	Othonis, 16
Amaliæ, 16	*glandulosa*, F. and M., 24	paraplesia, 18
arctica, 21	glandulosa, Miq., 20	*parviflora*, 4
atrata, 13	*glauca*, 14	platysepala, 18
atropurpurea, 7, 8	glaucescens, 18	*pubiflora*, 6
aurea, 11	Haenkeana, 18	*pyrenaica*, D.C., 12
Bauhinii, 1	hybrida, 18	pyrenaica, Reich., 13
Bernardi, 18	jucunda, 24	pyrenaica, Koch, 1
Bertolonii, 13	kamaonensis, 15	Reuteri, 13
bicolor, 19	Karelinii, 18	*sibirica*, 19
blanda, 18	Kitaibelii, 13	*Skinneri*, 22
brachyceras, 17	*lactiflora*, 5	speciosa, 19
Buergeriana, 8	leptoceras, Nutt., 27	spectabilis, 19
californica, 21	*leptoceras*, F. and M., 17	Sternbergii, 18
canadensis, 10	leptoceras flava, 23	subalpina, 18
caucasica, 18	macrantha, 27	*thalictrifolia*, 3
chrysantha, 23	mexicana, 22	transilvanica, 18
cærulea, 27	*Moorcroftiana*, 15	truncata, 21
dahurica, 7	montana, 25	*viridiflora*, 7
decipiens, 13	mussotensis, 6	*viscosa*, Gouan, 2
Einseleana, 1	nevadensis, 16	viscosa, Reich., 1
eximia, 21	nigricans, 18	viscosa, Hk. fil and Thoms., 6
flabellata, 20	nivalis, 14	*vulgaris*, L., 18
flavescens, 11	nivea, 18	vulgaris, Thunb., 20
formosa, 21	olympica, 18	Wittmanniana, 18
fragrans, 26		
Garmeriana, 19		

J. G. Baker.

NOTES ON FRENCH HORTICULTURE.

Vegetables and Fruits.

In the Parisian markets and shops these are plentiful, and on the whole cheap. With, however, the two notable exceptions of Endive and Asparagus, I saw nothing superior to the produce of Covent Garden and other English markets. Certain peculiarities are also very striking; for example, the majority of the Carrots were round and orange-coloured, the Turnips being Carrot-shaped and white as a rule, and the same Carrots and Turnips were seen in every market and shop and on every stall in the streets of Paris. A few Horn Carrots were seen here and there, but not in any quantity. This French Carrot seemed to have no particular merit to recommend it. The flavour was not equal to good Horn or other Carrots, and the top, all kept intact, bore an extravagant proportion to the size of the roots. It seemed equally difficult to see any particular merit or beauty in the spiry Turnips, almost like smooth white Parsnips at first sight; the Turnips were, however, sweet and tender; and if it be true—and it is—that the deeper Sugar-Beet is buried in the ground the more sugar it secretes, it may also be true that the deeper the Turnip buries its root into the ground the more mild and tender it may be. At all events, there is no reason why each nation should not please itself with the form of its products, as long as it sustains their quality.

Another striking peculiarity of the Parisian vegetable markets is the enormous quantity of Globe Artichokes, cooked and uncooked, offered for sale. Most of these are larger than the average run of those grown in England, and the demand for them must be very great. Enormous piles of them were offered in the markets, and hardly a vegetable shop was seen, even in the poorest quarters, without its little heap of cooked Artichokes. This vegetable, alike in its raw and cooked state, is considered a delicacy by rich and poor, though certainly few things could look less tempting to strangers than messy-looking heaps of cooked Artichokes. Cabbages were far less plentiful than at home; and Cauliflowers were no better, nor offered in such quantities. Potatos and Peas are mostly sold in narrow bags, which do not exhibit the samples so well as the wide-mouthed baskets in Covent Garden and other English markets. The French Peas also seem decidedly inferior to the English. Possibly June was too early for the finer varieties, but the Peas lacked quality and sweetness of flavour. The pods and Peas also seemed smaller than at home. Mushrooms are plentiful and good in Paris. The largeness of the heaps in the Halles Centrales, and other markets contrasted favourably with the English punnet baskets, and show that they do Mushrooms better, or at least more plentifully, in Paris. The Mushrooms also bore traces of their different origin or culture to ours on their crowns, most of them exhibiting a liberal sprinkling of sand grains over their surface, and thus being in a manner racy of the soil which has been employed to cover them in the pits or caves from which most of them have been gathered. Few of the Mushrooms offered in the Paris markets have got beyond the "button" stage. This

is as it should be. Those familiar with the culture, cooking, and eating of Mushrooms are not seldom amazed at the huge floppy things that are offered in English markets and sent to table in private families. They are all very well for those who prefer to eat their ketchup in the fungus, to drawing it duly spiced and prepared from the cruet-stand. But the French know better; they have reduced the growing, cooking, and eating of Mushrooms to something like an exact science. Hence they gather them young to obtain a rapid succession of crops, and also to command the first condition of success in all successful cooking—that the thing to be cooked should have all its richest juices and most delicate flavours and textures intact. This is the case with the French Mushrooms when fresh gathered. They are not only very plentiful but very good, and are in universal request not only for flavouring and garnishing, but also for eating.

England decidedly has it in the matter of Onions, though in Garlic and Shallots the French excel. Tomatos had hardly appeared in June, though, of course, they form a most important feature in the markets later in the season. The same remark applies to many other vegetables, such as Cardoons, Salsify, Haricots, Celery, &c. Even French Beans were scarce in June, while Runners were conspicuous by their absence. Egg-plants, both white and purple, were however present, and seem to be used to a considerable extent in Paris. Herbs were more plentiful than at home, especially Chervil, while Parsley was comparatively scarce, and not equal to English grown. But the balance of the greens was abundantly rectified by the enormous preponderance of Sorrel, mostly the boat-leaved variety. Radishes were by no means plentiful, and Beet had scarcely appeared. Neither did I notice that earliest and best of all Beets, the Egyptian Turnip-rooted, which comes in so early, and is equal in colour and flavour to the finest strains of the ordinary formed varieties. Neither is June the season of Chicory, though it proved to be of green curled Endive, which surprised me perhaps as much as anything I saw in Paris. In every market and shop this was offered for sale, and everywhere it was alike good—dense, blanched heads, ranging from 6 inches to 1 foot or more in diameter, beautifully white and tender, with no tendency to bolt. Good Endive is plentiful enough in Covent Garden and other markets and small gardens in England in the autumn, winter, and early spring, but is seldom or never met with in June; but little of the plain-leaved Endive was seen, and fewer Cabbage Lettuces. The latter do not seem popular in France, and are seldom or never used in salads. The Cos Lettuces did not seem widely different or superior to good English grown ones. They were of good average size, crisp and tender, but as to flavour it is difficult to make comparisons, for that is swamped in oil in most French salads. The quantities of Lettuce and Endive brought to market, sold and consumed, must be seen to be realised. Small salading, such as Mustard-and-Cress, and even Watercresses, seem to have found no place in the Parisian markets and shops.

But what shall we say of the Asparagus in the Parisian markets? Only this—that we saw thousands of bunches and huge basketfuls in the Halles Centrales and other Parisian markets equal—yes, superior—to the finest sensational hundreds ever seen in Central Avenue, Covent Garden, or elsewhere in Britain. June is the middle, or rather tending towards the end of, the Argenteuil Asparagus season, and the display was in every sense magnificent. There can hardly be two opinions about the desirability of coming up to the French standard in regard to size; but the testimony of good judges and my own experience proved on the spot that Asparagus blanched to the tips was by no means better to eat or more profitable to grow than green. That the crop pays well, however, there can be no doubt, else so much good land and skilled labour would not continue to be devoted to this special industry. It is also said that the old-fashioned town of Argenteuil and several other districts are growing rich by the cultivation of Asparagus, the gross value of the crop being estimated at several thousands sterling a year. Though the major portion of the Asparagus offered is uniformly fine in quality, yet a considerable amount of smaller and also greener "grass" is offered at a much cheaper rate, which brings this delicious vegetable within reach of all ranks and conditions of the people. It is mostly packed in baskets, with long green grass as a buffer between the bunches, which gives the Asparagus a cool and fresh appearance.

Cucumbers were mostly white, and by no means so good nor so plentiful as at home. There seems far less demand for Cucumbers and a less perfect knowledge of the best condition to use them. The white Cucumbers, for example, are thick, gross, and strong, such as few good judges of Cucumbers would eat in England; the colour would also be objectionable to English tastes. The French grow a good many Gourds, which had not come in, but do not seem to largely patronise our Vegetable Marrows, of which I saw none. A French cook somewhat startled me the other day by asking for two or three Melons; I found he meant Vegetable Marrows.

The fruit in the Parisian markets in June may be dismissed in two or three sentences. There is an entire absence of the finer fruits, which adds such a richness to Covent Garden and our other English markets and fruiterers' shops. The French fruits consisted of Strawberries, Cherries, green Almonds, and a few Apricots. The quality of the two first did not equal those met with in England, though Strawberries were fine and so plentiful as to be exported to England. The flavour was also pretty good, but by no means equal to the finer samples at home. Cherries seemed nearly all alike, and not at all to be compared to the black, white, and other "Hearts" with which British fruit-growers have made us familiar. The common red and white alpine Strawberries, gathered on the stalks and tied up in bunches, were also offered for sale, though not in quantities. A very few Apricots, small, and pale in colour, and with little flavour, were also seen. No Gooseberries, and but few Currants or Raspberries were in the markets; it was also, I presume, too early for Apples, Pears, and Plums. The season had also been as unfavourable for fruit in France as in England, so that there was little or no fruit. The French mode of protection, of which we have heard a good deal, seems to have utterly broken down this season. Peaches and Nectarines, of which there is but a scant crop in most localities, and none in many places, had of course not come in.

Little or no fruit seems forced for market in France, and any there may have been had not found its way to the markets or shops in June. Not a bunch of Grapes, a dish of Peaches, Nectarines, Figs, nor a single Melon, nor French-grown Pine-apple were seen in Paris at that season. The contrast between the two countries in these respects was most striking. No doubt the differences in the tastes, customs, and habits of the two nations partly explain the causes of the contrast. The superior climate of the South of France and the colony of Algiers likewise checks the forcing of superior fruit. It is easier and also cheaper to wait than to work for it. Besides, difficulty has ever proved the sharpest spur to exertion, and doubtless our fine forced Grapes, Pines, Peaches, Melons, and other fruits are, to a very great extent, the legitimate products of our somewhat harsh and proverbially unstable climate. This, however, as it may, my chief purpose here and now is not to explain the scarcity of superior fruit in Paris, but merely to chronicle the fact. *D. T. Fish.*

PELARGONIUM INQUINANS.

PELARGONIUM INQUINANS is interesting as being the parent from which the plain-leaved race of varieties, represented by Tom Thumb, Warrior, &c., have been produced. How far these modern varieties excel the ancient form, our illustration (fig. 38) will show. This modification and improvement have cost about half-a-century of labour on the part of the florist, the rate of progress being in inverse proportion to the distance of time. Some of us in our younger days knew the variety called Bath Scarlet, an improved form of P. inquinans, but how far behind the modern forms does it rank? It was not, however, till after the advent of Tom Thumb, some thirty years ago or more, that much progress was made in the improvement of the flower, but since that time the advance has been more rapid. The zonate race originating in P. zonale has, moreover, been brought into contact with P. inquinans, and the intermixture of the two has given us the splendid varieties we now possess. At the present day indeed the varieties of P. zonale are the most numerous and perhaps the most advanced. It is to the improvement of these flowers and of the allied groups of show and other varieties, that the Pelargonium Society, which held its fourth anniversary on Wednesday last, is devoting its best energies, and not without a fair measure of success. *T. M.*

AN ARBORICULTURAL EXCURSION.

ON Monday, the 6th inst., members of the Scottish Arboricultural Society paid a visit of inspection to the woods of Scone and Lynedoch, estates of the Earl of Mansfield. This was the first of what is intended to be a series of annual excursions to the more important plantations and forests in Scotland and England with the object of practical study of arboriculture. The members were summoned by circular to meet at Perth Railway Station at 10.30 A.M. Those who arrived by the southern trains had some time to wait the arrival of those from the north. The interval was occupied in inspecting the trees in the central avenue on the south side of the town. These included a handsome Ash with a splendid head, 75 feet high, 15 feet in girth, 5 feet from the ground, and a spread of branches in circumference of 189 feet. The tree is computed to be 250 years old. A Scotch Elm, 70 feet high, 11 feet in girth at 5 feet from the ground, and with a spread of branches covering a circular area of 200 feet; a Beech, 75 feet in height, 11 feet in girth; and a grey Poplar, apparently 45 years old, over 60 feet high, and 10 feet 3 inches in circumference, were also noticed. As the hard impervious road covers half the rootage of these fine trees, they can scarcely have fair play in growth. Gratings such as are used in the boulevards of Paris, to allow of water to reach the road-covered portions of the roots, would promote the growth and lengthen the existence of these stately trees. When the party was fully made up, a start was made in five waggonettes for Scone, under the direction of Mr. Wm. McCorquodale, forester and wood surveyor. Among the members present were Professor Balfour, Edinburgh; Mr. Thos. Methven, Edinburgh; Hon. Waldegrave Leslie, Messrs. John Ord Mackenzie, James Alexander, Jun., Edinburgh; William Stewart, Dundee; Malcolm Dunn, Dalkeith; C. S. France, Penicuik; Edmund Sang, Kirkcaldy; Wm. McCorquodale, Scone; John Anderson, Perth; William Gough, Wykeham; John W. Barry, York; Archibald Skirving, Duncombe Park; John Davidson, Auldbar; James Kay, Bute; John Grant, Daldowie; James Mitchell, Donibristle; Thomas Dow, Idvies; James Robertson, Panmure; George Dodds, Hawkhead; John B. Smyth, Duff House; Richard Hartland, Cork; John Pears Hutton, Edinburgh; Wm. Gorrie, Trinity, Edinburgh; Robert Maxton, Strathallan; William Erskine, Oaklands, Edinburgh; William Strang, Scone; M. Jackson, Perth; George Crichton, treasurer; and John Sadler, secretary.

Among the visitors present on invitation were:—Dr. Pryde, Edinburgh; Messrs. J. Bosworth, Royal Engineer Department, Horse Guards; James Scrymgeour, Dundee; E. Dangerfield, factor, Scone; Halliday, Scone Gardens; Macdonald, Scone; R. Black, Liberton, &c.

The weather, though misty and dull in the morning, cleared up as the forenoon advanced, and a more charming day could not have been desired for a roam through the lovely woods on Lord Mansfield's estates. After leaving Perth fairly behind, Mr. McCorquodale first directed the attention of the party to a magnificent Weeping Beech of very graceful mien, planted thirty-five years ago, and now 45 feet high. Many black Italian Poplars, considerably over 100 feet in height, were passed till the Scone wood was reached. The trees here are seventy years of age, and many of the Larches are from 80 to 90 feet high, and contain from 60 to 80 cubic feet of timber. Passing next to the Burnside Wood, a splendid plantation of Scots Fir was shown. Mr. McCorquodale said that most arboriculturists were aware that there was a general belief that a crop of Scots Fir would not succeed after a crop of the same forest trees had been removed; but the wood in which the party now was, disproved that theory. The soil was black moorish, with a hard till underneath, and the ground having been drained the young trees were simply "notched" in. Two years after planting the young trees he found some dying off, and on careful investigation it proved to be from the ravages of the beetle, Hylobius abietis. He put a layer of fresh earth round every tree, and above that layer a quarter of an inch of the flour of hot lime. From that time forward he had never had a dead plant. Mr. Gorrie

stated as an illustration of the tenacity of life of the beetle, that he had steeped some specimens in whisky for twelve hours, and then starved them for five or six days, after which they were as lively as ever. Leaving the wood, Pyrola uniflora, a small rare alpine plant, was found. The plant is very rare in Scotland.

From the Scots Fir wood a move was made past an experimental plantation where thirty-two of the newest varieties of Coniferæ are growing. Next to Abies

the ground, and has 76 cubic feet of timber. The second is about the same height, is 7 feet in circumference, and has 93½ cubic feet of timber; and the third has a stem of 57 feet, girths 6 feet 9 inches, and has 114 cubic feet of timber. The first is the Quercus sessiliflora variety, and the two latter the pedunculata. At the old Blairgowrie road are several noble Ashes, 105 feet in height and 150 years old. A glance was given at the fine Lime avenue, 600 yards in length,

formed by the "toom" from the barons' boots. A little to the north-west of this spot, and embowered by lordly trees, is a fine old cross—all that remains of the ancient royal burgh of Scone. On a sloping bank at the south-west front of the palace is a Sycamore planted by Mary Queen of Scots. Although the west fork has been broken off the tree it is still a beautiful one, and stands 63 feet high, measuring 13 feet 1 inch in circumference 5 feet from the ground.



Fig. 38.—Pelargonium inquinans. (see p. 204.)

Douglasii, A. Menziesii grows the largest and strongest, but from some unexplained cause these fine trees are dying right and left this summer. Some arboriculturists blame the late spring frosts. Passing Balboughty, Lord Mansfield's home farm, the party took a run through the spacious and well-kept byres and stables, and then hurried on to the policies of Scone Palace. In an outlying plantation were three Oaks of wonderful size for their age. They were planted in 1808, and the first has a fine stem of 56 feet, to the head the height is over 80 feet; it girths 5 feet 7 inches at 5 feet from

previous to an inspection of the Boothill, now the Mansfield burying-ground, and planted with several fine Cedars, Sycamores, Elms, and Beeches.

When the ancient kings of Scotland were crowned at the Royal Palace of Scone, on the stone now located in Westminster Abbey, all the nobles were present. In order, so tradition says, that the independence of the barons should be maintained, each brought with him from his estate a small quantity of earth, which he placed in his boots on coronation day, so that he might say he stood each on his own ground during the ceremony. The Boothill was gradually

Nearer the river and in a hollow is an Oak planted by King James V. It is a magnificent tree, with a spread of branches of 75 feet. It is 55 feet high, 15 feet in girth at the swell, 14 feet 1 inch at 3 feet from the ground, and 13 feet 3 inches at 5 feet from the ground. On the terrace to the east of the palace is a Sycamore planted by King James VI. of Scotland and I. of England. Standing 80 feet high, with a noble umbrageous head, it girths 12 feet at 4 feet from the ground. Among the other notable trees in the park are an American Scarlet Oak in splendid foliage, with a girth of 8 feet 2 inches; a

Turkey Oak, with thick umbrageous head and a circumference of stem at 5 feet from the ground of 8 feet 7 inches; a Douglas Pine, raised from the first seed sent in 1827 to this country from British Columbia, 75 feet in height and 7 in girth; a Wych Elm, 95 feet high and 6 feet 7 inches in circumference.

North of the old Scone burying-ground, in which are some stones of the early part of the fifteenth century, including that of the sixteenth Abbot of Scone, who flourished when the battle of Flodden was fought—is an Oak planted in 1809. With 40 feet of a straight stem, this Oak stands 70 feet in height. It is at the root 10 feet 2 inches in circumference, and at 5 feet from the ground 8 feet 2 inches. The pinetum, next visited, has some fine specimens of Abies Menziesii, Picea Nordmanniana, P. nobilis, Wellingtonia gigantea, Araucaria, and Pinus monticola. Leaving the policies the party drove to Lynedoch Woods by the Stanley Road, passing on the way an avenue half a mile long of Purple Beeches—the only one in the country.

En passant, it may be stated, as an illustration of the profitable nature of arboriculture, pursued commercially, that 15 acres of Muirward Wood, a plantation on the Scone estate which extends to 400 acres, and consists chiefly of Scotch Fir, were recently sold at the rate of £132 per acre. This is irrespective of a large annual revenue from thinnings. In Drumshagles wood, planted sixty years ago, and which some men on the estate remember to have been cropped with Wheat, there is now a grand plantation of Oaks and Spruces—the former averaging 70 feet in height and 5 feet in girth, while the latter are from 80 to 90 feet high, and from 6 to 7 feet in circumference of stem.

Comparatively little time was left to inspect the magnificent woods of Lynedoch, but the party did not fail to admire and measure the great Silver Fir—one of the finest in Great Britain—110 feet high, and with timber up to 84 feet. It is about 150 years old, girths 13 feet 4 inches at 5 feet from the ground, and contains 425 cubic feet of timber. There are also two of the best and largest Douglas Pines in Britain on the slopes of the Almond, the first being 85 feet high, 9 feet 7 inches in circumference at 5 feet from the ground, and containing 132 cubic feet of timber. The second, which, like the first, was planted in 1834, though, unfortunately, it lost its leader several times, stands 85 feet high, with a spread of branches of 70 feet. It girths 9 feet 3 inches at 5 feet from the ground, and contains 121 cubic feet of timber. In the course of the afternoon the party had an opportunity of inspecting Lord Mansfield's art treasures in the saloon of Scone Palace.

Before leaving the grounds of Lynedoch, luncheon was served on a high bank overlooking one of the fairest panoramas in Scotland, embracing a long stretch of the valley of the Almond. Professor Balfour proposed "The Health of the Earl of Mansfield," through whose kindness the Scottish Arboricultural Society had spent such a happy and profitable day. Mr. E. Dangerfield, factor on the estates, replied, stating that his Lordship was always glad to receive visitors who came to his grounds in the pursuit of science. Hon. Waldegrave Leslie proposed the "Healths of Mr. Dangerfield and Mr. McCorquodale," who had acted as their guides that day. He dwelt on the importance of arboriculture both from a proprietor's and a national point of view, and said that a man like Mr. McCorquodale, who had planted over two millions of trees, had grown them up, thinned them, and sold them for the benefit of his proprietor, was worthy of all honour. Mr. McCorquodale, in responding for the toast, expressed the delight at meeting the members of the Society in Scone and Lynedoch woods. He had at the meetings of the Society in Edinburgh frequently urged the importance of such excursions. It was all very well to read essays and discuss them indoors, but such practical demonstrations as they had had that day would do much more to elevate the profession of forestry.

Among other toasts were "Messrs. Halliday and Macdonald," the gardener and clerk of works, "The Scottish Arboricultural Society," "Professor Balfour," and "Mr. Sadler," secretary of the Society, upon whom had devolved all the arrangements of the excursion, which were most complete.

The party thereafter drove to Perth, where they arrived at seven o'clock, in time for the trains north and south, after so pleasantly and profitably spending nearly eight hours in the woods. *J. S.*

REMARKS ON THE FRUIT CROPS, 1878.

The following is the concluding portion of the supplementary reports kindly furnished by our correspondents, and we give them under the heading of counties in the order of their importance as fruit producing centres as shown by the Agricultural Returns for 1877. Thus the acreage of arable or grass lands, used also for fruit trees of any kind, was in the three Ridings of Yorkshire 2983 acres; Monmouth, 2932; Wilts, 2393; Lancashire, 1974; Sussex, 1707; Bucks, 1627; Norfolk, 1534; Notts, 1508; Berks, 1422; Cheshire, 1384; Cambridge, 1377; Lincoln, 1282; Essex, 1224; Hants, 1173; Herts, 1080; Suffolk, 1041; Warwick, 991; Oxford, 869; Stafford, 850; Derby, 690; Leicester, 633; Northampton, 539; Beds, 395; Cumberland, 305; Hunts, 242; Westmoreland, 211; Durham, 197; Northumberland, 177; and Rutland, 58.

York.—With the exception of Raspberries and Currants the crop of all other kinds of fruit is light. Strawberries showed plenty of blossoms, but either through the blossoms being weak and imperfect or from the very heavy rainfall whilst they were in bloom, the crop was a light one. Nectarines are light. Of Plums the Victoria is in general heavily laden. The Golden Drop, Goliah, Pond's Seedling, and Jefferson are moderate on walls. Green Gage rather thin. Apples are a great failure. Pears are only a moderate crop, and the fruit not likely to get to any size. The principal cause of the failure of the crop this season is the cold sunless summer of 1877. *M. Saul, Sourton, Knaresborough.*

—— Another bad fruit season. Pears either on walls or pyramids had but little bloom. Apple trees bloomed abundantly, set fairly well, but much of the fruit fell off while quite small. Morello Cherries on north walls are nearly a total failure. Strawberries were the best crop of outdoor fruit, but owing to exceedingly hot and dry weather their season was a very short one. *John Young, Wentworth.*

—— Apples are a light crop on the whole. The same remark applies to Apricots, though I have seen some few good crops, where the soil was light and the wood got well ripened last year. Peaches and Nectarines are thin. We picked a few ripe Early Louise from a wall tree on the 25th inst. Pears are partial. We have a fair sprinkling of some sorts, viz., Marie Louise, Jargonelle, Louise Bonne of Jersey, and Comte de Lamy. Plums are good on walls, but thin on standards. Jefferson, Green Gage, and Victoria are all reliable sorts on walls here. Cherries are thin, even Morellos, which usually bear good crops. Small fruits, with the exception of Gooseberries, are good crops. I do not think that the frosts in the spring had so much to do with our light fruit crops as the cold wet weather last autumn. We had plenty of bloom, but it was weak and imperfectly developed, and where well protected from frosts it never set and swelled away. Fruit trees are in fine health now, and everything promises well for a fine crop next year. *H. J. Clayton, Grimston Park Gardens, Tadcaster.*

—— The Apple crop is a failure generally, although we had a good promise up to May 19, when the blooms were destroyed by hail and snow, followed by 7° of frost. *William Culverwell, Thorpe Perrow, Bedale.*

—— Fruit of all kinds generally very scarce. On light thin soils small fruits poor in size and quality, from want of moisture. Apples in orchards suffering from the same cause, shedding both leaf and fruit. *Robert C. Kingston, Brantingham Thorpe, Brough.*

—— In this cold hilly district fruit crops are as a whole satisfactory, especially Apples, Apricots, Cherries, and Peaches, which are generally good both in crop and quality. Pears and Plums uneven and patchy, some trees bearing heavy crops and others almost barren. The cold wet weather we had in May and the early part of June did much damage to the small fruits and Strawberries. *J. McIndoe, Hutton House, Guisborough.*

Wilts.—After all that has been said and done respecting the chances of the fruit crop of 1878, and notwithstanding the sad forebodings indulged so freely in (and not without just cause) by many of your correspondents, I think the present year's crop, if not better, is quite equal to our fondest anticipation. Peaches of the following varieties are carrying very heavy crops, which all promise to finish satisfactorily:—Violette Hâtive, Noblesse, Bellegarde, Têton de Venus, and Early Beatrice (from the latter we have been picking nice fruit since the middle of July in the open). Nectarines as follows:—Rivers' Orange, Elruge, Violette Hâtive, and New White. Plums:—Green Gage a very heavy crop where protected; Plums without protection and carrying good crops are as follows:—Reine Claude, Violet Orleans, Fonthill, Pond's Seedling (fine for bottling), Drap d'Or, Coe's Golden Drop, Denyer's Victoria. Apricots:—Shipley and Moorpark very heavily cropped. The frosts on the nights of March 23, April 2 and 23 (when the thermometer registered 12°, 12°, and 9° of frost) spoiled the Cherry and Pear crop; however, some trees are heavily cropped, as also are some Apple trees, but on the whole the crop is very much below average. Bush fruit in abundance—I never remember seeing such fine crops, and as good as fine. Also Strawberries have been very abundant and fine. Mulberry trees are cropped heavily. Figs are also plentiful. Raspberries, I should mention, have been tremendous crops. *H. W. Ward, Longford Castle.*

Lancashire.—The fruit crops in this district are a fair average except Peaches and Plums, which are never looked for out-of-doors unless after an exceedingly favourable autumn to ripen the wood, and a mild spring immediately succeeding. Apples and Pears are in many cases quite a full crop, notwithstanding the severe weather during the blossoming period. The simple fact is, we are better off in this respect than our friends in the South through our trees not being in full flower when the weather was at its worst. The Pear blossom seemed parched and dried up with frost and cold winds, but the outer scales of the flowers only were injured, and all the internal organs opened out strong and healthy and set well, though many fruits have fallen in cold districts, no doubt the result of heavy soils and a variable climate. Small fruits generally are a full crop. *W. Hinds, Otterspool, near Liverpool.*

—— Apples flowered abundantly, but the blossom seemed deficient in vigour and set imperfectly, and at least three-fourths of the fruit has fallen off during the past three weeks. Strawberries have been an enormous crop, and the quality for this district unusually good. Pears are a very poor crop. Peaches, Nectarines, Figs, and Apricots, do not succeed in the open air in this locality. *A. Jamieson, The Gardens, Haigh Hall, Wigan.*

—— We had plenty of bloom on all kinds of fruit trees, but the wood not being well ripened last autumn, and there being a continuance of east wind in the spring of this year, attended with an over-average of rain and low temperature, when the trees were in bloom, many of them shed all their bloom, and others partially, thus materially reducing our fruit crops for 1878. *Henry Lindsay, Huntroyde, Padiham.*

Sussex.—We have not an average crop of fruit. The spring was not remarkable for frost, but we had harsh winds and an incredible quantity of rain. *Joseph Rust, Eridge Castle, Tunbridge Wells.*

—— Apples: There was a great promise here of a very large crop early in the season, but lately they have been coming down in showers, especially Warner's King, Hawthornden, Keswick Codlin, Blenheim Orange, Downton, Ribston Pippin, and many other well-known kinds. Still I think it an average crop. The trees are healthy and growing fast, and fruit will be a good colour. *Sidney Ford, Leonardslee, Horsham.*

—— Plums, Apples, and Pears are improving; they seem to have enjoyed the heat. Plum trees are much affected with blight. Apricots are earlier than usual. *Geo. Breese, Petworth.*

—— Some varieties of Apples are very plentiful, and promise to be very good, but on the whole not quite an average crop. Peaches and Nectarines a heavy crop, looking most promising. Most varieties of Pears are very light. Figs the lightest crop I have known in this neighbourhood. *F. Rutland, Goodwood.*

Bucks.—Fruit trees of all kinds had a good show of blossom this spring, and it seemed to set a good crop; but on many of the trees the fruit all fell off about the middle of May. Damsons and Plums, which are grown extensively in this district, are only about half a crop. This is the fourth year in which these fruits have failed round here. *J. Smith, Montmore, Leighton Buzzard.*

—— Early in the spring there was a great promise of all kinds of fruit, the blossom was never more promising; but the quantity of rain and cutting wind did great damage, and in some places the crops suffered much. On the whole there is not a general crop throughout this part of the country. *Philip Frost, Dropmore.*

Norfolk.—I think we are, with the exception of Plums, shorter of all outdoor fruits than we have been for the last six seasons. I never saw finer Apple and Cherry bloom, but the constant wet and cold, without sun, I think, is the cause of so many failures. Pears short of bloom and fruit. *Charles Penny, Sandringham, King's Lynn.*

—— All small fruits were very good and plentiful. Apples in some gardens are very full, in others thin. Plums are very plentiful, both on the walls and standards trees. Apricots are the scarcest of anything. *Thos. Wynne, Wroxham Hall, Norwich.*

—— The fruit crop in this district is very deficient in quantity. Where there was a fair crop of fruit, such as Apples, Apricots, Plums and Pears on the trees they are being thinned by falling off; I never saw Apricots fall off the trees at such a rate before. All the trees are very healthy, making an

abundance of shoots after midsummer pinching and pruning. *W. Bishop, Bylaugh Park, East Dereham.*

Nottingham.—There was an abundant show of bloom on Apples, Pears, Plums and Cherries, and no severe spring frosts to injure the setting of the fruit; the promise therefore of a good fruit year was entertained by all growers. In the course of the month of May the weather was wet nearly every day, with a low temperature for the season, and the young fruit dropped off in quantities. The foliage of Apples, likewise, showed on most trees a blighted appearance, and aphis attacked the young shoots in a worse form than usual. Gooseberries and Currants were likewise attacked on the joints of the young shoots by them, and although the crops of these fruits were good, the quality of the fruit was much deteriorated. Strawberries during the heavy rains in May when in flower did not set so well, but the crops were good, but their season was over soon owing to the hot weather now prevailing. Raspberries a good crop, but the fruit smaller than usual. *W. Tillery, Welbeck.*

—— Early in spring the fruit prospects were promising, but the cold and low temperature with long-continued rain through May told on many of the fruits then in bloom. Many that appeared to set are now dropping off, Apples and Plums especially. The wood of most of all our fruits never got a good, firm, ripe appearance last autumn. *A. Henderson, Thoresby.*

—— Fruit trees generally are much infested with insects, and large quantities of the fruit are falling off. Not a Medlar or Quince to be seen anywhere. Damsons a heavy crop. *Henry Gadd, Wollaton Hall, Nottingham.*

Berks.—The fruit crops about here will be very far short of what they were expected to be in spring. Apples will not be so plentiful as they were last year; the trees bloomed well, and plenty of them set for a full crop, but fully three-fourths have dropped off, and they keep dropping even now. Many of the trees do not look well, they have a scorched appearance, and the ends of the young growths are quite dead. A few sorts look healthy, and are bearing nearly an average crop; they are Keswick Codlin, Eclinville Seedling, Northern Greening, Lewis' Incomparable, Tower of Glamis, and a few others. Pears will be about one-third of a crop, but they will be small—Marie Louise and Josephine de Malines look best. There are plenty of Beurré Rance, but they are cracking, and likely to be worthless. Cherries of the early sorts have been plentiful and good, but Morellos are a light crop. Plums on walls are a full average crop still, although many of them have dropped. Peaches and Nectarines will be nearly half a crop, and the trees look well. There are scarcely any Apricots, we very seldom get a crop of them. *Charles Ross, Welford Park, Newbury.*

—— The fruit crops, as a whole, both here and round this neighbourhood, are very good. Some kinds of Apples are thin, such as Blenheim and Wellington; but most other varieties are bearing heavily. Plums are most abundant everywhere, also Cherries. Pears are thin, as a rule; but there was a scarcity of bloom, which will account for it. Apricots, Peaches, and Nectarines are most abundant, and all winter fruit promises to be of excellent quality. *T. Jones, Royal Gardens, Windsor.*

—— Peaches are an average crop where protected, the best croppers being Early Grosse Mignonne, Royal George, Early Alfred, and Royal Charlotte; Early Silver is also a very fine Peach outside. Apples a thin crop, so many having fallen off, but the quality promises to be good. Pears a thin crop; Bon Chrétien, Louise Bonne of Jersey, Jargonelle, Beurré Diel, are the only ones carrying a good crop. *Joshua Atkins, Lockinge Gardens.*

Cheshire.—Although there was a large show of blossoms on most fruit trees at the time of flowering a great part fell off without setting or forming fruit and with the exception of Plums and Damsons, o which there are more abundant crops than for several years past, all other fruits (except Strawberries, which were very plentiful and good, and Raspberries, about an average crop) are under the average. As there were no late spring frosts to injure the blossoms or embryo fruit, I have no doubt the cause was the low temperature and absence of light and sun last autumn, through which the wood was imperfectly ripened. Trees of some varieties have good or moderate crops of fruit, but generally they are much below the average. *William Whittaker, Crewe Hall.*

—— We never had a better promise for Pears as regards their blossoming, but the long continuance of east wind quite destroyed them. Apples seemed to set fairly well, but no sooner had the dry, hot weather set in than they came down in showers. I can safely say this is the worst Apple year we have had for a dozen. *W. Muir, Oulton Park, Tarporley.*

—— A very poor fruit year, with the exception of Strawberries and Plums. Apples bloomed freely but set badly, and the fruit keeps dropping off even to this date. On low-lying ground the Gooseberries were destroyed by frost when they were the size of Peas. *Thomas Selwood, Eaton Hall, Chester.*

Lincoln.—I think the Apple crop in this neighbourhood will be much below the average; Pears a little under average, as they have fallen much of late. *George B. Tillyard, Brocklesby Park, Ulceby.*

—— Apples are a very poor crop, although we had a beautiful show of blossom, but suffered from frosts in March and April, and much of the fruit has dropped off: the same may be said of Cherries and Plums. Pears are a very poor crop, being in full bloom during the sharp frosts in April. Apricots, Peaches, and Nectarines, are a fair crop where well protected, but where not covered up are a failure. Gooseberries suffered from frosts, and very much from bullfinches. Strawberries an extraordinary crop, Garibaldi being the main crop. Walnuts a very poor crop; Filberts a failure. *D. Lumsden, Bloxholm Hall, Sleaford.*

Essex.—Taken for all in all, the fruit crop in our immediate neighbourhood is considered an average. Small fruits have been abundant generally, and cheap. In some places excellent crops of Apples are to be seen, these chiefly on soils possessing a dry subsoil. It is remarked that all kinds of preserve fruit exhibit an exceptionally large amount of fermentation this season—a fact likely to prove antagonistic to good keeping qualities. *William Earley, Ilford.*

—— Apricots were a poor crop, but were all killed, or nearly so, by the frost on April 1, even where covered with thick canvas. Plums a fair crop, but many of the early flowering ones were injured with the frost. Apples were never more promising with bloom, but very few set. Pears a small crop; many trees had no bloom. *J. Bryan, Audley End.*

Hants.—With the exception of Gooseberries, all kinds of small fruits are and have been excellent. Strawberries have borne prodigiously, especially President and Vicomtesse Héricart de Thury, the latter variety for all purposes, and have come to regard as the Strawberry *par excellence*. Apricots and Peaches were well protected with canvas and are excellent crops, and the trees have made healthy growth. Apples are very thin indeed, and yet the fruit set thickly, but fell off immediately, which I think may be attributable to the wet summer of last year, and consequent imperfection of buds. Pears on walls are an average crop, but standards are thin and many have no fruit at all. *W. Wildsmith, Heckfield Place.*

—— The fruit crops in this neighbourhood are not so good as was expected from the amount of bloom exhibited on the trees; but we had more moisture than was good for them at the time most fruit trees were in bloom. Gooseberries are very thin, owing to the severe frosts we had during the latter end of March and beginning of April. *J. Taverner, The Gardens, Woolmer Lodge.*

Herts.—Of Apples, a sort called Pine-apple Pippin and Lane's Prince Albert are bearing very good crops, but other sorts are very poor. Some Pear trees have splendid crops, others of same sorts had no bloom-buds, although similarly situated. Plums splendid crops on walls, Victoria good on standards. Gooseberries are light with exception of one called Sulphur, which had an abundant crop. *George Sage, Ashridge.*

—— Apricots in this district very partial; in some places a fair average crop, and in many scarcely any. Peaches and Nectarines generally good. Apples, with abundant bloom and every prospect of heavy crop, set badly, the greater portion of fruit falling when very young. Strawberries heavy crop and good. Currants and Raspberries most abundant and good. Gooseberries very few. *Richard Ruffell, Panshanger.*

—— Apricots were abundant where covered by Rendle's protectors. Cherries yielded good crops, but many spoiled by splitting, especially the Bigarreaus, through the heavy rains. Apples and Pears blossomed well, but set imperfectly, and were injured by the frost on the morning of April 1 after a wet night. Birds are more troublesome than I ever remember; it is next to impossible to keep them from the fruit, even by netting. *J. C. Mundell, Moor Park, Rickmansworth.*

Suffolk.—The fruit crops in the gardens here are the worst in my recollection. Some sorts of Apples are tolerable, such as King of the Pippins, Court Pendu-plat, Cellini, Lord Suffield, and Nonsuch; many of the other kinds are without a single fruit. Pears are in keeping with the Apple crop, Marie Louise and Beurré Rance on the wall, Louise Bonne of Jersey, Comte de Lamy, Knight's Monarch, and Althorpe Crassane on standards are the best; the trees generally are healthy and growing very strong. Apples in the neighbourhood are a partial crop, and Plums are very scarce. Peaches and Plums in the orchard-houses are abundant, but blackfly has been exceedingly troublesome. *Thomas Blair, Shrubland Park, Needham Market.*

—— The fruit crops this year are, on the whole, very disappointing, as during the early spring months there was every promise of great abundance, but the frosts and bad weather that prevailed with more or less severity towards the end of March so injured the blossoms that those which passed through the trying ordeal set but imperfectly, and the larger portion have since fallen off. Plums are an exception, but the fruit of these is so stunted and crippled that I very much doubt if it will ripen properly. Small or bush fruits have been scarce, especially Gooseberries, which are not a tenth of a crop. *J. S., Woolverstone Park.*

—— During the spring the fruit crop looked very promising indeed, but just as the trees were expanding their buds we experienced such severe frosts as completely wrecked our prospects for the year—the flowers and very young fruit on the Apricots and pyramidal Pear trees seemed to wither up from its effects, and could not set. Peaches and Nectarines that were protected with spare lights and other material have a fair crop, but there is absolutely none on the trees that were left unprotected. Apples are only a partial crop. *J. Mill, The Gardens, Rendlesham Hall.*

Warwick.—Blossom of Apricot killed by frost, a few late blossoms set, and are producing a few inferior fruits. Pears also suffered much by cold, and are thin; a few varieties are, however a full crop. Apples are more plentiful, but far under average. Cherries in orchards are under average. Peaches and Nectarines on walls out-of-doors are thin, but trees are making good growths. Plums are nearly *nil* everywhere. With the exception of Gooseberries, small fruits are plentiful and good. Strawberries were plentiful and good until hot weather arrived. Hazel Nuts plentiful, Walnuts are thin. Acorns on the British Oak are partial, on the Turkey Oak thin, on the American Scarlet Oak none. Beechmast none; trees scarcely recovered from heavy crop of last year. Horse Chestnuts thin: Spanish Chestnuts are plentiful. Ever since the opening of the bud I never remember seeing forest trees look better. The leafage is dark and healthy. The Oak has made a second growth, stronger in some instances even than the first. *William Miller, Combe Abbey.*

Oxford.—Apricots are a total failure in this neighbourhood, the same may be said of Apples. Peaches and Nectarines are very thin on the trees. Pears are not half a crop. Plums are a heavy crop. Cherries (Morellos), which flower very late, are the best crop I ever remember. Strawberries very good. Small fruits are almost an entire failure, especially Gooseberries. *Isaac Watson, Nuneham Park Gardens.*

—— In this district in the very early part of the season there never was a better prospect for Apples and Pears, whilst the results will be about the worst possible. The trees have been much blighted, and are now growing again—a by-no-means desirable thing. Apricots are a failure, with here and there a few favoured exceptions. Cherries and Plums are good crops—Morellos and Damsons especially so. Bush fruits have also been a fair crop; Strawberries enormous, but of short duration, excepting Elton Pine, Myatt's Eleanor, and a few other late kinds, which did not set properly—the result of so much wet and dull weather during their blooming. *William Crump, Blenheim.*

—— The Apple crop is all but a failure, and the best are on dwarf bushes or pyramids. Pears are considerably better. Plums are a most extraordinary crop, the trees being loaded both on the walls and standards. *John Greenshields, Sarsden House.*

Stafford.—Apples, Apricots, Pears, and Plums are very thin indeed in this district; but bush fruits generally are about an average crop, and Strawberries are unusually plentiful and fine. We had no frost to speak of while the trees were in blossom, and notwithstanding that the past spring was very wet and cold, and consequently unfavourable to the setting of fruit, still, had it not been for the unripened state of last year's wood, we might reasonably have expected a tolerable crop this season. *O. Thomas, Drayton Manor Gardens, Tamworth.*

—— Apricots are very little grown in this neighbourhood; what there are this season are small and deformed. Plums set very thick indeed, but many fell off in the spring and from blight, which gave us great trouble, so that constant syringing and hand-picking had to be resorted to. Many of the fruit are deformed, but the fruit generally is pretty good. Cherries are very good indeed, both dessert and Morello. Peaches and Nectarines won't do out-of-doors in this neighbourhood; indoor crops good. Apples very poor indeed. Pears only a few; this is not a Pear neighbourhood. Raspberries abundant and good; Currants also. Gooseberries not so good. Strawberries good crop, not very large, and the crop soon over from the dry weather. *W. Bennett, Rangemore, Burton-on-Trent.*

—— Apricots quite a failure. There was very little blossom. Owing to the excess of rain last summer and autumn the trees did not ripen their wood, consequently the flowers were weak, and when the trial came they fell to the ground. The same may be said of Peaches and Nectarines (of course this applies exclusively to trees not protected with glass). Plums are partial; some trees are bearing very heavy crops, others are fruitless. There was a fine blossom on Cherries, but all the sweet sorts dropped before coming to maturity. Apples are not satisfactory—the trees are much blighted, consequently the fruit does

not swell as we could wish. Pears are very partial; we have a few trees with heavy crops on, but many without a Pear on. Currants are plentiful; Gooseberries not so plentiful, being cut off with spring frosts. Strawberries very good, especially President. La Constante is a very good sort, continuing in bearing a long time. Altogether the fruit crop of 1878 will not be very satisfactory, at least not in this district. *E. Simpson, Wrottesley.*

Derby.—We had an abundance of bloom upon all kinds of fruit-trees, and up to May the prospects of a good general crop were never better; but since May (the usually fatal month) Apples, Pears, Peaches, and Nectarines have become with us almost a failure. We have a good crop of Peaches on some trees removed from the orchard-house to the open wall, after the wood was well ripened with the aid of fire-heat in the autumn, showing that a good sunny autumn to ripen the wood is as indispensable to a good fruit season as the absence of frost in the spring. *J. H. Goodacre, Elvaston.*

—— The fruit crops in the early parts of the season in this neighbourhood looked very promising, but excessive wet in May and June spoiled the bloom. During the two months above-named rain fell on above thirty-nine days, and amounted to 8.12 inches. *William Brown, Brelby Park Gardens, Burton-on-Trent.*

—— Our spring was characterised by an entire absence of frost; we only registered 1° in May, a most unusual thing in Derbyshire, and especially in the Peak district. It was a cold, sunless spring, with a great rainfall; upwards of 10½ inches fell in May and June. Vegetation was at a standstill, made but little progress, and our prospects up to June 20 were anything but cheering, but, thanks to the beautiful weather we have since had, vegetables and small fruit have made ample amends for an unfavourable start. *T. Speed, Chatsworth.*

—— Another year of untoward weather only shows the desirability of having such fruits as Peaches and Figs better under control and protection. Our Peaches and Nectarines were anything but beautiful during the months of March, April, and May. The biting high east winds during the latter end of March settled the question of fruit for this year. We protected with "Frigo Domo," but the cold driving wind and snow was too much for such covering. Apples gave good promise at the time of flower, but with the other extreme of wet the trees got completely blighted, and now what few fruits had set are dropping off: our crop will be thin. Wall Pears are thin, with the exception of Winter Nelis and Glou Morceau. Standard trees lifted and transplanted two years ago are well covered with fruit. Strawberries showed a good quantity of flower, which turned out well; the fruit was good. Raspberries were cut up with March frosts. Currants good and plentiful. *James W. Bayne, Kingston Hall.*

Leicester.—Apricots are a thin crop generally in this neighbourhood. Pears a very poor crop. Apples a thin crop, with a few exceptions. Cherries of all kinds are abundant, and excellent in quality. Peaches and Nectarines are very abundant, requiring much thinning. Strawberries have turned out much bettter than was expected at one time. Small fruits were a very great crop, with the exception of Gooseberries, but a good deal blighted. Plums are a good crop in this neighbourhood—in some instances very heavy. Figs were a great crop, but very many have fallen off. Nuts and Filberts a good crop, but Walnuts thin. *Montgomery Henderson, Cole Orton Hall.*

— - Young and vigorous Apricot trees have carried better crops than old trees. In two instances on a south wall a covering of Russian mats saved a crop. All my Apple and Pear trees lost what promised to be abundant crops of fruit, trees being sickly. Plums promise the greatest crop that has been seen for years. Cherries very abundant. Currants a good average crop, but Gooseberries thin. Strawberries very prolific. *William Ingram, Belvoir Castle.*

—— The Apple blossom was very abundant, but fruit is very scarce. Cherries promised to be very plentiful, but were imperfectly set, and the crop is only an average one. Pears are very scarce. Plums are the only crop that can be called good. Apricots were protected, or must have failed with 12° of frost when in bloom. There was no frost here to injure the Apple bloom. The wet and sunless summer of 1877 must be blamed. *John Kitley, Wanlip Hall.*

Northampton.—The Apple crops in this district are very inferior; indeed it is rather difficult to point out the true cause of failure. In the early stages of growth, flowering, setting of bloom, &c., there was every prospect of a fine crop, but these now have dwindled away to almost a total failure. Of Peaches and Nectarines we have a few; but our trees are very much blighted, and making poor and weakly growth. Of Plums we have good crops on the walls. The best are Angelina Burdett, Coe's Golden Drop, Green Gage, Coliah, Blve Impératrice, Jefferson, Magnum Bonum, Early Orleans, Reine Claude de Bavay, Standard of England, Washington, &c. Red Currants are very inferior in quantity, the branches, very small, having had the lower parts all destroyed by the heavy storms when in early growth. Gooseberries we have none at all. Apricots none, the few which we did set have fallen in stoning. Of Morello Cherries, we have had a few; trees are making no growth. Speaking on the whole fruit season here, I may say it is a failure. *George Beech, Castle Ashby.*

—— I find Dutch Mignone and Keswick Codlin sure bearers here, and both very useful. Apples and Pears are very thin both on walls and standards; the best bearers are Beurré Rance and Glou Morceau. Cherries outside, except Morellos, never do well here. *R. Gilbert, Burghley Park.*

Beds.—Much injured by the cold heavy rains and dull weather when in blossom, also much infested with aphis and mildew from the cold north-east winds in the spring. *G. Ford, Wrest Park, Ampthill.*

Cumberland.—Apples are very scarce here, and in this neighbourhood there was a good show of bloom and some set well, but have fallen off owing to the cold east winds we had here. Apricots are scarce from the same cause, and also Cherries; all other fruit except Peaches and Nectarines are a fair average crop and good. *F. Blackman, The Gardens, Eden Hall, Penrith.*

Westmoreland.—Almost a failure in Westmoreland, with our long cold and backward spring; the frost, registering 14° as late as May, quite destroyed all crops, such as Gooseberries, Currants, &c., while on the other hand we have had one of the best Strawberry seasons on record. Apples are very few; Pears very fine. Figs and Peach trees out-of-doors are fine. *R. Craig, Levens Hall, Milnthorpe.*

Durham.—Apples had abundance of blossom, but at that time we had a deal of rain, which hindered the setting of the blossoms; of late-flowering sorts the crop is under average. Pears do not do well here, nor Plums; we are too near the sea. Of Currants, Gooseberries, Raspberries, and Strawberries, there is a good average crop, but the latter fruit is suffering for want of rain. Peaches and Nectarines do not come to perfection, but generally set freely. *R. Draper, The Gardens, Seaham Hall.*

Northumberland.—Apples are a very thin crop with us this year, owing to the cold wet weather when in bloom. Gooseberries are a very thin crop; black Currants and red Currants are all very good, both in quality and quantity. *William Turner, Capheaton, Newcastle-on-Tyne.*

Rutland.—Peach trees, such as Royal Kensington and Noblesse, are carrying good crops, other sorts are not. Apricots are under average, although some trees are loaded with fruit. Plums are a failure, except Victoria and Rivers' Early Prolific. Morello Cherries are a good crop, and of excellent quality. Apples in general are very poor, and the foliage very much blighted. Pears are also very inferior both in quantity and quality; some trees bloomed well, others not at all. Small fruits have been both abundant and good in quality. Strawberries wonderfully fine; Nectarines are scarce. For the spring everything promised well for splendid crops of wall and other fruits, and the frosts were not very severe. I attribute the failure in most cases to the dull wet autumn of last year, the wood not getting properly ripened. *John Gray, Normanton Park.*

THORPE PERROW.

Before concluding our notes on the gardens at Thorpe Perrow, the residence of Mark Milbanke, Esq. (commenced at p. 11 of the present volume), we must take the opportunity of correcting a geographical error which we then inadvertently made. We should have said that Thorpe Perrow is situated in the North Riding of Yorkshire, and not the West.

We concluded at p. 13 with some observations on a remarkable specimen of the Gloire de Dijon Rose, which has completely taken possession of one side of a Holly tree, some 25 feet in height. Since then we have been favoured by Mr. Culverwell, who for so many years has worthily held the responsible post of gardener here, with a photograph of the object in question, which Mr. Smith has done his best in fig. 39 to copy. This grand old Rose grows at Thorpe Perrow in the greatest luxuriance, and flowers with extraordinary freedom even as a standard, one of which measures quite 10 feet through.

The kitchen garden is situated a little to the north of the mansion, and about 200 yards distant. There are about 3½ acres altogether, and the greater portion is within the walls, as well as the whole of the glass structures, which are lean-tos facing due south. Entering the first one—a vinery—we learn that it had been somewhat recently lengthened, that Grapes were in demand from July to Easter, and though the canes have to carry heavy crops they never fail to colour, and finish off well in other respects. The Vines before us were all Black Hamburghs, with the exception of a couple of Frontignans. The crop in weight was all that could be desired, the bunches running from 1 to 3lb. each—a most serviceable size. Growing underneath the Vines, in large pots and tubs, were some fine bushes of the Brown Turkey Fig, a fruit that is much appreciated.

The next house is a vinery and Peach-house combined, the Peaches—Noblesse and Royal George—being trained on a trellis in the usual manner, and the yearly growth of the Vines above them tied in by the side of the cane instead of at right angles. There are also Grapes on the back wall. Mr. Culverwell never over-crops his Peaches, and the result is seen in a good display of fruit of more than an average size. The Grapes, Black Hamburgh, West's St. Peter's, and Barbarossa, were carrying an excellent crop, and looked in the best health and vigour. Another vinery follows. This is a fine house with rafters 25 feet long, and the crop of Grapes Black Hamburgh, with Muscat of Alexandria and White Frontignan at the warmest end, as good as one could wish to see, with foliage clean and ample. The Muscats are grafted on the Royal Muscadine, and never fail to set a good, even crop. There is also another large vinery, the border of which was renewed last year, to the great advantage of the Vines, which are doing splendidly. Trebbiano and Gros Colman were carrying some fine bunches, and the berries of the latter, as usual, were of fine size. The Muscats are young, so that crops from them are favours to come.

Of plant-houses, properly speaking, there are none, but Mr. Culverwell manages to grow a few subjects for winter and spring flowering in exceedingly good style, and notably a good collection of large specimen Azaleas, which come in most usefully either for cutting or for furnishing the conservatory. Passing through the vineries we noticed a few Orchids, such as do well under cool treatment, as, for instance, Dendrobium nobile, Odontoglossum grande, Dendrobium speciosum and D. pulchellum, all represented by specimens in the very best condition; Oncidium flexuosum by a grandly developed plant more than 2 feet through; and smaller ones of Cypripedium villosum, insigne, and Maulei, which are valuable on account of their free-flowering qualities. Rhododendron Falconeri and Maddeni are also represented by fine bushes, which flower freely, and are greatly appreciated; and another good old plant, highly esteemed for winter flowering, is the pretty Monochæton ensiferum.

Most hardy fruits and all kinds of vegetables do well here, though the climate is described as wet and cold in winter. The soil is a loam of good substance, on a clay subsoil. We note that fruit generally is scarce, but on the walls we saw some fine crops of Marie Louise on trees, double worked on the Winter Nelis; and Mr. Culverwell remarked that the last-named variety, Joséphine de Malines, Glou Morceau, and Beurré d'Amanlis generally do exceedingly well. Doyenné du Comice and Huyshe's Prince Consort promise also to give good returns. Marie Louise, grafted on Beurré Rance, produces fine fruit, which keeps till after Christmas (a fact worth knowing); and the Beurré Superfin, grown as a standard on the Quince, here takes the place of Williams' Bon Chrétien, than which it has the desirable quality of keeping longer. On the Easter Beurré there was no crop at all, but there was a nice lot of fruit on the Plums, Blue Impératrice and Kirke's. Peaches and Apricots do well outside, but not Nectarines, and of the former we saw capital crops. Some trees of the Kentish preserving Cherry are like little Oaks, and carried enormous crops; and a special feature here are a number of gigantic black Currant bushes, some of them quite 12 feet through, which carried a splendid crop. The Apples which do best here are the Cockpit, a fine culinary variety almost unknown out of Yorkshire; Sturmer Pippin, which stands frost well; the King or Pound Apple, a very large culinary variety; Beauty of Kent, Bedfordshire Foundling, Dutch Mignonne, "almost the best Apple grown in the county;" Rymer, Blenheim Orange, a little tender but almost always good; King of the Pippins, and Norfolk Beefing, a good sort for winter keeping.

In the vegetable department the crops were abundant and good all round. Peas are a speciality of Mr. Culverwell's, and he is not unknown as a raiser,

at which work he has been engaged for several years. One of his seedlings, undergoing further trial, has pods longer than Superlative; it is a marrowfat and a strong grower, but was not forward enough for us to judge of its flavour. Another seedling, called Prolific Marrow, also gives good promise, but the best of all as yet is, we think, Culverwell's Telegraph, an early marrowfat sent out last spring, which grows about 5 feet high, and is a grand cropper. It makes its

A PEDESTRIAN TRIP ACROSS SOUTH AFRICA.

(*Continued from p.* 143.)

This part of South East Africa is certainly the most useful as well as the most beautiful of all its numerous districts. At present it is a dangerous part to settle in, although British territory since last year; for Sekukune claims the whole country north of Leydenberg, and as far as the Oliphant River. If natural boundaries, past rights, and prior occupation are taken into consideration, his claims are just. The tame, melancholy, stony and plateau scenery, so universal in South Africa, is here almost abolished, by the deep ravines and bases of hills being covered with a stunted but thick forest; and the sides and grassy tops of these ranges made picturesque by an abundance of herbaceous plants and Proteads. Amongst the Proteas I recognised P. obtusa, P. longiflora, P. laurifolia, P. coriacea, P. angustata, P. nana, and others which I knew not, varying in size from an Apple tree to a diminutive species with a lovely white tomentose flower, forming, as it were, undergrowth to the large species. These beautiful Proteas grew here at an altitude of 7000 feet and over, in a shallow, stony, turfy soil, resting on hard grey granite, and always on a slope, so as to ensure perfect drainage. The dryness of the position which they occupy is incredible, for except the heavy mist, which occasionally envelopes those mountains, they must often go for weeks together without water during the dry season. They shun all other vegetation, so that these mountain tops would be quite naked if the Proteas were to disappear—a catastrophe which, I fear, will eventually take place, through the pernicious and abominable practice of "firing the bush," which Boers and British settlers have inherited from the ignorant Kafirs. All the species of Protea possess an inflammable matter, which causes them to be the favourite fuel of settlers and travellers, and, of course, render them an easy prey to the destructive "bush fire;" in fact, one of the largest bush fires I have



Fig. 39.—The Gloire de Dijon Rose at Thorpe Perrow. (See p. 208.)

mark at the table, too, as well as the exhibition, and was well spoken of at several places we have called at since. Amongst salad plants Mr. Culverwell spoke in high terms of Messrs. Veitch's new strain of the Neapolitan Cabbage Lettuce, a large wrinkled-leaved variety of excellent quality; the sample we saw was a very true one.

To conclude, we may observe that gardening at Thorpe Perrow is ably carried out by Mr. Culverwell, who, besides being one of the best and most respected of gardeners, is an entomologist and ornithologist of no mean order.

ever seen was one raging through a forest of Proteas. These plants are called by settlers the Sugar Bush, and form the favourite haunt of Nectarinia, or the honey-bird; in fact, some species of these birds are limited to the Proteas.

It must be remembered that the country of which I am speaking is the termination of the Drakensberg Mountains, and is situated just out of the tropic of Capricorn, so that, working from one elevation to another, the vegetation must be varied and numerous, although it was in no wise rich, or what we might expect to find at such a latitude. About 200 miles to the north of this part, the Zoutpansberg and Spelunken Mountains present a far more luxuriant and tropical vegetation; a fact which I learned from several hunters and traders, besides having seen a few dried plants from there. It was my intention to collect in these mountains, by reaching them through the famous Sekukune's country; but for the last two years this chieftain has forbidden the white man to traverse his country, which is known to be extremely rich in natural history—plants and minerals, especially gold. As this country exists between the Drakensberg and the Spelunken, I was very anxious to pass through it; but all attempts were in vain, and the late Sekukune outbreak rendered it impossible.

To convey an idea of what may be expected farther north, I will describe a few of the best plants found in this district. The grassy level slopes and mountain tops, besides producing Proteas and Heaths, were extremely rich in herbaceous plants, which at this time of the year made the hill-sides sparkle with their bloom. Cyclopia genistoides, and another species, were very showy, and in places covered acres of ground; their short, compact and dumose habit, and wonderful display of orange flowers, collected in terminal racemes, ought to make them great favourites with English gardeners. Thymeleæ is one of the principal natural orders, and possesses some species of remarkable beauty, as Gnidia pinifolia, G. imbricata, G. tomentosa, G. sericea, G. pubescens, Passerina cephalophora, Lachnæa filamentosa, and L. eriocephala. Some of these Thymeleæ have a similar habit to the Cyclopias, with terminal heads of pale yellow woolly flowers. Salvia colorata, and the gorgeous Gerardia, made lovely pictures when intermixed with the Gnidia and Cyclopia. This species of Gerardia is a lovely plant, and has a most striking effect when growing in large masses on the sides of the hills, for its numerous and large white flowers, with minute leaves and prostrate habit, convey the idea of a patch of sparkling snow. It is herbaceous, and generally consists of three stems, about 1 foot in length, having a good supply of opposite, sessile, exstipulate, ovate-lanceolate leaves, of a bright green colour. Each leaf produces from its axil a solitary flower on a short peduncle; calyx campanulate, of four sepals, and about an inch in length; corolla of four petals, which form a tube 4 inches in length, and then spread out to a diameter of 2 inches. These large flowers stand erect from the prostrate stems, and are snow-white in colour.

Knowing the Gerardias of North America to be parasites, and that all attempts to introduce them have failed, I was greatly surprised to find this species only slightly parasitic on the roots of a dwarf-growing grass, and found no difficulty in transplanting it, as long as I allowed a little grass to grow with it. On pressing this it turns quite black, and the watery secretion in the corolla tube is a good substitute for ink. Towards the verge of the mountain levels the soil is very shallow, and the primitive rocks, which are here exposed, present romantic and grotesque appearances, from being much waterworn when this land was being elevated. Amongst these rocks the soil is a dark sandy loam, and in it I found several interesting plants—one in particular, a species of Acanthonema. This plant consists of one leaf, oblique, the largest 2 feet by 1 foot, very prominent veins, the upper surface glaucous and corrugated, beneath pale green, and thickly covered with red asperitous spots; margin sinuous, and deeply crenate. This large fleshy leaf lies flat upon the ground, and produces, from its base, a compound scorpoidal cyme, about 18 inches high, and bearing numerous dull red flowers. It was very abundant, but seems to be limited to this locality.

Another remarkable plant was a Vellozia—an indigenous branching shrub, with a peculiar and unusual habit, greatly enhanced by a good show of rich mauve flowers, suspended on long wiry peduncles. The stem is very firm, erect, 5 feet high, branching in an irregular manner, and covered with the persistent bases of the leaves. Leaves linear, spinose at the margin, 6—12 inches long, and on old plants form large tufts at the end of the branches, which, with the numerous, solitary and axillary flowers is a bouquet in itself. Where the soil amongst these rocks is of sufficient depth, numerous shrubs and small trees abound, some of which are exceedingly pretty and well worth the florist's attention. There was one lovely shrub, which I think belongs to or comes near the Escallonias; compact in habit, 3 feet high and upwards, with leaves opposite and alternate, ovate-acuminate, entire, glabrous and dark green; it was literally covered with large, terminal, compound corymbose panicles of bloom. The calyx consists of three brown membranaceous sepals; corolla of 6—7 linear and sinuous perigynous petals, an inch in length, and of a snow-white colour, with a dark rose base. To appreciate and understand the beauty of this shrub it must be seen growing amongst these rocks—usually the home of Aloes and other sombre-looking plants, amongst which this plant with its delicate bloom and aromatic odour seems entirely out of place.

Near to the banks of streams, in these valleys, where there are no trees, such plants as Ixias, Irids, Galaxia, Sparaxis pendula; Aspalathus sericeus, Agapanthus umbellatus, Tritonia aurea and three other species, Tritoma, Streptanthera cuprea, and innumerable terrestrial Orchids; Orobanche, Thymelea, rank fruticose Compositæ, especially the families Senecio and Asteriæ; numerous Scrophulariads and Solanums, Rubus luteola, Polygala speciosa, Lantana salvifolia, two species of Leonotis, several Microcachrys, abound. The Tree Fern, Cyathea Dregei, seems to love these open and exposed situations, and gives a remarkable effect where growing away from all other vegetation. There are also two species of Arbutus, which often occupy the whole side of a hill, and supply the natives with a fruit of no mean flavour. For variety and beauty the damp, shady old forests which fill the ravines and kloofs of these mountains are equal to any place in the world, for the old trees and rocks are covered with Ferns, Orchids and Mosses; whilst gigantic climbers, called "monkey ropes," often bind the trees into impenetrable clumps. The undergrowth is almost entirely composed of ferns and a few herbaceous plants. Streptocarpus Rexii and two other species were very common, also numerous varieties of Begonia, one of which was a stemless plant, with minute leaves and a large quantity of deep red flowers, often covering the tops of old rocks; and a shade-loving Aloe grew on almost every tree. Seeing so many epiphytal orchids, I greatly expected to find something worth having, but all turned out insignificant blooms, generally of a green colour, and in habit resembling the Bolbophylli.

The Ferns here form a field of study in themselves, although nearly all the species growing in this district have been collected and described from the Kaarkloof Range, 500 miles further south, in the Natal colony. These Ferns have been mainly brought to light by such enlightened gentleman as the Rev. Mr. Buchanan, Mr. Saunderson, and Mr. Wood, of the said colony. This being a favourite class of plants with me, and having Hooker's invaluable *Synopsis Filicum*, and other books of reference, I made it a special study. In this district I pressed over 180 different species, and to give my readers an idea of the richness of these vast ferneries, I will enumerate a few of the most important ones. Hypolepis anthriscifolia, H. amaurorachis, H. Bergiana, Asplenium heterodon, A. contiguum, A. alatum, A. laserpitiifolium, A. Billardieri, A. Kraussii, A. monanthemum, A. flabelliforme, A. ebeneum, A. anisophyllum, A. flaccidum, Cystopteris fragilis, and C. hirta. Pteris aquilina var. esculenta is very abundant, and covers tracts of land miles in extent; it is also eaten by the natives and hunters. Gleichenia polypodioides, G. dichotoma and varieties abound towards the tops of the ravines, as they do not care for a damp, shady situation, always preferring an exposed but damp position; Mohria thurifraga, under many forms and very common here, also prefers an exposed place; Gymnogramma totta, G. rosea and G. aurea; Niphobolus rupestris, N. Lingua, Polypodium Phymatodes, P. Dryopteris, P. piloselloides, P. venosum, P. irioides, P. trichodes, P. dubium, P. lycopodioides, P. attenuatum, P. submarginatum, Oleandra nodosa, Vittaria zosterifolia, Pteris hastata, in forms varying from 2 inches to 3 feet in height; P. sulcata, P. quadriaurita, P. serrulata, P. semipinnata, and P. longifolia; Adiantum lunulatum, A. Capillus-Veneris, A. æthiopicum, Nephrodium molle, N. patens, Lastrea athamantica, several Aspidiums, an Elaphoglossum, and some Davallias, besides the Tree Ferns I have mentioned before. *Chris. Mudd.*

The Villa Garden.

Decline of Peach Trees on Walls.—A Buckinghamshire Villa gardener is in a sad strait because the Peach trees he is constantly planting against his garden walls do not grow. He is continually buying and planting, and year after year, instead of a generous growth gladdening his eyes, he has the misfortune to see the trees gradually dwindle and die. He is without much knowledge of the management and necessary soil for Peach trees, and depends mainly on the advice of an old gardener of antiquated notions and imperfect information.

On the east, north, and south sides the garden is enclosed by buildings, and, as it is not of great extent, it is very close and hot in summer. The soil is of a light and porous character, a kind of stony marl resting on sand and gravel. It is not particularly holding, and moisture rapidly passes away from it, and as no efforts are put forth to mitigate the effects of the heat of the sun and the drought which follows, the trees, as might be supposed, have but a poor time of it. "Where the soil is naturally shallow and resting on a subsoil that is dry and gravelly," remarks Mr. Thompson, in the *Gardeners' Assistant*, "it often happens that the tree suffers much from want of moisture in dry weather. Exposed to the accumulated heat of the sun's rays, often above 100°, the leaves evaporate an astonishing amount of moisture, as long as the roots can supply it. Whilst any moisture is to be found within their reach they will rapidly absorb it, but when all is exhausted their action must cease, and the condition of the tree must undergo a change for the worse, for it cannot be supposed that the foliage, which was in a healthy state whilst evaporation was fully supplied, can continue in the same state when that supply is almost entirely stopped. Although the supply of moisture from the roots may have ceased, evaporation will soon continue drawing to a considerable extent from the juices of the tree; then it is that red-spider commences its most determined attacks, and these, if not arrested, would almost ruin the tree in one season." That is no doubt a correct description of the causes operating to bring about the condition of the particular trees above referred to. They were planted in autumn, and before they could get rooted into the soil the heat of summer comes, and the trees are literally withered up.

The Remedy.—When the matter was referred to us, as to the best plan to be adopted, the reply was easy and obvious. In the first place it is necessary thoroughly to change the soil. The present one is unfitted to the well-being of the trees. It is both poor and open, and cannot supply the trees with adequate nourishment. Our advice was to take out a quantity of the old soil, a yard in depth at least, and of a corresponding width, and to put in its place some good fibry loam, or a good garden soil, mixed with well decomposed manure. A compost of dung and loam is better for the Peach than dung alone, being more lasting and not so apt to cause the trees to gum. The soil being removed in the way indicated, it needs to be allowed to subside a bit before planting takes place. If the renewal of the soil takes place in September, the planting of new trees can be done early in October, autumn being generally considered the best time for planting, for "the vegetation of the Peach takes place early in spring, and when the plant is then removed it receives a check which is injurious to it."

We further recommended that, as soon as the trees are planted, the surface soil, as far as the roots extend, be mulched with stable litter—not heavy wet dung reeking with heat and moisture, but a layer of lightish stable dung of an ordinary character. This keeps frost from penetrating to the roots before they get well established in the soil, and also cool and comfortable, if, as sometimes happens, October and November prove warm and drying. There is yet another advantage derived from the mulching—it is valuable as a fertiliser when decay takes place in the following spring and summer.

Then to guard against the drying process, which appears to have almost shrivelled up the trees just when spring was changing to summer and the sun gained greater power in the day, frequent syringings overhead were recommended, with copious waterings and mulchings at the roots. It is only in this way that a balance between moisture and evaporation can be maintained. It had never suggested itself to the old gardener to syringe, water, or mulch the trees; but if these precautions were adopted in the future, we could assure them that a chance of life was offered them, and of vigorous life, too, if the attentions on the part of the cultivator backed up in a resolute manner the advice given.

Apricot trees planted against these walls and in the same soil were doing much better than Peaches, which was perhaps not to be wondered at. The nature of the soil suited them better. They, however, had a starved look, for the use of the watering-pot, syringings, and mulchings had been denied them. There is such a thing as cruelty to trees; and who knows but that they possess emotions, and that they are so constituted as to endure pain flowing from neglect.

Garden Operations.

FLOWER GARDEN, ETC.

Many of the gardener's duties are essentially prospective; he has to provide to-day for the requirements of the garden many months hence; so that it is important that the work of propagation should have due attention at the proper season. Scarlet Pelargoniums are generally the first to be operated upon, and early-struck cuttings have the best chance of becoming well rooted, and best able to withstand the vicissitudes of winter. Verbenas should follow, as these are likewise much benefited by a good stock of roots to carry them through the winter in their store-pots. Another advantage is gained by beginning early with Verbenas, as they will not require the aid of artificial heat to strike, and hence may be brought forward with more exposure to light and air, ensuring a hardy and sturdy constitution; but the best efforts are often defeated by the insidious attacks of aphides, so that an occasional fumigation is necessary to a healthy state of growth, both for Verbena and several other kinds of bedding plants, cuttings of which should be inserted in their store-pots as soon as possible, so as to allow them a period of hardening by exposure to the open air before the winter sets in. There is no need to enter largely into the propagation of the greater portion of bedding plants at this season. A few store-pots of each will generally supply ample cuttings for spring propagation. Petunias for bedding purposes are so easily grown from seed that it is hardly worth while to trouble about keeping cuttings through the winter, unless any particular colour is wanted in masses. Lobelias of such sorts as, to be kept true, must be propagated by cuttings, should now be in store-pots, reserved from the spring planting, and kept from flowering in accordance with former directions; but many of these, again, come so true from carefully saved seed that, unless for particular purposes, much trouble may be saved by trusting to it; but a sufficient stock of Salvia, Heliotrope, Cuphea, Coleus, Iresine, and Ageratum, must be got into their store-pots as soon as possible. Mesembryanthemum cordifolium variegatum should be commenced at once, as this is generally required in great numbers. As many boxes or pans should now be filled as there can be found cuttings for the purpose. They will strike now in a close frame or pit without the aid of artificial heat, being kept shaded for a time, and then gradually hardened by exposure. These will stand a much better chance of wintering safely than the plants which are struck later on by the aid of artificial heat, and will likewise furnish the best stock of cuttings for spring propagation. Cuttings of Alternantheras of the various sorts are plentiful now, and in a good state for propagation. A good number of small store-pots should therefore be filled at once and placed on a little bottom-heat, and if care is taken that they are never allowed to flag they will soon root, and may then be removed to a cooler temperature and free ventilation for a time, but remembering that it will require nearly a stove temperature to winter them in, they must not have the free exposure which may be given to such plants as may be wintered in the greenhouse or pits. From well-established store-pots such as these Alternantheras ought to be, the work of propagation in the spring may be commenced early and a good stock secured; they will require an occasional fumigation. Climbing Roses and various other climbing plants, such as Clematis, Jasmine, the blue Passion-flower, Honeysuckle, &c., are growing very freely, and will require frequent regulation by thinning out and removing all exuberant growth, particularly the strong shoots which Roses on walls and trellises are apt to throw out at this season. A few may be laid in where there are vacancies, or where it may be necessary to cut out old worn-out wood. After tying-in and making all neat a powerful syringing with the garden engine will be of great service in forcing out dead foliage and cleansing them from the filth left by noxious vermin, such as spiders and snails. Roses in borders may still have the strong growth cut back, and if treated for autumn blooming must have the free help of liquid manure as well as water in dry weather. *John Cox, Redleaf.*

FRUIT HOUSES.

Orchard-house.—I would still urge the importance of paying as much attention to the trees now as if it was mid-summer, they do not require so much labour to be expended upon them as they do at that time; but the leaves must be kept quite free from insect pests, and the roots must be in the happy medium of neither too wet nor too dry. If the leaves are still green, soft and rather flimsy in texture, get the trees as near the glass as possible and keep up a high temperature by day; from the lights being kept rather close the wood will ripen very well by the aid of the glass alone, but if the trees are to bear a crop of good fruit next year the leaves and wood also must speedily assume a reddish-brown tinge. Keep the soil in the pots of such trees that have not yet ripened the wood rather dry, but by no means permit the drying-off system for orchard-house trees of any description. See that any potting not yet done is seen to as speedily as possible. Keep the leaves of the trees recently potted moist by frequent syringing until they are established. Keep the house clean and the walks and borders neat. I keep Peach and Nectarine trees indoors, but as soon as the fruit of Pears, Plums, Apples, and Cherries is gathered, I remove the trees out-of-doors. Many persons think it is a waste of good space under glass, and mis-spending of valuable time, to grow Apple trees in pots. Probably it is in most cases, but we cannot grow good fruit in our garden at Loxford Hall; and the difference between fruit grown under glass and out-of-doors is so marked that an expert would scarcely recognise the fruit to be the same. The sorts I grow are Early Strawberry, Early Julien, Reinette Jaune Hâtive, Kerry Pippin, and Calville Blanche. I have grown a few of the American sorts, such as the Northern Spy, Melon, and Mother, but they have not been so satisfactory as our own English sorts. Kerry Pippin is particularly fine gathered from pot trees. The fruit is as large again as that grown in the open garden; it is also clear, almost transparent. Calville Blanche is a splendid Apple from pot trees, it is necessary to thin it out well, when it can be grown as large and fine as the best imported from France. Perhaps the best Pear for orchard-house culture is Louise Bonne of Jersey, worked as all orchard-house Pear trees ought to be (that will work) on the Quince stock. I have had it very large and of most excellent quality. The names of the best Pears and other fruits were given at p. 147.

Orange Trees in Pots.—Little can be added to the directions given in previous numbers as to general routine work. The fruit takes a long time to swell and ripen. The secret of success is in keeping up plenty of heat with moisture when the fruit is growing, syringing the trees well, and keeping the leaves and branches free from scale. Over-potting is also to be avoided. There is a tree at Loxford in an 11½-inch pot of the St. Michael's variety, which is carrying its third crop of fruit, and it has been in the same pot without any renewal of the soil for three years. I have now surface-dressed it with the compost I find answers best—bones crushed to powder, manure, and stiff loam. I use two parts of loam to one each of the bones and manure. Powdered charcoal is also added to sweeten the mass, and I fancy this last substance invariably gives a deep green gloss to the leaves. I never surface-dress any trees that have no fruit upon them. It is very undesirable to crop sorts with large fruit like the St. Michael's and Maltese Blood too heavy, whereas the Tangierine will bear almost as many again, but they will not be more than half the size. *J. Douglas.*

Strawberries in Pots.—All plants that are still unpotted should be seen to as early as possible, but in case there are any weakly plants of special varieties let them be encouraged for a few days longer in small pots, where they can be nursed and pushed along with reduced labour so long as they require extra attention. When they are potted up let the size of pot be considered according to the condition of the plants and the probable length of the season of growth before them. I have, I think, in a recent Calendar adverted to the fact that plants that receive their final shift about the first week in August are invariably the best fruiters: and why? simply because their season of growth is not obstructed by so many vicissitudes as earlier grown plants, which are as a rule grown in small pots, and are thereby influenced by a predisposition to start into second growth in the autumn. These matters all require personal consideration. Our plants are growing apace lately. They require thinning out if they are at all crowded, and where worms are at all troublesome it is a good plan to have wooden spars laid under the pots, filling up the intervening spaces with coal-ashes or cinders. Keep the same side of the crown to the sun all through the season, and remove runners and weeds as they make their appearance. Those plants that have been retained for autumn fruiting should be gradually taken to a warm, sheltered aspect, and encouraged into a fruiting condition as requirements may demand. *W. Hinds, Otterspool.*

Figs.—When the early forced pot-trees have been cleared of the second crop of fruit, the foliage may be thoroughly cleansed from dust and red-spider by the free use of the garden engine. The roots may also have another soaking with tepid liquid, and if those near the surface become exposed a little non-conducting material may be laid on the top by way of protection. Having succeeded in destroying all insect life, a moderately dry warm atmosphere with plenty of air will be found most conducive to the complete maturation of the wood intended for producing next year's crop; and as Figs will stand and benefit by any reasonable amount of heat, the points of the young growths may be encouraged to make their way up to the glass as long as it is allowed to remain over the trees. But when the foliage shows signs of going to rest, the entire removal of the lights from the south side of the structure will be found more beneficial to large pot-trees, grown upon the extension principle and plunged in concreted pits, than annual removal to the open air, and there will be less disposition on the part of the trees to cast their first and most anxiously looked-for crop of fruit. As the term "pot Fig" may be taken in a very wide sense, I may here explain that my trees occupy 20-inch pots, are 6 to 10 feet high and about 6 feet through. Where Fig trees can be planted out for filling large houses the roots should be restricted, thoroughly drained, and if the stems can be trained up against and allowed to root into a rough moist wall on the north side on their way to the highest point of the trellis, thence to be trained to the south eaves, they will produce heavy crops of fine fruit so long as the roots underground are confined and the wall roots are kept supplied with liquid manure through the growing season. For the encouragement of stem roots as well as the retention of the ammonia from the liquid, the back walls should be wired and partially packed with moss or lumps of fibrous turf. The Fig is a gross feeder, and will take large supplies of water if properly drained; but a sour water-logged soil is perhaps more fatal to the crop than the want of water, particularly if the roots have a firm hold of materials that never become dust dry. *W. Coleman.*

PLANT HOUSES.

Orchids.—An extra amount of attention will now need to be exercised in the Cattleya-house, for a great number of the specimens are now getting well advanced in their new growths, and as these, gradually pushing up and expanding, are marks of successful culture, and hold out promise of future displays, so too, whilst the new growths are just in a half-finished state, they are very apt to collect any drip that may happen to be caused by the syringing of the plants on blocks that may be suspended in their immediate vicinity, or water from other causes may drop into the hearts of the breaks, endangering their life and health. Any blocks that may be too near had better be moved, so that no drip may fall into the shoots. Above all see that a regular and free use is made of the ventilators, both those of the top as well as the lower ones. This free admission of air will materially aid in the drying up of any superabundant moisture, and at the same time assist in the perfecting and hardening of the new growth, thus enabling them to withstand the more easily any little excess of moisture that may occasionally occur. Almost all of the Trianæ section will be well advanced with their growths, and doubtless in the majority of cases have produced flower-sheaths for next winter's display. Much as we may enjoy any Cattleya blooms during the spring and summer months, there is such a pleasure and attractiveness in visiting these houses in the winter time, when almost everything outside is bare and cheerless, that a good display of the Trianæ section—including many varieties, ranging as they do from pure white sepals and petals and deep yellow throat, up to the deep rosy forms, where the labellum is of a rich rosy purple—should ever be aimed at, for in this species, with such varieties as here indicated, one can never err in adding fresh ones to the collection. The flowers, too, during the winter months, when the houses are much drier than at any other time of the year, will remain perfectly fresh for a period of from four to six weeks, a fact of sufficient importance for those to bear in mind who have to supply a large quantity of choice flowers for cutting or decorative purposes. C. Mendelii, too, is a free-growing species, and of this several distinct varieties are to be met with. This is now, however, so often to be seen at the spring and summer exhibitions that it is only needful to refer to its beauty and the aid it renders on occasions of this nature. C. Eldorado splendens is a most beautiful form, far superior to the species Eldorado, though this is pretty in its way. These will now in many cases be in bloom, the flower-sheaths coming up with the new growth, and by the time the bulb is formed the flowers push up and expand in all their beauty. The flowers of the splendens variety are of good size, the sepals and petals being of a rich rose colour, with a large tube-shaped labellum, while the throat is of a bright orange surrounded by a band of pure white, this again being followed by a margin of a deep rosy purple. The blooms, which will remain in beauty for a period of four weeks, have a most powerful and agreeable perfume. This form I find succeeds much the best on a block, its numerous roots, delighting to run over the hard surface, will soon throw out a quantity of short lateral rootlets. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, AUGUST 17, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug 19	Lea Bridge Horticultural Society's Show (two days). East London Amateur Floricultural Society's Show (three days)
TUESDAY,	Aug. 20	Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M. Basingstoke Horticultural Society's Annual Exhibition. Witney Horticultural Society's Show.
WEDNESDAY,	Aug. 21	Gosforth Horticultural Society's Show. Sunderland Horticultural Society's Show. Burton-on-Trent Horticultural Society's Show
THURSDAY,	Aug. 22	Reading Horticultural Society's Show. Sevenoaks Horticultural Society's Show. Saltburn-by-the-Sea Flower Show. Alton Towers Horticultural Society's Show
FRIDAY,	Aug 23	Devon and Exeter Horticultural Society's Show

THE time of year is now at hand irreverently termed the "big Gooseberry" season, and doubtless we shall not be long before we hear of, but do not see, blue Dahlias, Apples of the size of school globes, or some such portents. Indeed we have already heard of the Australian Platycerium alcicorne being found *wild* on Cader Idris!—a good beginning. The Bedfordshire Natural History Society and Field Club has been doing its best to prevent the future appearance of one of these big Gooseberries, and we hardly know whether to feel grateful to it or no. It is so refreshing to have these old stories, whose fallacies have been exposed over and over again, brought before us as if we had never heard of them before, and narrated with all the conviction and faith of a newly-ascertained fact. Of course, it is not the story that is refreshing—musty old thing!—but the way in which successive generations always, with unwavering faith in their own accuracy, narrate it. No matter how false the story in essence, the veracity of the narrator is always clear and unspotted—hence the sense of perennial freshness. It seems a pity to disillusion such people, but, indeed, in some cases it can't be done. What they were told, that they believe; *à fortiori*, what they saw, or thought they saw, that they cling to, with a faith deserving of admiration if only the object were worthy of it.

The particular case before us is the OAT-BARLEY question. The belief that Oats may be converted into Barley is an old one, and a widely spread one. It is shared not only by ordinary folk, but by some at least whose intelligence and powers of observation might have been expected to protect them from falling into such errors. The last time this question was alluded to in these columns, we were startled to find one of our leading and most deservedly respected agriculturists acknowledging himself a firm believer in the possibility of the transmutation of Oats into Barley.

The worthlessness of the evidence generally adduced in favour of this notion was ruthlessly exposed by Mr. ELGER before the Bedfordshire Field Club. But such an exposure failed to produce conviction—very few people are ever convinced by an argument, however logical. The Bedfordshire Field Club thereupon resolved to test the matter practically—a course for which we beg leave heartily to commend them, and to hold up their example as a model to be followed by similar Field Clubs all over the country. There are plenty of questions waiting to be solved by practical experiment besides this of the Oat-Barley, but this by the way. We take from the *Bedfordshire Mercury* the following account of the experiments, calling special attention to the sentence in brackets at the end of the first paragraph as an illustration of one way in which an erroneous impression may be generated:—

"On March 27, 1877, a sample of white Oats was sown in six rows in the presence of Dr. ADAMS, Mr. EKINS, Mr. ELGER, and Mr. HURST, after being carefully examined, and all foreign grains that were detected removed. We will call this sowing Batch I. [I would remark that quite 10 per cent. of this sample when purchased consisted of Barley and other grain.]

"On April 11, 1877, six rows of black Tartarian Oats were sown in the presence of the same members of the committee. We will call this sowing Batch II.

"On May 29, 1877, the white Oats (Batch I.), sown on March 27, having attained a height of about 18 inches, were cut down to within about 2 inches of the ground, the same members of the committee being present.

"On June 16, 1877, the white Oats (Batch I.), having attained the height of about 20 inches, were cut the second time. The black Tartarian Oats (Batch II.), having attained a height of 24 inches, were cut the first time, the same members of the committee being present.

"On July 5, 1877, six rows of Friesland Oats were sown, which we will call Batch III. The white Oats (Batch I.) were cut the third time, and the black Oats (Batch II.) the second time, in the presence of Dr. ADAMS, Mr. BARKHAM, Mr. EKINS, and Mr. HURST.

"On July 28, 1877, the white Oats (Batch I.) were cut the fourth time, the black Oats (Batch II.) the third time, and the Friesland Oats (Batch III.) were left untouched, the members of the committee present being Dr. ADAMS, Mr. HILLHOUSE, and Mr. HURST.

"On August 14, 1877, the white Oats (Batch I.) were cut the fifth time, and the black Oats (Batch II.) the fourth time. Both crops, especially the former, becoming very scanty. The Friesland Oats (Batch III.) were cut the first time, the crop having attained a height of at least 18 inches. The members of the committee present being Dr. ADAMS and Mr. HURST.

"On September 3, 1877, the few remaining plants of the white Oats (Batch I.) were cut the sixth time, and the few remaining plants of the black Oats (Batch II.) were cut the fifth time. The Friesland Oats (Batch III.), which had attained the height of about 18 inches, were cut the second time, in the presence of Dr. ADAMS and Mr. HURST.

"On November 25, 1877, each of the three batches of Oats sown were cut. Of the white Oats (Batch I.) only a few plants remained. The black Oats (Batch II.) and the Friesland Oats (Batch III.) were in a flourishing state, having attained a height of about 12 inches. Members of the committee present, Mr. ELGER and Mr. HURST.

"Hence Batch I., the white Oats, were cut down altogether seven times; Batch II., the black Tartarian, six times; Batch III., the Friesland Oats, three times. Immediately after this final cutting the plants were covered with cinder ashes to protect them during the approaching winter.

"The result of the experiment up to the present time (July, 1878) is as follows:—

"In Batch I. (the white Oats) out of all the six rows planted there are now standing three Oat plants and one Barley plant. In Batch II. (the black Tartarian Oats) there are nineteen Oat plants and one Barley plant. In Batch III. (the Friesland Oats) there are thirteen Oat plants and no Barley plants. Of Batches II. and III. not more than half the plants have survived.

"In order to test the question as to the relative hardihood of Oats and Barley, we were allowed, through the kindness of Mr. COLEMAN, of St. Mary's Abbey, to plant a large sample of Barley in his garden on April 13, 1877. This was cut down six times but has survived all the operations performed upon it, and the crop now standing is as fine in quantity and quality as it was last year.

"One broad fact is, I think, established by our experiment, viz.: That the Oat plant is far less able to survive the cutting down process than the Barley: this is shown by the white Oats (Batch I.) which were cut down seven times with the result of almost clearing them off. Of Batches II. and III. only about one-half remain—Batch II., the black Tartarian Oat, being apparently the most hardy plant of all, as it was cut down six times and yet about half of the original plants survive. Our experiment with Oats in Mr. HURST's garden seems an admirable illustration of the Darwinian theory of 'the survival of the fittest,' and I think taken in connection with the Barley experiment at Mr. COLEMAN'S it affords a very probable explanation of the so-called transmutation theory. Suppose that instead of carefully examining the white-Oat sample of Batch I., which was found to include at least 10 per cent. of foreign grain (mostly Barley) we had committed it to the earth in the same state as it was when we received it—what would have been the result? We should have had the three Oat plants—sole survivors of the cutting down process, and in addition every one of the Barley plants due to the overlooked Barley grains contained in the scandalously impure sample purchased. As it is, you will have remarked that we have one Barley plant to account for in Batches I. and II. In the face of what has been said as to the impurity of the commercial samples we used, it is hardly likely that any one of common sense, whether he be a transmutationist or not, will consider that the presence of these solitary plants proves anything except that vendors of seed do not sell the pure unmixed article they profess to do, and that there is a limit to the sharpness of the most critical eyes. The differences, physiological and chemical, which exist between the Oat and Barley plants are so great that the asserted transmutation of one into the other in the space of a few months seems from a botanical point of view to be an impossibility; but those who took part in the experiment I have described endeavoured as far as possible to throw all their preconceived scientific notions of what ought or ought not to result from it to the winds and to test the matter without prejudice."

A subsequent speaker furnishes a probable explanation of the circumstance—

"That the Barley said to be obtained from the Oat plant is stronger in the straw, of improved quality, and obtains a higher price in the market, than that which is produced from pure Barley seed, and that it is praised by the brewers for yielding an extract of superior strength and flavour. If the Oat plants perished, and a few stray Barley seeds germinated and survived a year's pruning and the inclemency of the winter, you might expect in the second year the plant, being thoroughly established, would become more vigorous than one allowed in its first year to produce seed, that the straw would become stronger, and the corn itself of finer quality. By checking for a time the reproductive powers of plants of various kinds, they progress rapidly in size and vigour. Our agricultural experimentalists, while striving at what is impracticable, have in all probability made a discovery that will lead to important improvement not in one only, but in all the various kinds of grain. Our Oats that have survived the second year, as well as the Barley, have become very productive and luxuriant."

Now hear the other side. Mr. EKINS relates the following circumstantial story:—

"In the year 1852 I was induced to try the experiment mentioned in the sixth volume of *Chambers' Miscellany*, by sowing some white Oats in June, 1852, in my father's garden at Woodhurst, Huntingdonshire, in the presence of JOHN CAREY, our gardener. These Oats were cut down according to the instructions in Chambers' sixth volume, preserved through the winter, and I find in my diary, May 30, 1853, an ear of Barley was distinctly seen on the Oat sown plants, and the produce of my experiment in 1853 was distinctly Barley of a very thin quality, and only a small quantity, of which 243 kernels were dibbed or sown on a plot of land 3 yards by 4½ yards by EDWARD DRING, one kernel in each hole. The produce of this was four small sheaves, threshed by the same person, and yielded about 2 pecks of Barley, and I have continued to keep some of this stock of Barley in my possession up to this year, 1878. In the year 1856 I tried the same experiment, but lost all my plants in the winter. In 1857, July 2, I sowed three rows of white Oats in a garden at Woodhurst, in the presence of JOHN CAREY, which were treated as before, and the result was as formerly, Barley—an ear of which, July 14, 1858, was sent to Professor LINDLEY, through Mr. M. FOSTER, of Huntingdon. I am not alone in trying this experiment. The late Mr. ULYSSES PAYNE, of Goldington, and Mr. DANIELS, of Swavesey, Cambs, also Mr. J. H. BLUNDELL, of Woodside, near Luton, succeeded in obtaining Barley from Oats. A Mr. COWPER, of Wappenham, near Towcester, Northamptonshire, succeeded in growing Wheat from Dutch Oats treated in the same manner. One fact I must mention respecting this avenine Barley—its difference from any other sort of Barley; the straw is stronger and stands erect, while other Barley falls and becomes laid down."

What a pity Mr. EKINS did not send to Professor LINDLEY the ear of Barley which he alleges that he distinctly saw "on [one of the] Oat-sown plants." More unfortunate still is it that he did not send the "Oat-sown plant" with "the ear of Barley on it."

When we have ventured to question the accuracy of statements like that made in all good faith by Mr. EKINS, we have been favoured with samples of the Barley, sometimes in the ear, more frequently from the sample bag, and we have been expected to believe that unmistakable Barley grain was the produce of Oats treated as before stated. We are quite open to conviction, and when some one favours us with a plant in the ear which presents indications of the change in question—we will give it our most attentive consideration.

It seems to us evident that, from the prevalence of the belief among persons of undoubted good faith, there must be some basis for their



FIG. 40.—TRAPA NATANS. (SEE P. 214.)

statements, and the Bedfordshire Field Club has done good service by endeavouring to ascertain what that is.

One very curious circumstance regarding this matter is, that the class of persons who believe in the comparatively sudden, and so to speak violent, changes of Oats into Barley, are precisely those who would repudiate most vehemently the idea that mankind and monkey-kind could have had in an inconceivably remote past a common origin. But surely the difference between the structure of the Oat-plant and that of the Barley is little, if any, less (at any rate in the eyes of a botanist) than that between the bodily conformation of a man and that of a monkey.

If Oats and Barley are capable of transmutation the one into the other in one season, we can see no reason whatever why a similar transmutation of a monkey into a man, or *vice versâ*, might not take place within an equally short period. Here's a new subject for inquiry for the Field Clubs of Great Britain!

—— TRAPA NATANS.—Every now and then we fall in with this very old friend and never see it without recognising the interest attaching to it. For some reason or other those who have this interesting plant often fail to keep it for any length of time, possibly because its seeds are not always sufficiently ripened. The curious fruit, with its four hooks, which act as grapplers, contains a single large seed abounding in starch, so that they are used as food in Southern Europe. By the French they are known as *Marrons d'eau*, Water Chestnuts. From the submerged stems proceed fine thread-like segments, which may be roots or may be submerged leaves. The floating leaves are deltoid in shape and borne on a thickened stalk which serves as a float. The mode of germination is highly curious, and the whole plant is well worthy the attention of those interested in plants. A paper with illustrations relating to this aquatic will be found in the *Annales des Sciences Naturelles*, third series, vol. ix. This comprises the fullest account known to us of the history and structure of this singular plant. The plant may be seen in the stove tank at Kew at the present time, and we lately saw a thriving specimen growing in a tub in the Liverpool Botanic Garden. (See fig. 40, p. 213.)

—— REPORTERS AT THE PARIS EXHIBITION.—Among the reporters selected by the Society of Arts to examine and report on the various industries at the Paris Exhibition, we learn that MR. GEORGE STANTON, gr. to JOHN NOBLE, Esq., Park Place, Henley-on-Thames, has been appointed to report on horticulture. Mr. STANTON was selected by the above-mentioned Society also for the same purpose at the Paris Exhibition in 1867. Mr. J. B. GRANT, of the Shaw Farm, Windsor, son of Mr. GRANT, the Factor at Skibo Castle, Sutherlandshire, has been selected to report on agriculture.

—— BOSSIN CABBAGE LETTUCE.—This variety was found to stand best among the large number of varieties tried at Chiswick this season, and it was singular to note that while heads of all other varieties had bolted off to seed, the Bossin was as unbroken as when it was hearting in. It is not a taking-looking Lettuce, being somewhat large and coarse-looking, with brownish tinted fringed leaves. Of its standing qualities there can be no doubt, and after all it is the inside of a Lettuce that salad-eaters are most concerned about.

—— VILLA THURET.—Many of our readers will emember the illustrations we gave from the garden of the late M. THURET, at Antibes, near Cannes. We have already announced that, through the munificence of a relative of the late M. THURET, this unique garden has become the property of the French nation, and that it is to be maintained as an experimental garden for scientific and horticultural purposes. It has been placed under the directorship of M. NAUDIN, than whom a more competent person could not be found. We are now requested to state that this garden is open to botanists and students of all nations. Not only is the garden thus thrown open to students, but all the resources of the establishment, living plants, herbaria, books, &c., will be at their disposal. More than this, students will be lodged gratuitously for six weeks or longer, with the consent of the Minister of Public Instruction. As these facilities are intended for *bonâ fide* students of botany or scientific horticulture, and not for mere idlers, or *dilettanti*, those who propose to avail themselves of this most liberal offer must be provided with a recommendation from some well-known man of science, or must themselves be known as scientific investigators. We are requested to state that, subject to the above conditions, English students will receive a warm welcome and every facility for their studies. The garden is one of the most remarkable we ever saw, its collections of the richest and most valuable, while the proximity to the Mediterranean, the library, the microscopes, the laboratory, give the Villa Thuret an exceptional value. We earnestly trust that such splendid opportunities will be utilised fully, and that the hospitality of the French nation and the munificence of Mdlle. THURET may find their reward in the advancement of botany and horticulture. Those who cannot visit this experimental garden may perhaps be enabled to send seeds or plants of interest, either for scientific or industrial purposes, from the colonies, with the certainty that they will be duly appreciated.

—— CARPETING A STOVE BED.—In a large span-roofed stove at Lambton Castle the centre bed is covered with Fittonia argyroneura, trailing about at its will, and forming a dense carpet, amongst which the principal plants stand, and look very well, in addition to which the leaves in the winter, when fresh foliage for garnishing is scarce, are made to do duty with fruit in this way.

—— MR. HUNTER'S SEEDLING FIG, from simply an inspection of the fruit, has been thought by some not to be distinct from the Brunswick, but we have never seen that variety fruit in the way the seedling does at Lambton; it is both extremely large and a profuse bearer. Some of the fruits have weighed 8 oz. each.

—— KEW GARDENS AND BANK HOLIDAY.—The total number of visitors to the gardens on August 5 was 57,121, of whom 3997 were admitted before one o'clock. With reference to the earlier opening question, Sir TREVOR LAWRENCE has given notice in the House of Commons of his intention to move next session that it is desirable, in the opinion of the House, that the whole or part of the Gardens should be opened to the public at 10 A.M. on week-days, and that there is nothing in the work of maintenance or in the special objects of the Gardens to justify the exclusion of the public from them until 1 P.M.

—— BANANAS IN THE SOUTH OF FRANCE.—M. NAUDIN tells us that he has recently partaken of Bananas ripened in the open air, *ganz im freien Luft*, at Cannes.

—— STRUCK BY ELECTRICITY.—A genuine case of a tree struck by lightning may be seen at the village of Micheldever, Hants. A tall Aspen Poplar was struck by the active fluid about 40 feet from the ground, and in its course downward the electricity ploughed out a furrow of bark and wood 6 inches wide down to the roots, blacking and withering the small branches on the stem in its course.

—— THE FERNS AT LAMBTON CASTLE are grown in a house that affords very much more light than the structures usually devoted to these plants, and are very thinly shaded. The result is that all are much more enduring than when grown in a darker situation, and the tints of the young fronds of some are almost indescribable—Adiantum Farleyense, for instance. The fronds of this Fern, as is well known, are influenced in colour by the light they receive, but in the plants here it existed to an extent we have not previously met with. The fronds, even those almost fully grown, were of the most beautiful deep pinkish magenta, and many other sorts were alike influenced.

—— DEATH OF MR. JAMES FLEMING OF NEW YORK.—The *Gardeners' Monthly* reports the death, on July 10, of this well-known seedsman. Mr. FLEMING was born in Ayrshire, Scotland, in 1833, and was consequently 45 years of age. He was an excellent type of the best class of Scotch gardeners—an educated, intelligent man, thoroughly versed, not only in the varied details of all the branches of horticulture, but he was, besides, an excellent botanist. He was so modest, unassuming, and unpretentious, that only his most intimate friends were aware of his varied acquirements. Few men of his age were better known to the gardeners of New York than JAMES FLEMING, and certainly none were more beloved. Open-handed, open-hearted, genial, and hearty always, he will long be remembered by scores of poor fellows into whose plodding lives he threw many a gleam of sunshine.

—— HYBRID CATTLEYA.—Of all experimentalists few have been more fortunate than Mr. DOMINY. His success is not to be measured merely by his skill and tact or the scientific value of his labours, but also by results of a more tangible character, and such as can be appreciated by every one. The last of his achievements, and we do not think we shall be far wrong in saying the greatest, is the production of a hybrid Cattleya, which is now in bloom in Messrs. VEITCH'S nursery at Chelsea, and which will probably be exhibited at the Floral Committee of the Royal Horticultural Society on Tuesday next. It is a cross between Cattleya Dowiana and × Cattleya Exoniensis, or possibly Lælia purpurata, one of the parents of × C. Exoniensis. Whatever be its origin, the plant is remarkable for its free habit, in which it contrasts favourably with C. Dowiana. The plant has elongated fusiform pseudobulbs, oblong strap-shaped leaves, slightly emarginate at the tip, and three flowers, averaging each 5½ inches in diameter. The sepals are of a beautiful pink-mauve colour, the lip, which is of the size and form of that of C. Dowiana, is of an intense magenta-purple, undulated at the edges, and marked at the base with radiating buff-yellow lines. Orchid lovers should not fail to see this wonderfully highly coloured Cattleya. When they do so they will appreciate the feelings of the raiser, who has had to wait patiently for ten long years to see the result of his skill. There is already a Cattleya Dominiana, so that that name cannot be applied to this plant, but we doubt not our great orchidologist, who is so skilful in the manufacture of appropriate names, will be able to suggest an anagram or a modification of Mr. DOMINY'S name, which shall suffice to commemorate his achievement, without infringing the rules of botanical nomenclature.

—— PARIS UNIVERSAL EXHIBITION.—One of our correspondents send us the following notes on the horticultural buildings and implements:—

"In the Belgian section near the Restaurant Belge is a nice iron house, built by Boissin of Paris, where M. Linden, of Ghent, exhibits a good collection of hot-house plants, such as Draccenas, Crotons, Palms, Ferns, Nepenthes, Bromelias, Anthuriums, &c. Going towards the railway station on the right hand side is another iron structure, by Thiry, jun., with a collection of Palms, &c., in it, but with no exhibitor's name. Near the English machinery department is a long iron span-roofed house, having in the centre a group of Palms, from Wincke de Jonghe, of Bruges. Retracing our steps towards the Jena Bridge we find on our right hand side, near the pavilion of the horticultural section, a good iron house built by Lagnas, of Presles, with a group of Pelargoniums from Morlet, of Fontainebleau, in the centre. In one of the other divisions is a collection of Achimenes from Duval, of Versailles, and in the other one a very good collection from the Luxembourg garden (M. Jolibois, gr.), of Cypripediums, Cattleyas, Anguloas, Vandas, Oncidiums, Bromelias, &c. Not far from this house is another iron building with a pavilion in the centre by Maurel & Stœckel, of Paris, with some large Palms from Lebatteux, of Le Mans, and a good collection of smaller specimens from Ch. Massart, nurseryman, of Brussels. One of the nicest iron houses exhibited is that built by Mathiau perè et fils. This house contains a collection of Caladiums but we have never been able to get in, the house being always locked. We were told that by coming late in the afternoon we might have some chance to get in, as M. Bleu, who exhibits the Caladiums, has taken upon himself not to open it, or rather to open it when he likes. What would the English public think of such an arrangement at an English show? Not far from this is a small span-roof house, with a nice lot of Peach trees in pots, with plenty of fruit on, from Margottin fils. Next to the quay in a small house is the show of Etienne Solomon, wine-grower of Thomèry. The Vines look healthy, and the fruit is very fair.

"We must now cross over the Seine towards the Trocadéro, where in the grounds are several houses.

On the right hand, near one of the entrances, is an iron span-roofed house by Trouchon, having no plants in it, but a number of small aquariums, with a very interesting collection of fish quite worth seeing. Not far from this house is a large rustic house, with no light, or very little, where M. Chantin exhibits a large collection of Palms.

"On the left hand side, facing the Palace of the Trocadéro, is perhaps the best house of the exhibition, by Lefebvre-Dormois, having in the centre a kind of pavilion, with one span-roofed house on each side. At the back of the pavilion is a small waterfall, tastefully arranged. The whole of the plants exhibited in this house belong to Constant Lemoine, of Angers. All the plants are very healthy, and they are correctly and legibly labelled, which is not the case in any of the other collections. M. Lemoine has staged in the pavilion a group of large Palms, Pandanus, &c., and in one of the adjoining houses a number of Caladiums and Bromelias, and in the other house Dracænas, Crotons, Marantas, &c., all good plants.

"Close by is a small span-roof house by Lefebvre-Dormois, full of pot Vines bearing plenty of fruits. The exhibitor is the well-known Grape grower of Thomery, M. Rose Charmeux. This gentleman, being on the jury, has had the straightforwardness to have a big board stuck in front of his house with the mention *hors concours*.

"A small iron house of Mery Picard, of Paris, presents a new idea. The house is glazed with concave panes of glass; in case of rain the whole of the water is made to collect in the centre of the panes. What the advantage may be remains to be determined. In this house M. Barbot, of Paris, has staged a goodish lot of plants, but not one of them is labelled.

"Nearer to the quays we find a small iron house, shut up, containing a collection of succulent plants; a small low house by G. Laillet, from Amiens, with a collection, from Barbot, of course without labels, of Caladiums and Begonias.

"An iron span-roofed house, built by Leblond, of Montmorency, contains a large collection of succulent plants from the collection of Mme. Steiner-Pfersdorff, of St. Ouen. When we visited that house at 12 o'clock we found two females, belonging perhaps to the staff of the builder or of the exhibitor, who had brought a dirty table and two chairs; they also had a baby (crying, of course), and on that table they were not only eating but cooking their own dinner. Our own impression of the houses and their contents is that, with the exception of three or four, it would have been better not to have exhibited them. The visitors seem never to give a look inside the houses. During the five or six mornings we have spent in the exhibition we have never seen more than two visitors at a time, which is not remarkable considering the baby.

"In a long building receiving light from the top, with the entrance next to Mr. John Wills' house, we find part of the exhibits relating to garden implements of all sorts, comprising a variety of tools of the usual kind from noted French makers. Among these numerous exhibits that of the firm known under the name of *à la Ménagère*, which has its show-rooms in the Boulevard Bonne Nouvelle, near the Porte St. Denis, is noteworthy. It is a most extraordinary establishment, combining every requisite wanted in the garden, with furniture of all sorts, apparatus for warming, bathing, cooking, &c. It has lent the Commissaire-General, for the free use of the visitors in the Exhibition, over 400 seats of all sorts. What struck us most in the articles exhibited in this group is a pump worked on a new principle and so exceedingly light to work that a child could do it easily. Hardivillé, of Chambly (Oise), shows a quantity of knives, scissors, &c., and amongst the number an instrument called *sécateur-eglantier*, which is very strong, as well as an *ébrancheur* (branch cutter), both of which are light to work. L. Bachelier shows gummed Grape bags, very useful for outside vinery. It prevents the flies and the birds from spoiling the Grapes, and does not shut out the rays of the sun. Louis L'hérault, the well-known, and, we think, the most successful Asparagus grower in France, exhibits a collection of all the tools necessary for the cultivation and packing of Asparagus. P. Loyre, 181, Rue de la Pompe, Passy, has some of his best specimens of tubs (*bacs coniques*), which will, we hope, one day altogether supersede the ugly square cases used for the Orange trees in the garden of the Tuileries and at Versailles. Granjon exhibits several of his new inventions; one of them is the patent budding-scissors. You have only to put the branch from which you wish to cut the bud on the scissors, and by two movements you cut it out as nicely as possible; also a metallic brush for cleaning the bark of trees. M. Etienne Salomon, Grape grower, has also exhibited here several apparatus used for keeping the Grapes; one especially is very tasteful—it is a very pretty vase in a kind of terra-cotta, with holes to allow the Grapes to be put in as in a bottle. It is a useful article to put on the table, as it can be decorated with foliage and flowers. The last but not the least curious group consists in the new garden tables, seats, steps, &c., manufactured by Lavaud & Co., 30, Rue de Levis, Paris. This house makes everything to fold up so as to be portable and to save space. Their steps when folded look like sticks. Every article seems to be very well made, and of strong but, at the same time, light material. They have also all sorts of folding fences, which can be made from, say, 1 yard long into 3, by merely pulling on one side. This part of the horticultural show does not attract many more visitors than the greenhouses, but still there is a little more life in this department."

—— THE GRAPES AT LAMBTON CASTLE.—From the exceptionally large and fine Grapes that Lambton Castle gardens have produced, the vineries here are always a source of interest to Grape growers. The Vines in the principal range, whereon not only the sensational bunches that have been exhibited were grown, but also those which collectively have produced on an average much larger bunches than often met with, as well as an immense weight of fruit in the aggregate, are now, as might have been expected, beginning to tame down considerably in the size of the bunches; but the berries are larger and higher coloured, especially the Hamburghs. Golden Champion was in grand condition, without an apparent speck on the berries, as also was Foster's Seedling, which no doubt is the white Grape as an early kind to depend upon, free, and a certain cropper; it was bearing seventeen very large bunches on a single rod; Raisin de Calabre, a dozen very big bunches to a rod. In the house devoted to Muscats the bunches are large, close, and numerous, and colouring nicely, but not ripe. In the east end house, which is the latest in this range, the crop is very heavy; White Lady Downe's was in the best condition we have yet seen it; Madresfield Court equally fine, as also Black Alicante, bearing twenty-four big bunches. In this house there is an example of Gros Colman grafted on Foster's Seedling; on this stock the bunches are larger than on Black Alicante, on which it is also grown, but the colour is never so good on the white as on the black variety. Mr. HUNTER has a very high opinion of Alnwick Seedling as a late kind; a young cane in a 10-inch pot, inarched this spring, was bearing three very beautiful bunches. The earliest house (all Hamburghs) was ripe the first week in April, the second a very little later; the borders of these houses are both inside and out, and we understand there are more roots outside than in, yet no fermenting matter was used, or even anything in the shape of protecting material, and Mr. HUNTER says the crops on these Vines were equal to any he ever had on early Grapes, and that whatever he puts on his Vine borders is for support, not protection. The Vines planted in the border made of dung and leaves still keep on doing satisfactorily; they were bearing a beautiful crop; some of the bunches would weigh 4 lb., with even large berries, well coloured.

—— COLOURING ADIANTUM FARLEYENSE.—Those who are found asserting that it is somewhat difficult to colour well a large specimen of this splendid Fern would have been agreeably surprised at the sight of a really magnificent example staged at the exhibition of the Brackley Horticultural Society on August 6. The plant measured fully 4 feet through, its height corresponding with its width; it was densely clothed with large fronds, which were exquisitely coloured with that peculiar delicacy of tint which characterise this Fern when in fine condition. As a specimen it was perfect. It was shown by Mr. C. WELLS, gr. to Viscount VALENTIA, Stratton Audley. The judges regretted they were not privileged to make some substantial award, that would have served as an enduring memento of so noble a plant presented in such fine condition.

—— THE WHITE MIGNONETTE.—Judging of Messrs. GARAWAY's white Mignonette as we recently saw it planted out in their nurseries at Bristol, it is a very different thing to what the impression conveyed by an ordinary plant grown in a pot would lead us to conclude. Here the contrast betwixt its very double white highly perfumed flowers, and the stout deep green leaves with which the sturdy bushy-habited plants were clothed, was apparent. It is evidently a fine variety, with an absence of the olive-yellow hue in the foliage which detracts so much from the appearance of this sweet-scented favourite.

—— THE CORN CROPS.—The *Agricultural Gazette* of Monday last contained a considerably better series of crop reports than any which have appeared since the great crop of 1874; for although the Wheat crop is not, upon the whole, much more than an average, and Barley is decidedly under average, and Oats, also, do not reach the average, and Beans and Peas are largely failures—and although it is the lighter soils of the country (not generally the most productive of our bread corn) which have been especially favoured by the season—yet no such disastrous account of our produce has had to be endered as was true of 1875, 1876, and 1877.

—— SCOTTISH HORTICULTURAL ASSOCIATION.—At the monthly meeting, held on the 6th inst., the President in the chair, Mr. ALEX. HONEYMAN read an instructive paper "On the distribution of plants," dividing his subject into four heads, viz., how plants grow, on what plants grow, the application of their food, and the influence of light and temperature. The essayist dwelt at considerable length on the different heads of his paper, and succeeded in putting before the meeting some of the principal facts that every gardener should make it his study to know. He concluded by strongly enforcing the necessity of gardeners making themselves acquainted with the rudiments of chemistry, and expressed the hope that the time was not far distant when chemisty would be as widely known among horticulturists as it now is among agriculturists. Mr. WM. BLACK next read a paper "On the cultivation of the East Lothian, Warriston, and Ten-week Stocks." He described the modes of cultivation followed in the Dean Cemetery, where these Stocks grew so luxuriantly. Messrs. DICKSONS & Co. received a Certificate for new Phlox Surprise, and Mr. R. ROBERTSON received Certificates for new Carnations Rosy Queen and Mrs. Robertson.

—— PHYLLOXERA IN BURGUNDY.—Great consternation is felt at the appearance of this pest in the Côte d'Or district, the region in which the finest Burgundies are produced, such as Montrachet, Pomard, Volnay, Chambertin, Clos Vougeot. Hitherto this region has been unaffected.

—— GRAFTING THE TOMATO ON THE BITTER SWEET.—The experiments which have been made in this country by Mr. MAW and by Mr. ALEXANDER DEAN with reference to the grafting of the Tomato on to the Bitter Sweet (Solanum Dulcamara) are no doubt within the recollection of some of our readers. M. CARRIÈRE has been repeating some of these experiments in Paris, and with the result of obtaining regular bushes 2 metres and more in height (nearly 7 feet). Two such plants placed in pots in a greenhouse continued to grow all the winter, and were planted out in the open air in the beginning of June. One of the plants has now (end of July) a ripe fruit, so that a plant generally considered as an annual has been converted into a woody perennial, not the least curious of the many curious phenomena connected with grafting. The *Revue Horticole* of August 1 is our authority for the statement above made.

—— PARIS ACADEMY OF SCIENCES.—Mr. CHARLES DARWIN has been elected a corresponding member of the Paris Academy of Sciences in the section of zoology; and Prof. ASA GRAY has been elected a corresponding member in the section of botany, in succession to the late Dr. BRAUN, of Berlin.

THE CHARLEVILLE GRAPES.—The *Gardeners' Record* reports that the display of fruit at the recent autumn show of the Royal Horticultural Society of Ireland was wonderfully good, the Grapes in particular being simply magnificent. Once again, remarks our contemporary, that celebrated grower, Mr. ROBERTS, gr. to the Countess of CHARLEVILLE, obtained the leading position, winning the Veitch Memorial Prize and £5 for the best three bunches of Muscat of Alexandria, and also the Hamilton prize for the best six bunches, at least two varieties. But although winning both those coveted prizes, it is but fair to say that he had a tough competitor in Mr. M'GEE, gr. to HENRY HAWKINS, Esq., Belfast, who also showed some really splendid bunches, and in one instance, namely, that for the best three bunches of black Grapes (any other variety class) was placed 1st, beating Mr. ROBERTS, both showing the same variety, namely, Madresfield Court. "We can con-

scientiously say that the three bunches of Muscat of Alexandria, with which Mr. ROBERTS won the Veitch Memorial Medal, were the finest, both for size of bunch, size of berry, colour and finish, that have ever come under our notice; they were simply perfect in every particular. His bunches for the Hamilton prize were also wonderfully fine."

— GARDENING APPOINTMENTS.—We understand that Mr. JAMES BURR, lately head gardener to the Duke of MANCHESTER at Kimbolton Castle, has been appointed to a similar post in the service of ROBERT HEATH, Esq., M.P., at Biddulph Grange, Congleton, formerly so well known to Orchidologists as the residence of JAMES BATEMAN, Esq.—Mr. THOMAS WILKINS, late foreman at Stoneleigh Abbey, Warwickshire, has succeeded Mr. PRAGNELL as gardener to the Marchioness of WESTMINSTER at Motcombe House, Dorset.

THE DISTRIBUTION OF THE NORTH AMERICAN FLORA.

(*Continued from p.* 142.)

IN this slight outline of the botanical features of temperate and Arctic North America, I have alluded to three as most noteworthy, namely, the vegetation of Greenland, the Asiatic character of the vegetation of the eastern half of the continent, and the more southern and even Mexican character of the vegetation of the western half. How are these features to be accounted for?

It so happened that Dr. Gray, Professor of Botany in Harvard College (Boston), and I were contemporaneously, but without concert, engaged in botanical investigations which have resulted in explanations of the two first features. He was at work on the flora of Japan,* I on that of the Polar zone,† and we were both bringing to bear upon our subjects considerations regarding the variation of species which Mr. Darwin‡ almost simultaneously laid before the public, and which, I need not say, powerfully directed our studies.

THE GREENLAND FLORA.

I shall take the vegetation of Greenland first, as being first in order, though second in date of appearance and least in importance. Its chief peculiarities are —1, that its plants are almost all of them Scandinavian (that is, North-West European), hardly any of the peculiar plants of the American arctic sea-coast and polar islands crossing Baffin's Bay and Davis Straits; 2, that of its 300 flowering plants hardly any present even a variation from their Scandinavian prototypes; 3, that it is poorer in species than is any other division of the arctic flora, and wants many Scandinavian plants that are found in most other arctic countries; 4, that though Greenland extends 400 miles south of the arctic circle, its extra-arctic continuation adds only about 100 species to the flora, and these all cross the Arctic circle in other longitudes; 5, some Greenland species confined to it and to the mountains ot the Atlantic side of America, being found nowhere else in arctic or sub-arctic America.

My explanation of these anomalies was, that at a period previous to the Glacial, a flora common to Scandinavia and Greenland was spread over the American polar area, and that on the accession of the cold of that period this flora was driven southwards, and was affected differently in different longitudes. In Greenland many species were exterminated, being as it were driven into the sea at the southern extremity of the peninsula, where only the hardiest survived. On the return of warmth the Greenland survivors migrated northward, peopling the peninsula with the hardiest of the species of its former flora, unmixed with American species; and unchanged in aspect, from never having been brought into competition with those of any other flora. On the other hand, the same Scandinavian plants when driven south on the plains of the continent multiplied there in individuals, and being brought into competition with American species descending from the continental mountains on to the plains, assumed varietal forms. On the return of warmth, therefore, many Scandinavian species that had been exterminated in Greenland would, having survived on the continent, travel northwards on it, some unchanged, others under varietal forms, accompanied with the American species that had descended from the mountains during the cooling of the continent. Lastly, as some of the Scandinavian species were no doubt local, and confined to near the meridian of Greenland, it is not surprising to find that a few such should survive only in Greenland and on the eastern alps of North America.

Thus only could I satisfactorily account for the almost complete identity of the Greenland flora with the Scandinavian after such changed conditions of climate; for the paucity of its species; for the absence in it of varieties; for the rarity in it of peculiarly American species; for the few species which extra-arctic Greenland adds to its arctic flora; and for certain of its plants being limited in range to Greenland and the eastern American alps.

NORTH ASIATIC AND NORTH AMERICAN FLORAS.

The relationship between the flora of North-east Asia and Eastern North America has been fully explained by Dr. Asa Gray in an essay on the Flora of Japan, which is the first entirely satisfactory contribution of its kind to the science of botanical geography known to me.

After a detailed comparison of the botany of Japan and North America, and proving their affinity, Professor Gray refers to the fact that many of the existing genera and even species of both floras coexisted in the high latitudes of America during Miocene times, as shown by Heer, and other palæontologists: during which period he further assumes that the three northern continents were conjoined, or so nearly contiguous as to allow of a commingling of their floras.

The Glacial period followed, carrying an arctic climate south to the latitude of the Ohio, but so gradually, that these plants were not exterminated, but wholly or in part driven southward, followed in the rear by the arctic vegetation. As the temperature rose with the retreating ice, this flora returned northward, leaving the arctic and sub-arctic plants on the mountains of both East and West America.

He next shows that the retreat northward was to a somewhat higher latitude than the same plants now attain; and this he accounts for by a reference to the Fluvial epoch of Dana,* when the region of the great lakes was submerged 500 feet below their present level. This diminished area and lowered elevation of the land, by inducing a milder climate than now obtains in the lake region, favoured the extension of the flora to a higher latitude than it now attains, and hence effected a second commingling of American and Asiatic plants. Lastly, Dana's Terrace epoch supervened, when the previously depressed northern region was again raised, cooling the climate, finally dissociating the Asiatic and American floras, and giving to the arctic and sub-arctic plants of the continent their present limits.

It remains now to account for the great rarity of East Asiatic types in America west of the prairies, and the presence in those meridians of Mexican and still more southern ones. Hitherto there have been no other attempts at a solution of this problem than such unsupported speculations as that the western half of the continent, though so much the loftier, was submerged during the southern migration of the northern Miocene plants; or that the climate of the West was unsuited to the habits of these, which appears to me to be at variance with the fact that when imported into it they thrive luxuriantly.

The explanation which I have to offer will be best understood by a reference to the section (p. 141), which shows the western half of the continent to be enormously elevated as compared with the eastern, and to have been singularly adapted for the retention of vast bodies of ice for long after the Glacial period. We find there a valley (the desert region), upwards of 400 miles broad, and upwards of 4000 feet elevation, with many ranges of over 8000 feet in it, bounded by broad and lofty mountains, together occupying at least two-thirds of the breadth of the western half of the continent. We further know that these mountains were clothed with ice during the Glacial epoch, and that the valley was then occupied by a vast lake; for on the uppermost of the many shelves which the retiring waters of this lake cut on the flanks of the Rocky Mountains and Sierra Nevada, the skull of the musk-ox, the most arctic of land quadrupeds, has been found.

It is obvious that this whole western region must have retained its glacial mantle for an incalculable period after Eastern America had been sufficiently warmed to admit of the northward return of the plants that had been driven southward in it; and that this glaciated condition must have effectually barred a similar return of the same plants in those western meridians; these must have perished in short on reaching Southern California. Long ages after, when the western ice disappeared, and the climate of the valleys warmed, the Mexican and more southern plants would, as a matter of course, take possession of the unoccupied soil, and advance northward till they encountered the boreal vegetation of North-western America, with which they now commingle.

I have said that the extinction of East Asiatic types in Western America was not total; a few escapes are found in the valleys of the Rocky Mountains and Sierra Nevada,* and also along the coast of the Pacific, the warming influence of which favoured their preservation during the northern migration.

THE SEQUOIAS.

Two instances of these escapes are of such interest that I shall, in concluding this lecture, bring them under your notice; they are those giants of the vegetable kingdom, the Sequoias, the Red-wood (S. sempervirens), and the "Big-tree," or "Wellingtonia" (S. gigantea).

The fossil remains of these trees, or species most closely allied to them, are found in Miocene beds in high latitudes all round the globe; in Vancouver's Island, Sitka, on the arctic American sea-coast, in Greenland, Spitzbergen, and in arctic Asia, &c. The genus, therefore, which first appeared in the Cretaceous times, was undoubtedly a member of that mixed Americano-Asiatic flora that was driven southward during the Glacial period. The genus is now confined to Western North America, and to the two abovenamed species, but it is represented in Eastern America by the very closely allied genus Taxodium, and in Eastern Asia by Glyptostrobus.

The distribution of the two Sequoias is most instructive. The Red-wood forms a dense narrow forest tract for about 500 miles, skirting the ocean, along whose warmer shore it crept northward after the Glacial epoch. It rivals in height its sister of the Sierra, and attains an enormous girth and age, though I can find no account of any attempt having been made to estimate its age.

The S. gigantea or "Big-tree" (the Wellingtonia of British gardens), again, is a plant of a cooler climate; and hence, having survived the glacial cold, was enabled to establish itself in the Sierra Nevada, under certain very restricted conditions. It extends at intervals along the western slope of the Sierra to a little north and south of the parallels of 36° and 38° N., that is, for nearly 200 miles in a north-west and south-east direction, at elevations of 5000 to 8000 feet above the sea. Towards the north the trees occur as very small, isolated, remote groves of a few hundreds each, most of them old and interspersed amongst gigantic Pines, Spruces, and Firs, which appear as if encroaching upon them; such are the groves visited by tourists (Calaveras, Mariposa, &c.). To the south, on the contrary, the Big-trees form a colossal forest, 40 miles long and 3 to 10 broad, whose continuity is broken only by the deep sheer-walled cañons that intersect the mountains; here they displace all other trees, and are described as rearing to the sky their massive crowns; whilst seen from a distance the forest presents the appearance of green waves of vegetation, gracefully following the complicated topography of the ridges and river basins which it clothes.

But by far the most remarkable fact hitherto reported regarding the disposition of the groves is, that they occupy only those spots in the Sierra which were first laid bare when its icy mantle became broken up into isolated glaciers. Thus, commencing at the

* "Observations upon the Relations of the Japanese Flora to that of North America, and of other parts of the North Temperate Zone." *Memoirs of the American Academy of Sciences*, vol. vi., p. 377. Read December 14, 1858, and January 11, 1859.

† "Outlines of the Distribution of Arctic Plants." Read before the Linnean Society of London, June, 21, 1860. *Trans. Linn. Soc.* xxiii., p. 257.

‡ "On the Tendency of Species to form Varieties," by C. Darwin Esq., F.R.S., and Alf. Wallace, Esq. Read July 1, 1858. *Journal of the Proceedings of the Linnean Society of London*, vol. iii. (Zoology), p. 45.

* Whilst these pages were still in the press, Prof. Gray has informed me that he now lays little stress on the conditions supposed to be due to the Terrace and Fluvial epochs; and that he is rather disposed to consider the separation of the northern floras by the Glacial epoch to have been final.

* And also on the highlands of Central Mexico, where some Asiatic types remain which have not migrated farther north or south in America. Such are the eminently Asiatic genera Bocconia, Meliosma, Photinia, Cotoneaster, Deutzia, and Abelia.

north, the gap of 40 miles between the Calaveras and Tuolome groves was occupied by the great glacier of the Tuolome and Stanislaus Rivers; that between the Merced and Mariposa groves by the glacier of the Merced River, which sculptured the famous Yosemite Valley; and so on—each successive group of trees occupying a lofty spur between the sites of ancient glaciers, and the greatest continuous extension of the forest (of 40 miles) occurring exactly where, owing to the topographical peculiarities of the region, the ground was most perfectly protected from great fields of ice.

Mr. Muir, a very intelligent and accurate observer, who has studied the groves throughout their length and breadth most diligently,* and to whom I am indebted for the above and much other information regarding the southern forest of Big-trees, considers that these have never since the Glacial epoch been more widely distributed or in greater vigour than now, and doubts, indeed, if the forests have reached their prime, founding his opinion on the high state of health of the mass of the trees, the multitude of seedlings and saplings in the southern groves, and the absence of any trace of trees having existed outside the present limits of the groves (as of dead trees, stumps, or the great holes left by fallen trees).

SIZE OF THE BIG TREES.

So little that is trustworthy has hitherto been published regarding the age, size, and durability of the Big-tree trunks when fallen, that I shall offer you some accurate data which I obtained on these points chiefly from Mr. Muir. A tree felled in 1875 had no appearance of age; it was 69 feet in girth inside the bark, and the number of annual rings counted by three persons varied between 2125 and 2139. Another was 107 feet in girth inside the bark at 4 feet from the ground; its wood was very compact, and showed, throughout a considerable portion of the trunk, 30 annual rings to the inch. This, if the rings were of uniform diameter in the rest of the trunk, would give the incredible age of 6400 years; but as the interior rings of such trees are much broader than the outer, half that number to the inch is a more conceivable estimate, which would give an age of 3500 years. The only other instance of careful counting of rings which I can find is of that of the felled tree in the Calaveras grove, which measured 70 feet girth inside the bark at 6 feet above the ground, and which at 40 feet above the ground had 1255 rings. In this case the rings next the bark were 33 to the inch, a number which at 5 feet inward had diminished one-half. The result of many measurements chiefly by Professor Whitney,† gives, as the average height of full-grown trees, 275 feet, and a maximum a little over 320, and a girth outside the bark, at 6 feet above the ground, of 70, with a maximum of 120; whilst the maximum age possibly attained may be 4000 years, though this is very improbable.

The duration of the dead wood in the forest is very great. I rarely observed signs of rot in the fallen trees I examined, whilst in similar forests in Northern California I saw gigantic trunks of Silver Firs forming mounds of rotten *débris* without an atom of sound wood, and this in two years after their fall, as I was assured. I had no data for ascertaining the length of time during which any of the prostrate Sequoia trunks which I saw may have lain on the ground, but Mr. Muir has supplied me with a very crucial case. It is that of a prostrate trunk with no signs of decay in any part of it, which had been burnt in two by a forest fire, and in the trench between the severed portions of which a Silver Fir grew. This Fir was felled, and had 380 annual rings; therefore, to estimate the time during which the Sequoia trunk had lain uninjured, we must add to the 380 years, first the time it lay before the forest fire burnt it in two, and then the unknown interval between that time and the arrival of the Silver Fir seed.

The millenia during which these Sequoia trees must have remained *in statu quo*, proving the long duration of existing conditions of climate, are but as minutes compared with the time occupied by the migration of this very species, or its ancestors, north and south in the continent of America. Whatever might otherwise be the extent of the Sequoia's travels, they are now at an end. Man has pronounced the sentence, "Thus far shalt thou go, and no farther!" The doom of these noble groves is sealed. No less than five saw-mills have recently been established in the most luxuriant of them, and one of these mills alone cut in 1875 two million feet of Big-tree lumber; and a company has lately been formed to cut another grove. In the operations of the California wood-cutters the waste is prodigious. The young, manageable trees are first felled; after which the forest is fired to clear the ground and get others out, and thus the saplings are destroyed. More destructive still are the operations of the sheep-farmers, who fire the herbage to improve the grazing, and whose flocks of tens of thousands of sheep devour every green thing, and more effectually than the locust. The devastation of the Californian forest is proceeding at a rate which is utterly incredible, except to an eye-witness. It is true that a few of the most insignificant groves of the Big-trees at the northern extreme of its range are protected by the State Legislature, and that a law has been enacted forbidding the felling of trees over 15 feet in diameter; but there is no law to prevent the cutting or burning of the saplings, on which the perpetuation of the grove depends, or to prevent the burning of the old trees, which, if they do escape the fire, will succumb to the drought which the sweeping away of the environing forest will occasion.

During the last quarter of a century the Anglo-Saxon has been ruthlessly carrying fire and the saw into the forests of California, destroying what he could not use, and sparing neither young nor old, and before a century is out the two Sequoias may be known only as herbarium specimens and garden ornaments; indeed, with regard to the Big-tree, the noblest of the noble coniferous race, the present generation, which has actually witnessed its discovery, may live to say of it, that "The place which knew it shall know it no more." *J. D. Hooker.*

* "On the Post-Glacial History of Sequoia gigantea," by John Muir, of San Francisco, Cal. *Proceedings of the Amer. Assoc. for the Advancement of Science*, Buffalo meeting, Aug., 1876.

† Very careful measurements of the trees in the Calaveras and Mariposa groves are given by Professor Whitney (State Geologist) in the *Yosemite Guide-Book*, published under the authority of the Geological Survey of California (1874).

Home Correspondence.

Dendrobium d'Albertisii. — Some time since (p. 366, vol. ix.) Professor Reichenbach described in our columns this remarkable species from New Guinea,



Fig. 41.—Dendrobium d'Albertisii. Flower nat. size.

which is now in flower with Mr. B. S. Williams. We understand that the plant is likely to be figured in the *Botanical Magazine*, but in the meantime we subjoin an illustration of a single flower of natural size, and which shows well the singularly long, deep green, strap-shaped petals, which are curved backwards like the horns of an antelope.

Monarda didyma.—Now that hardy herbaceous plants are beginning to assume their proper position as chief among garden ornaments the very showy old Monarda didyma should not be forgotten, as just at this season it is one of the most conspicuous objects that can be grown, its numerous whorls of brilliant scarlet flowers having a most striking effect. This is greatly heightened by growing the several varieties near each other or the scarlet and white in the same clump, the contrast afforded by which is most pleasing, the colours of the two harmonising well together, as do also the purple and white. The general form and appearance of the flowers greatly resembles those of the Salvia, to which they are closely allied, but instead of coming at the joints of the stems they appear in clusters or whorls at the tops, where they continue to open a long time in succession. The Monarda is a plant that likes full sun and plenty of depth of soil to work in, under which conditions it grows sturdy and strong and blooms in the freest manner possible. Like most herbaceous plants it admits of ready propagation by division during early spring just as it is starting into growth, or cuttings may be taken from the young shoots and struck in the ordinary way. *J. S.*

Double Begonia President Burelle (Lemoine). —The woodcut on p. 172 gives an exact portrait of this Begonia when at its best, but having grown and observed it carefully since it was sent out in the spring of 1876, I must venture altogether to disagree with your opinion that this variety is the best of those producing double flowers. My experience shows me that its duplicature is a matter of uncertainty and that its coming so fine as it did this year at the Stanstead Park Nursery in the hands of Mr. John Laing is quite a chance. The first year I had it (1876) it had nothing to recommend it save its brilliant shade of colour, as only some of its male flowers were semi-double; although the plant seemed in full health and vigour planted out in the open air, where I find these Begonias do much better and produce finer, fuller coloured flowers than when grown in pots in the house. Last year my plant was far from being as strong or vigorous as in the preceding year, but the few male blooms it produced were fully double, and quite astonished me by their beauty after what I had seen the previous year. This year my plant is also producing double blooms but not so fine as last year, but I hear from a correspondent in England, that with him the male blooms of this variety are this year altogether single. It is also quite one of the most difficult to propagate of all tuberous Begonias. I may add for the information of your readers that by far the finest double Begonias now in commerce are Lemoine's Gloire de Nancy and Marie Lemoine, which for size of flowers and perfect constancy are altogether unequalled. Emile Lemoine is also a fine variety. *W. E. G.*

Golden Feather Tom Thumb.—As the whole of the gardening Press has borne testimony to the value of this interesting sport, I may perhaps be allowed to state that it showed itself for the first time last summer at my Bedfont seed grounds. The seed was saved and sown, and out of a large number of plants only a very few have the tall growth of the old type, and there is reason to think they were accidental seedlings. So far from the plants having been starved, as some supposed, they have been grown with liberal treatment, in good soil, in which the plants of the old type have grown with unusual luxuriance. Next year it shall be tried at Chiswick, and there the Floral Committee will have an opportunity of seeing it as it is. *R. Dean, Ealing, W.*

An Extraordinary Yield of Potatos. — Off 56 square yards we have dug 6 bushels of good sound tubers, most of them of an extraordinary size. I should have liked you to have seen the face of our man "Tommy," as he rolled them out. An acre at the same rate would produce rather over 172 sacks. Not a bad crop. The sort was Extra Early Vermont. *John Kitley, Wanlip Hall, Leicester.*

Richardia æthiopica.—Much has been said of late respecting the treatment of this most popular plant, but I do not remember to have seen any notice of its having seeded with any one, and as it is doing so freely with me this season I have thought the matter might be interesting to many of your readers. The plants carrying the seed-heads were turned out of pots into the open ground early in spring, and the whole of them threw up two or three flowers afterwards, each of which set and will not be long before they are ripe, so that I hope to be able to raise a batch of seedlings. I regret not having tried crossing with some of the Arums, such as A. italicum, a very ornamental species, as with such a good thing as the Richardia its progeny would probably be valuable. *J. S.*

Visiting Gardens.—An extract from an American contemporary, published in your columns a few weeks since, gave some excellent advice upon this subject, which it is to be hoped some of your readers in this country may profit by. But when they go to visit their neighbours' gardens they should remember to lock up their own, taking the key with them if they think well to do so, but by all means let them leave their garden at home, and make up their mind to use eyes and ears more than their tongue. What little is to be seen in the gardens, &c., near which I write, is open to the inspection of visitors at all times who may think it worth their while to avail themselves of this privilege; and as I am now for obvious reasons writing under a *nom de plume* I may be allowed to sound my own trumpet so far as to say that I believe I am generally considered to be civil and obliging to all comers, but I must admit that my patience has on some occasions been severely tried, and that too by persons who might be expected to act differently. Take the following as familiar examples:—A practical gardener calls, gives his name, and asks to he allowed to look round. This request is, of course, complied with, and he is shown first, say, into a Pine stove. Our visitor does not appear to take much interest in what he sees, but he detains us for ten minutes or more with a minute description of a fine lot of Queens he grew some years since, when he was in the service of Lord So-and-So. A house of Muscat Grapes is next entered, and we are informed that the finest Muscats he ever saw were grown at the Earl of Somewhere's place when he lived there as foreman. The bedding-out is now glanced at, and we are told how well this sort of thing was carried out at such

and such a park some years ago, &c. Now all this information so freely furnished may be well enough in its way, but under the circumstances it is in questionable taste, quite uncalled for, and is an unwarrantable tax upon time and patience. Not unfrequently parties consisting of several individuals will call at garden establishments, and request to be shown over the grounds, &c., and this request is, I believe, very seldom refused. But such parties do not always conduct themselves with the propriety which might be expected, as it is by no means unusual for one or two individuals to appropriate, as it were, the entire attention of the person attending to them, by asking numerous trivial and unnecessary questions, the answers to which they hardly condescend to notice, but will continue to ask questions merely for the sake of asking them; while other members of the party, instead of keeping together, will scatter themselves about the grounds, causing much unnecessary trouble and waste of time to their conductor. I have even known such people to take the unwarrantable liberty of lighting pipes or cigars in the immediate vicinity of the mansion. I have written these lines in no captious or ill-natured spirit—far from that, for there are few things that give more pleasure to a gardener than that of showing intelligent and appreciative people (professional or otherwise) the gardens, &c., under his charge; but very many I have no doubt can sympathise with what I have written, and have experienced the annoyances I have endeavoured to describe and expose, and, if I may venture to hope so, helped in some small degree to mitigate. *A Gardener.*

Fumigators.—In reply to E. K. Carton (p. 186), I beg to say that a long-felt want is now supplied by Mr. Charles Harber, 15, Boughton Street, Worcester, in a registered fumigator (Harber's "Worcester"), well made of substantial materials, and the price (15*s.*) for the largest and most economical size places it within the reach of all. In form it resembles a conical tea-kettle, with a long nozzle for insertion into the pit or house about to be fumigated. It works best from the outside on account of the draught, is easily started, and creates a great saving in material, as every particle is rapidly converted into a dense volume of cool smoke sufficient to fill a large house in a very short time. There is no danger to the most delicate foliage, as it cannot flame, and all impurities are condensed and fall to the bottom. Many nurserymen and gardeners whose opinions are of value greatly appreciate it on the score of economy of time and material; and last, but not least, comfort to the men who have to use it. *W. Coleman, Eastnor.*

—— Harber's "Worcester" Fumigator, a recent invention, is the best I have seen, being simple in construction, very effective, and economical in the consumption of paper. It may be used to advantage outside the house. It is in frequent use here, and is strongly recommended by many of the principal gardeners in this district. *William Cox, Madresfield Court, Great Malvern, August* 13.

The Best Kept Gardens.—I observe you give some prominence to the "keep of gardens" under the heading of "How to meet an old objection to Flower Shows," and you further recommend the idea as a wholesome practical work to country societies. I was pleased to read your remarks, because they justify a hope I entertained that you would not object to render assistance to those who have already embarked on a scheme such as the one you propose. In fact, the idea has been already anticipated by a local society in our neighbourhood. I confess to having misgivings as to the practicability of the scheme in so far as general application is out of the question, if we accept it on broad grounds. The idea would be a capital one if it were practicable, or if some remedy could be suggested whereby all competitors could be placed on an equal footing. When the idea was first carried into practical effect at our local show last year there were—if I remember rightly—sixteen entries for the prize, and amongst them were many who could not in any sense be entitled to a place, not because their garden was not in a creditable condition, but simply because they were competing against overwhelming odds with others who had threefold the extent of ground, means, and material to work upon; and here I may remark that the variety of the entries disclosed a remarkably exaggerated notion of the principle (if there is such a thing as yet understood) upon which the judges were to adjudicate. Some would appear to rely upon the merit of one speciality, some upon another, whilst the judges, who had only one course open to them, awarded the prizes to general merit. The committee, finding that the scheme did not meet with general approval, have, as I think, amended their schedule in one or two material points this year, and have offered prizes in two classes, besides disqualifying the winners of last year from taking any part in the competition; still, there is great need of further improvement before the scheme can be called a practical one. The classes referred to, which may be called A. and B, respectively, are intended to include gardens where only one assistant is kept besides the so-called head-gardener, and gardens of any size; and I am not so certain that there is not some stipulation in both cases (or in the former at least) as to the extent of acreage that is to constitute the charge of an eligible exhibitor. It will be observed that there is a vast chasm between gardens where only two men are employed and where there may be from ten to twenty; there seems to be no provision made for intermediaries. Besides, there is another class—and a very deserving class too—entirely ignored or forgotten, viz., those who are "a man or two short." There are, I understand, some philanthropic gentlemen connected with the movement in our neighbourhood, and no doubt this seeming anomaly will be removed in framing the schedule for another year. The opinions of those who have a practical connection with similar work would be of great service to committees anxious to improve upon existing rules, or to beginners anxious to give the movement a fair trial. *W. Hinds.*

The Pyracantha as a Standard Tree.—The cheerful, berry-bearing Cratægus Pyracantha is well known and fully appreciated as a wall tree, but I think there are but few who know it as a free-growing standard, spreading out on the lawn with charming regularity, the lower branches lying on the ground, and those above so arranged as to form an elegant diffuse pyramid, snowy with flowers in May and all a-fire with berries from mid-September until the birds make an end of them in spring. It needs a good subject to justify a long sentence, but the Pyracantha in standard form would justify any extravagance in th eway of eulogy, for you cannot over-praise it. On the 12th of December, 1865, I placed a few pot-grown trees on a table at a meeting of gardeners in the Strand, and the verdict was unanimous in favour of treating the tree as a standard or bush in addition to its orthodox employment as a wall-tree. When I had the "plunging system" in full operation, the bush trees in pots were invaluable to mix with pot Ivies and such-like in the formation of rich outdoor groups in autumn; but you do not see the capabilities of the plant by any other plan than planting it out, and allowing it to grow naturally in its own free way. It comes from cuttings almost as readily as Gooseberries and Currants, and if grown three years in nursery rows, the trees may be planted where they are to remain, and will need no more care than to be supported with a few light stakes to keep the leader in its place, and slightly regulate the side branches. I send with this note a side branch from a tree that is only eight or nine years old, and I think you will agree that this branch may almost be regarded as a tree in itself, for it measures 5 feet in length, with proportionate breadth, and carries a fair share of berries. Some of my trees are in all the upper branches literally solid with berries, and this not in the present season only, for they never fail to cover themselves with glory, and surpass in splendour all other berry-bearing trees and shrubs in the place. The Pyracantha may be trained as a close cordon, and if pinched in betimes will bear a prodigious crop of berries; but the free natural growth is the best in my opinion, for it results in a display of vegetable beauty that is altogether unique. *Shirley Hibberd.*

The Phylloxera.—I send you a bunch of Grapes for inspection, cut from one of the Vines the roots of which you last year pronounced attacked with Phylloxera. We have entirely destroyed all in one house, which were badly attacked in the foliage, but the second, a smaller house, the subject of your enclosed letter, my employer wished me to try another year, and we have succeeded in getting a very fair sample of Grapes, and a good strong growth and foliage. Can they have outgrown the disease? If they do well another season I shall feel satisfied. The border at present is all inside. *Chas. Herrin, The Gardens, Chalfont Park, Slough.* [The matter is so important that we shall be glad to have the opinion of our correspondents on the subject. We shall give the results of our own observation in a future number. Eds.]

Allamandas as Stove Climbers.—Few plants, if any, equal the above for growing as stove climbers, especially where a large quantity of flowers is required for shallow vases or dishes. It is necessary, if a long period of blooming be required, that the plants should be started into growth early, and they will continue to bloom the greater part of the year. The system adopted by me is to keep the plants blooming till the end of October, when I gradually withhold water until the plants show signs of flagging and begin to lose their lower foliage. I do not attempt to rest them until all the leaves fall off, but partially cut them back after they have been dry for a month or five weeks, and then finally prune them back to one or two eyes, like Vines, and at once repot, which is early in January. If the plants are in pots large enough their balls should be well reduced, giving them a good soaking of warm water before commencing the operation. The compost I find most suitable is rich fibry loam, a small portion of well decomposed manure, and sufficient sand to make the whole porous. The soil is rammed into the pots as firm as it is possible to make it; the plants are then syringed twice a day, no water is given at the roots until they commence to grow. Under this treatment the young growths are from 1 foot to 18 inches in length before showing flower. As soon as the pots are well filled with roots they receive strong manure-water every time they require to be watered. A. Wardleyana (Hendersoni) produces more flowers and is earlier than A. Schottii; the flowers are very useful for packing and travel well, and last several days after travelling from here to London. I find a very short period of rest only is necessary to bloom Allamandas well, and without bottom-heat they do all that can be desired. The plants under my charge here this season had only seven weeks' rest, and have been producing hundreds of fine flowers 6 inches and more over, and have this day (August 6) hundreds of flowers upon them. I use a very light tiffany for shade for a few hours during very bright hot weather. *W. Bardney, Norris Green, West Derby, Liverpool.*

Insecticides.—Being in my small way an amateur Grape grower, and also having an orchard-house for Peaches and Nectarines, I feel a considerable interest in the various propositions for destroying the insect pests which consume so large a proportion of the results of our labour, and beg to give you my experience of a fresh mode of application of an insecticide now becoming known, but I am afraid not yet understood—I mean petroleum. I see in your last week's number a letter from one who has tried it mixed with water for syringing Peach trees, who has had the misfortune to kill all the trees, though they were very large ones. I suppose the mixture of a wineglassful of petroleum to 4 gallons of water was what he used. Now I can only account for this mishap on the principle that he had not kept the mixture thoroughly stirred while using, so that a large proportion of petroleum had been syringed at once on the trees. I have used this mixture, but not very extensively, and the trees have not been injured. I should very much like to see further experiences published. I have been for some years endeavouring to get rid of American blight from Apple trees, and have tried a variety of compounds. This year, finding petroleum killed the blight, but also killed the branch, my man, who had previously, by my orders, tried kitchen fat without success, mixed equal parts of fat and petroleum. The success of the mixture was perfect. Not only did it at once destroy the blight where applied, but in no single instance for five months has it ever reappeared; the branch has made new bark, and become quite healthy. The composition spreads like ink through blotting-paper, and penetrates to the bottom of every crack. It sometimes, but very rarely, damages a leaf, but I have used it freely on young wood at the eyes, where the blight makes its appearance, and with perfect success. Finding this so good for blight I was induced to experiment with it for mealy-bug, and accordingly, wherever the pest appeared on the old wood, I had it freely applied. In no case has there been any damage to the Vine or return of the insect. I tried it on a very tender young Vine leaf, one just formed and not fully grown. I found by putting a patch on it that the green layer was destroyed, but the mischief did not reach beyond the part actually covered by the mixture. I have since extensively followed it up, and find the mealy-bug, when touched with it, is instantly killed and converted into a semi-transparent mass like sponge. I intend to experiment cautiously with it when the leaf has fallen, and believe it to be a most valuable form of insecticide from its peculiar penetrating powers. I hope some of your scientific readers will try this mixture, and let you know the result. I wanted to make some inquiries about a new enemy in the orchard-house, but am afraid to trespass too far on your patience, so will reserve them for a future time. *W. R., Leicester.* P.S.—On looking through the vinery I find the leaf I dressed in April whilst half grown. I have not seen it for months, and enclose it for your inspection. Older leaves and leaf-stalks are not affected so.

The Quercus Ilex at Wilton House.—Perhaps one of the largest and finest specimens of the evergreen Oak to be met with in this country is growing in the pleasure grounds at Wilton House—a place at once famous and historic for its fine trees, especially its Cedars. The tree in question, roughly speaking, is about 45 feet high, trunk 5 or 6 feet high, at which point it assumes several leaders, and about 4 feet through, having a spread of branches of about 90 feet in diameter. This tree, like all the other choice trees, is well cared for by Mr. Challis, who has thought it advisable some time ago (I know not how long) to relieve the principal of some of the numerous extending branches of their weight by supporting them with pillar-like posts, to which the branches are braced by

chains, which, by the way, weight about half a ton weight. The leaden strips of "plaster" which have been applied to various members of this interesting old tree, green in old age, must also weigh several hundredweights. Altogether the tree is most symmetrical, and is a noble example of its kind. *H. H. Ward.*

Potato Crops, Montgomeryshire.—Observing at p. 153 the account which Mr. Lee gives of the state of the Potato crops in Powis Castle gardens, I am induced to furnish you with a report of what I have found to be the case in my garden, which is very near Powis Castle. I have just raised a considerable breadth of Veitch's Prolific, Myatt's Perfection, Lapstones, Gloucester and Sutton Kidneys, and found the crops heavy and singularly free from disease. The tubers were perhaps not quite so large as usual, but this I imagine is in some measure accounted for by my having raised the crops early, my idea being to secure it while I knew it was sound and the avoidance of possible wet weather and consequent disease. *Geo. D. Harrison, Fron Lloyd, Welshpool, August 7.*

Berberis Darwinii as a Hedge Plant. -It is a matter of no ordinary gratification to me to observe the correspondence which has been going on in your valuable columns aboat the adaptability of Berberis Darwinii as a hedge plant I am glad indeed that Mr. Penford has drawn attention to the subject. I can state pretty correctly the date of the planting of the hedges in question, having been the one at whose instance they were planted as an experiment. In the spring of 1869 I found I had a large number of seedling Berberis Darwinii, and having consulted my employer, Viscount Powerscourt (than whom no proprietor in Ireland has done more for the development and culture of all new ornamental plants), it was agreed that we should plant several hedgerows in the newly-formed nursery for shelter, presuming that the beautiful racemes of flower which it so luxuriantly produced in a natural state would be an excellent feature in a hedge if it stood the annual clipping. We were indeed fully repaid for the trial, as the hedge grew vigorously, and in three years began to develope its great beauties. I had the pleasure in the autumn of 1876, while on a flying visit to Ireland, of seeing those hedges, and they were literally loaded with a profusion of blue berries, thereby proving that they must have been loaded with flower the spring previous. Since then I have seen Berberis Darwinii planted as a hedge with similar results; and I am at present rearing a large number of plants to use in this way around our newly formed gardens here. I regret to see that it has been proposed to remove the hedges at Powerscourt to a more prominent position, although I quite sympathise with the desire to do so. I can only say that should this be done death will be the probable result, as no class of plants are more precarious to transplant after attaining some age than Berberis of all species. From the rapidity of growth of the young plants I would rather advise the planting of new hedges, with plants two years old, and the result desired will be accomplished in about two or three years at most, with no risk whatever, and the danger of destroying what at present is a valuable and interesting feature will be averted. Having during the time I acted as forester to Lord Powerscourt planted many of the newer Coniferæ and other rare and ornamental shrubs, I naturally feel a deep interest in anything arboricultural emanating from Powerscourt, and consequently I feel the more gratified to think that this experiment has evoked a passing observation in your columns. I can only say that as an ornamental hedgerow plant, Berberis Darwinii stands pre-eminent. *Chas. S. France, Penkunk.*

Plants in Flower at Drayton Beauchamp. – Amaryllis Ackermani pulcherrima is now in fine bloom with me in the open border, where it has stood three winters, and is throwing up a second flower-stem. It has not bloomed before, but has come up strong every year. I trust that, as in its Derbyshire locality, at Calke Abbey (from whence it came to me), it is now thoroughly established here. Brugmansia lutea and sanguinea are also both in bloom; the former has stood one winter, the latter four. Hyacinthus candicans and Bravoa geminiflora are also both in bloom, and seem to have established themselves. The little Gladiolus permeabilis, white, with a purplish line down the centre of the petal, is also in flower. I received it from Mr. Elliott, of Port Elizabeth, together with a very sweet-scented pale blue Babiana, the name of which I do not know. *H. Harpur-Crewe, The Rectory, Drayton-Beauchamp, Tring, August 12.*

Coleus The Shah.—Amongst the table plants exhibited at the Cheadle show on the 9th and 10th there was a very nice specimen of this variety. It appears to be a very beautiful variety, the leaves for the most part being similar in colour to C. Verschaffeltii, only the tip of each leaf is of a golden hue, which at a little distance gives the plant an exceedingly pretty and novel appearance. Large plants of this variety would doubtless be very effective for the decoration in summer of some conservatories, especially such as are not much shaded. This variety of Coleus appears to be more constant in habit than some of the other newer varieties, more, at least, than Duchess of Edinburgh, which only now and again has a beautiful shoot upon it. *R. M.*

Ulmus montana foliis variegatis. — Some five or six years ago Mr. Capers, then gardener at Woodcote Park, Warwick, sent you a note relating to a variegated form of the English Elm growing on a white sandstone rock in the parish of Leekwootton, Warwick. If I remember rightly Mr. Capers spoke of it as a natural type or form of variegation, *i.e.*, as being so found in the locality it is growing in. Whether that be so or not, it has the true form and growth of a common English Elm, or I might say Warwickshire Elm, for nowhere do you see them in greater glory, and such has been the opinion of most people claiming any knowledge of tree nomenclature. Well, sir, "a chiel amang us takin' notes" meets with it, measures its height —over 50 feet, and its circumference, 96 inches—and describes it in the *Garden* as the finest variegated American Elm he has ever met with. And I should rather think it was, but to dub a true-born Briton growing on his native soil (who has been there longer than the "oldest man in the village" can remember) an American is more than Britons can stand, whether men or trees. *Campestris.* [The leaves sent seem to us to be those of the variegated Wych Elm, U. montana, but the error is a pardonable one. Eds.]

Rhododendrons.—Towards the end of this month these plants often suffer from drought unless planted in heat and the weather be showery. To obviate this, and also to cause abundant blooming, I have for several years past used lawn sweepings with the best effect. They should be put on after rain. I have seen sawdust used for planting Rhododendrons in: if deal sawdust be used the plants grow luxuriantly and bloom well, but Oak sawdust causes no bloom, showing the difference in the effects of turpentine and tannin. *Observer.*

Peaches not Setting.—The Peach range here (North of Scotland) came under my care last November, when there was a fair supply of young wood, although not well ripened. The dull, wet season was, no doubt, unfavourable; but it might have been improved, as the range is amply heated. However, our crop is a failure. The trees were pruned and dressed in the ordinary way, and they commenced to start in the beginning of March, some of the freest fruiting varieties having a fair show of bloom. Fine weather prevailed at that time, and all appeared to go well till they became of the size of Peas, when all dropped off. We were sure the border could not be dry, but on making a second examination and going a little deeper we found very few roots in what is intended for the border, most of them descending some feet down into the cold soil. The garden is situated on a peat moss, most of it from 4 to 9 feet deep, and as the soil for the border has been laid on the moss without any stones to prevent the roots going down into the cold soil, we think this gives a clue to the cause. Eight years ago over fifty fruit trees were planted here, one half of them wall trees, the other as standards. The wall trees had a good show of bloom, but went the same road as the Peaches, and the standards have a sickly appearance. Thirty years ago a wall 300 feet long was planted with Plums on flags 6 feet by 6 feet, and the trees are in fine health, and ripening a good crop. *Bonair Raig.*

Lobelia carnea plena.—At the nursery of Messrs. Cole & Sons, Withington, I noticed this in flower a few days ago. It is a beautiful dark scarlet flower; indeed, looking at a single blossom, I could not call to mind any flower of such a deep colour. These tall-growing, red-leaved Lobelias are now rarely met with, but for making up variety in a mixed border they are very valuable. *R. M.*

Flower Garden at Hampton Court.—Those intending to visit this historical palace, and who are also interested in the modern style of flower gardening, would do well to lose no time in doing so. The bedding-out is at its best, and the grounds are also in excellent keeping. There is enough of what is termed carpet-bedding without its being overdone, and, if this style of gardening can be tolerated anywhere, it is in such places as our public parks and palace grounds that are open to the public, as the large mass of the people seem to hang over and admire them. There are nine beds in the form of parallelograms devoted to the carpet style, arranged parallel to the the long walk in front of the palace. All of these are worthy of study to those who have to do such work, or who happen to be in any way interested in them. The beds numbered 3 and 4 I admired the most—3 would certainly be the best of the two, except that it has not quite enough colour. This could be altered another year; one suggested improvement would be to plant one of the highest-coloured golden tricolors, instead of the silver tricolor Mrs. Laing, in the bed numbered 4 on the plan. In these beds the best plants used are Sempervivum montanum: this is certainly the best of the species for carpet work. Leucophyton Brownii is very pretty in small circles in No. 8 bed. Achyrocline Saundersonii is very pretty—it is a hardy plant, with silvery foliage, and very dwarf. Alternantheras magnifica, amœna, and paronychioides are in nearly all the beds; Kleinia repens, Pachyphytum bracteosum, Veronica incana, and a few other well-known plants serve to complete the arrangement. There are over 100 more beds distributed over the lawn. I noted one or two of them as rather different from the usual style, and remarkably pleasing. Bijou, with alternate lines of Viola Perfection, has a fine effect, one such edged with Golden Harry Hieover is also very good. Viola Tory is also used in combination with the variegated Pelargonium. This is darker than Perfection, and Mr. Graham considers it the best. Tory is also used to form a ground-work for a thinly planted bed of Abutilon Thomsoni, and is exceedingly effective in that way. Passing over the other features of the garden, I was much interested is some trial beds of Dr. Denny's new Zonal Pelargoniums, presented by Messrs. Veitch, of Chelsea. It was scarcely a fair trial, as the plants were all from spring struck cuttings, and this season has had a tendency to encourage undue development of leaf. There was enough bloom to show that many of them will make excellent bedders. Each of the great raisers of Zonal Pelargoniums have a strain peculiar to themselves, and there is no mistaking that of Dr. Denny. This raiser came upon the floricultural world with something like a surprise when he introduced to our notice the set containing such distinct flowers as Wellington, Ianthe, Sir Charles Napier, Iago and others. Since that time Dr. Denny has been earnestly working to improve his strain, and has succeeded; the flowers are the largest of any, and the form, colour, and substance of the petals seem to leave nothing to be desired. I noted the following as very fine. Nyanza is perhaps the best scarlet; it is a splendid sort, with immense trusses of very brilliant scarlet, and the pips 2 inches across, very free flowering. Moxham has also scarlet flowers of the florist type, the trusses stand well up above the foliage; it flowers very freely, and will, I fancy, make a good bedder. Titania has large trusses, with splendid pips of a crimson shade. As seen here the flowers are not quite freely enough produced, but planted in rather poor soil, from autumn struck cuttings, I fancy it would be free enough. Globosum majus is a very striking variety from a distance; the flowers are crimson magenta. This will make a fine bed if the flowers are produced in sufficient quantity. Cleopatra, large trusses and pips; the colour is very distinct, and seems to have been borrowed from Ianthe, a violet-magenta; the flowers are much larger and of a better form than Ianthe, of course. Amazon is the strongest grower of the lot, has immense trusses of flowers, which are brilliant scarlet and of fine shape. It would be grand for very large beds, even if planted in poor soil. Heather Bell is the last one that I have any notes of. The colour is a pale pink with white centre. The flowers are well shaped, but I fancy it will do better as a pot plant than as a bedder. It does not make such an effective bed at a distance as Amaranth, yet as a flower, looked at from a florist's point of view, it is infinitely superior. *J. Douglas.*

The Potato Crops.—I have read with great pleasure your reports from all quarters of the present satisfactory position and promise of the Potato crop of the present year—the fruit of by far the greatest value to the labouring population. It must, however, be borne in mind that the encouraging growth and appearance of the haulm after the middle of July is usually accompanied by the growing out of the tubers below, which greatly diminishes their value for food. In the very full and accurate report of the management of my Potato crop from the planting to the harvesting in 1876, and the period of consumption, and which you published in the *Gardeners' Chronicle*, is the following extract:—

"At the end of July, 1876, on a careful examination of the crop, I found the haulm and leaves in a green and vigorous state without the usual indication of disease on either. On inquiry amongst my neighbours I received the same encouraging reports; indeed, such were the reports given in the *Gardeners' Chronicle* in the month of August from Scotland, and various English counties. About the middle of August occurred some heavy rains, after some very hot sunshine, and the haulm still appearing green, I apprehended sprouting of the tubers underground; and bearing in mind the success of an experiment on a small scale under similar circumstances at a former period, of drawing off the haulm by the roots, I

resolved on adopting that course throughout my main crop. The Potatos were formed, in point of size, but as yet unripe, the skin not being set firm. At that date, I desired my gardener and his assistants that they would, placing one foot close to each side of the plants, carefully draw the haulm by the roots without disturbing the tubers."

On forking up a root here and there recently, and observing symptoms of vegetation in the tubers, I forthwith had all the haulm drawn, perpendicularly, as before described. Though this uprooting of the haulm in my crop of 1876 was not adopted with any view of the disease, of which there was then no appearance, it is not improbable that it may have had some influence in arresting the disease, when it is borne in mind that it broke out very generally before the end of August in 1876, especially in and around this parish, as I saw reported in the *Gardeners' Chronicle* soon afterwards; and that my crop, after the various operations of harvesting stated in my report, yielded 72 bushels of sound Potatos with twenty-three faulty tubers only, and those chiefly from having been eaten in the ground. *Charles Laurence, The Quarry, Cirencester.*

Notices of Books.

Flowers; their Origin, Shapes, Perfumes, and Colours. By J. E. Taylor, Ph.D., &c. Hardwicke & Bogue.

Not so very many years ago botany in this country meant merely the counting of stamens and pistils so as to ascertain the name of some wild plant. The general introduction of the so-called natural system effected a great improvement. Ideas of the relationship and interdependence of plants were necessarily evolved. Still, however, there was too much counting of spots and splitting of hairs, with little or no object beyond that of finding out the uncouth name which some botanist had applied to some harmless weed. If there were any higher object it was to perfect "the system," to see how the plant could be fitted to the system. Now we are very far from undervaluing either the names of plants or the claims or "system": both are imperatively necessary; but when the name is practically made of more importance than the thing it signifies, and when the system is more studied than the plants composing it, it will be owned that the means are more considered than the end. That such was the case in this country with regard to botany in general is, we think, beyond dispute. But the promulgation of Mr. Darwin's views at once altered this, and lifted botanical study from the rut into which it had fallen on to the high road of progress. Plants are no longer studied as so many dry bones, they are studied as living, sentient beings, with a wonderful life-history of their own and a heritage yet more wonderful: in a word, they are now studied as God's creatures, replete with all marvels—the beauty, the fitness, the growth, the life with which He has endowed them. A whole world of wonder and beauty has been again held up before our gaze: we say again, for the life history of plants is no new department of science. It is one which had been unduly neglected, owing probably to the immense influence exerted by Linnæus, the De Jussieus, and other systematists. Philosophers of their calibre might devote their chief attention to system with the greatest advantage, because they were too wise to misuse it or to neglect other departments; but feebler folk almost necessarily fell into the narrow errors we have before alluded to. To Darwin mainly we are indebted for altering this state of things. He it is who has shown that the true basis of natural classification is the genealogical one—that plants stand related one to the other not only by the fact that they exist together and have certain characteristics in common but that they have an ancestral derivation from a common stock—which is the basis of the so-called natural order. Then comes variation, an innate tendency called into play by the varying conditions under which the plant grows, adaptation of organs to particular ends, the survival of the fittest in the internecine struggle, the extinction of the unsuitable and of the feeble.

The fecundity of such ideas is shown by the progress that has been made in the knowledge of the life-history of plants within the last twenty years. And this knowledge is not only important to the botanist and physiologist, it is of vital consequence to the cultivator, and it is on this ground, especially, that we frequently call attention to the matter, and urge our readers to make themselves familiar with what has been done by the botanists within the last few years. Assuming the possession of a very small amount of elementary knowledge of the construction of flowers, no more than a schoolboy of ten or twelve years can acquire in a few weeks, if properly taught—assuming such an amount of information, then, we would recommend the young gardener, and any one interested in plants, to study such works as that of Sir John Lubbock, on British Wild Flowers, formerly reviewed by us, and that which supplies the text for these present observations.

Dr. Taylor's book, to which we now allude, covers a wider field than that of Sir John Lubbock, and is not an original work, but avowedly a compilation. Its tone is excellent, it reveals the fallacies and narrow ideas of theological casuists; it shows the noble aims of modern botany, and the clearer conceptions of Creative Power and Wisdom that it opens up. Its scope will be judged by the headings of the chapters, which are devoted to the consideration of the old and new philosophy of flowers, their geological antiquity, their geographical distribution, their structure, and their relations to earth, air, water, winds, insects, and birds, their colours, perfumes, shapes, their habits, and their means of defence. In a word, Dr. Taylor's object seems to be to give the reason why such or such a plant has such a structure and conformation. It is no longer to be looked at as a pretty or a beautiful thing, to be ticketed with an ugly name, but its meaning is to be sought out, and the lessons therefrom derived are to be utilised. Quite beyond conception are the multitude and the magnitude, the marvel and the harmony of the lessons so to be learnt, and the awe and the reverence they are calculated to engender. We cordially recommend Dr. Taylor's book to our readers, and when a second edition is called for we would advise him to consider the propriety of omitting the coloured plates, or of substituting better ones.

The Native Flowers and Ferns of the United States. By Thomas Meehan. Boston: Prang & Co.

We do not think a better selection could have been made of an editor for such a publication as this. It required one conversant with the subject—in full sympathy with it—and one conscious of the wants of the general public and able to supply them. The work is intended to comprise illustrations of a selection of the more striking and interesting flowers of the United States, accompanied by suitable descriptions. Scientific sequence is not attempted, but the descriptions will be accurate, and, like the plates, drawn from Nature. Of the parts before us we can speak highly. The coloured illustrations are accurate so far as they go, and effective, but not exaggerated.

The letterpress is clearly printed on good paper, and comprises a short technical description taken from the standard American Floras, and then a pleasant gossiping history of the plant, neither diffuse in style nor patronising in tone, as such books are apt to be when written by authors full of knowledge for a public not over-endowed with that precious possession. The geographical distribution and properties, medicinal and otherwise, are not overlooked, and numerous references are made to those points in the life-history of plants to which Mr. Meehan has paid so much attention, and which lend so much interest to the study of flowers. Mr. Meehan's publication will do much to dispel the impression that botany is all hard names and dry systems. Many of the plants figured are of course well-known inmates of our gardens, which furnishes another reason for our calling the particular attention of all lovers of hardy plants to it.

—— A second edition of Sir Joseph Hooker's *Student's Flora of the British Islands* has been published (Macmillan). It is the most compact and complete British Flora that we have. While we think it no drawback for the beginner that the synonymy is not given at length, yet we think it would have been advisable to have added references to easily accessible figures. Although the British Flora may be considered as pretty well worked out, yet there are probably numerous varieties and local forms yet to be added. We may cite one instance that has recently come under our notice at Hythe, but which we do not find mentioned in any of the Floras—viz., a small form of Silene maritima with the petals but little exceeding the calyx. The variety in question was very abundant, mixed with the ordinary form and growing under precisely the same conditions. Yet the very different appearance of the flower would point to some difference in the life history of the plant. Adverting to this subject we regret to find that the reference to a possible second volume, devoted to the principal morphological and physiological peculiarities that have been recorded in our British plants, no longer finds a place in the Preface. This second edition appears to have been carefully revised and brought up to date, and is indispensable to those who wish to have a comprehensive and accurate idea of the British Flora.

Publications Received. — Gardener. — Villa Garden.—The Bulb Garden, by Samuel Wood.—Alphabetical Handbook for England and Wales (Murray).

Forestry.

The American Forests.—The following extracts are taken from a letter from an extensive timber merchant of Montreal, and published in the *Boston Commonwealth*. The result, so far as the older States are concerned, is startling. Already there are only four States among the twenty-six north of the old slave line and east of the Rocky Mountains whose forests are capable of supplying lumber enough for transportation beyond the limits. The writer, Mr. Little, remarks that

"The question of the timber supply and consumption of the country is a matter in which every individual, high and low, rich and poor, of 40,000,000 of American people, is interested. Of the twenty-six States comprising the New England, the Middle, the Western and North-western to the Rocky Mountains, only four, namely, Maine, Michigan, Wisconsin, and Minnesota, are now able to furnish supplies beyond their own requirements. The State of Maine, which not long since could boast of most extensive Pine forests, is now all but stripped of that valuable wood, and is besides so far denuded of its once-supposed inexhaustible supply of Spruce that the lumberers are forced to the head-waters and tributaries of every river in the State to hunt for supplies, and are stocking their mills in a large measure with logs cut from sapling poles of from 6 to 8 inches in diameter; and this reckless and wasteful slaughtering is carried on to such an extent, to supply the neighbouring States and for shipment abroad, that a few years will find the people of that State without building timber, either Pine or Spruce, for their home consumption. The northern sections of Michigan, Wisconsin, and Minnesota are the only localities of the whole twenty-six States that are able to furnish supplies of White Pine beyond the wants of their own respective States; and the demand on them is so heavy for all sections of the country that it will not be possible for them to respond to it for more than six or seven years longer. Yet, notwithstanding this state of the case, the lumberers keep slaughtering away as if life depended on how soon they could rob the country of its timber wealth and bring about a timber famine, to the utter ruin of the wood industries of the country, in which every member of the community is deeply interested. Not satisfied with the havoc they are making to keep their own markets continually largely overstocked, they have also made extensive preparations by fitting up their mills for the manufacture of deals, to drive, as their lumber papers boast they will, the Canadian supply out of the British markets; and they are besides at work using up the best of their White Pine in the manufacture of board-wood and square timber for the same markets; a course most destructive to the forests. In fact, lighting the candle at both ends would fail to fitly describe the utter recklessness and folly of their proceedings—they are casting it bodily into the fire.

"We have theories and speculations on the forests as influencing the rainfall, and their value as reservoirs to keep up a supply of waters for the rivers, watercourses, and canals, and afford power for machinery, but who has given consideration to the consequences to the whole country of a dearth of timber? Who of your statesmen has given his mind to think on its effects on the 173,450 industrial establishments, and the 1,093,202 operatives, who, as shown by the census returns, as far back as 1870, are engaged therein, providing the people with the finished wood materials so indispensable to their well-being? Who of the delegations from the North-western timber sections, that are now praying Congress to prevent Canada from giving any assistance to prolong the life of these industries, has taken into account the consequences of a failure in their timber-supply on the settlement of your boundless, treeless prairie country, or the deprivations it will entail on its inhabitants and the millions who are to make it their home? Who of your whole people has given himself the trouble to understand that it

would require you to raise $500,000,000 to send abroad to purchase an amount of lumber equal to your present consumption for a single year, or that all the tonnage of the whole world would fall far short of being able to freight from your Pacific territories to your Atlantic seaboard? The aggregated freighting capacity of the world is only about 18,000,000 of tons, while the 12,755,000,000 feet of lumber shown by the census returns of 1870 to have been sawn in 1869 would make a tonnage of 21,000,000, from which it will be seen, that, without taking into account the thousands of millions of shingles and the millions of feet of timber of all kinds consumed at the same time, there is not tonnage enough in existence to freight that single item of sawn lumber alone around Cape Horn, and how inadequate it would be to meet the shipping requirements for the whole consumption of all kinds of building-timber and wood for other industrial purposes of the present day, and how much more so by the time your present stock is exhausted with so many more millions of consumers to be supplied.

"From the utter indifference and neglect with which this momentous question of the supply and consumption of timber is treated by your people, it might be supposed you could dispense altogether with its use, or that you could reproduce it as easily as raising a crop of corn, or that you would have no difficulty in finding a substitute; but it takes a century to grow a standard Pine saw-log, and if there is a country on earth in a position to do without or find a substitute for timber, that country is Great Britain, and yet she increased her wood consumption at an average rate of 10 per cent. a year for the last ten years, and last year, as shown by her trade returns, it was 31 per cent. more than in 1875, and the import of that island, not half the area of your State of Texas, and being, as it were, thoroughly finished up throughout its whole extent, showing no further room for improvements, amounted to no less than 100,000,000 dols. But large as that sum is, it is comparatively small to what the United States will soon yearly be called on to supply for its own wood consumption, and it is not a luxury that can be thrown aside at will; it is indispensable to the national well-being.

"I know that the impression prevails, and it is often stated by interested parties, that it matters little what is the condition of your supplies, as you have but to look to Canada, where can be found 'enough for the most exacting populations of the world for centuries,' which is the statement usually made by those utterly ignorant of its true condition, or those who do so for a purpose; and I will here assert, from a personal knowledge of most of the timber sections of Canada, and trustworthy reports from others, that we have not, from the far-off province of Manitoba to the Gulf of St. Lawrence, as much Pine, Spruce, Hemlock, Oak, Ash, Elm, Whitewood, and other commercial woods, as would supply the whole consumption of the United States for a period of three years; and the whole accessible Pine localities have besides been run over to such an extent for such Pine and boardwood timber as would pay to ship, that many of our lumberers have been forced to seek for these descriptions of wood-goods to supply the English demand in your north-western timber territories, where they may now be found cutting down on an average three trees to get one stick of timber, and leaving the others from some trifling defect to rot in the woods—a waste of this valuable material that you can ill afford. I will further venture the prediction that the near future will reveal such a state of things in regard to the timber question as will bring your Government fully to realise it would have been a wise policy on its part to have paid a bonus for the importation of our lumber, if by such means it could have been saved for the use of your people, than the course it has adopted in driving it away to foreign markets by the imposition of duties to any amount."

Apiary.

I SEE by your columns that Mr. Hunter has given in his report, stating the result of the honey harvest for 1878, which is a very disheartening one to the apiarians in the South. Our honey season here (Berwickshire) at the time of Mr. Hunter's report was just beginning, and has been the best I have seen for years. We have just about three weeks here of what we call our honey season, viz., from July 1 to 20; but though the season has been an excellent one honey has by no means been plentiful: the harvest indeed was great, but the labourers were few. Judging by my own stock and some of my neigbbours, I think it is no exaggeration to state that our stocks set down last autumn died at the rate of 90 per cent. This melancholy disaster I attribute to the miserable bee season, or anything else season, of 1877, the principal want being they never got in what is well understood here as their back-end brood; therefore when spring came, the few old bees remaining died before young brood could be hatched. None of my stock, or none that I have examined, died from want. We had to feed a great many of our later swarms the whole of last summer and winter, and we had none but what required constant feeding this spring to keep them alive. Out of all the bees I had last year only six lived over winter, and out of the six only one survived the spring; in this I thought myself lucky, as three-fourths of our bee-keepers here had none. I give you a report of the doings of my remaining one. It swarmed thrice, all of which I put into separate colonies (a practice I don't approve of, unless in a case of this kind, when we are upon our last legs for stock). The first swarm came off on June 14, the second three days later (rather an unusual occurrence), the third one day after the second: the old stool now weighed 45 lb., the first swarm 60 lb., the second 35 lb., and the third 30 lb.; making a total of 170 lb. gross weight (straw skeps I am speaking of). This is nothing unusual, but it shows the crop of honey we have had here within the dates mentioned. Another of my neighbours has just come in, and he tells me he has been taking the ends off his (Nutt's) wooden hive, and he has got 80 lb. of solid honey: this hive was managed on the non-swarming principle.

We are all getting ready here to take our bees to the heather for our second crop, which, if the season is a good one, generally beats the one at home. We take our bees a distance of 16 miles, the mode I need not here describe. *W. A.*

FLORISTS' FLOWERS.

DAHLIAS.—With the middle of August come the Dahlia shows. In fact cut Dahlias have already been seen, but they are pretty well certain to be uneven in size and not well developed. In a week or two there will be plenty of good flowers. The late rains have caused a strong and rapid growth in the plants, and some of the strongest growing have become what the old florists used to designate as being too "sappy," meaning thereby a dense, soft, and weedy growth. This cannot be avoided, but the best thing to do is to remedy it as far as possible. This is best accomplished by tying out the shoots to admit all the air possible, and tying the plants securely, as in the state of rapid growth the rough winds which invariably accompany heavy rains will do the plants much harm.

But the rain cannot last for ever, and bursts of sunny drying weather are certain to come. Then the water-pot must come into requisition to give the plants a good watering over the foliage of an evening, and if a spell of dry weather follows watering at the roots must be attended to. Mulching at the roots is of great importance in producing good exhibition blooms, and if not already done should be attended to without further delay, using partly decomposed manure.

Sometimes the blackfly becomes troublesome, clustering about the young growths and obstructing their well-being. Vigour in the plants is the best resisting condition, and to get them to grow strongly is a wise proceeding. It is weakly rather than strong plants that suffer most from this insect visitation.

It is best not to be too eager to thin out the shoots and disbud, and when attempted it should be done sparingly at first, leaving a goodly number of buds on the largest varieties. All thinning needs to be done with caution, and a knowledge of the varieties is of great service, or with indiscriminate thinning many varieties will be made coarse and open in the petal. Varieties that no amount of growth will cause the flowers to become coarse, need to be disbudded freely. All this knowledge is of the utmost importance to exhibitors, and it is gained only by experience.

Slugs are plentiful, they have taken possession of the garden for the season, and with earwigs will require to be looked after; for in a short time they can do irreparable mischief to a promising flower.

The classification of Dahlias is but imperfectly understood, for at a recent provincial show there was a class for "twenty-four Dahlias, self-coloured," and yet many of the light ground tipped flowers were found among them. The literal rendering of the terms of the class should have led to the disqualification of all but self-coloured flowers, but custom had sanctioned the exhibition of tipped varieties. All but fancy flowers were regarded as "self-coloured" flowers. In some parts of the country all tipped flowers are admitted as fancies, and to disqualify on this ground would lead to much heart-burning. It is a case where custom overrides the distinctions set up by florists. *R. D.*

Reports of Societies.

St. Austell Horticultural: *Aug.* 6.—This, one of the oldest horticultural societies in the country, held its annual show on the above date, and although occasional showers descended, to damp the spirits of the pleasure-seeker, yet the show was crammed to excess, and the town and neighbourhood appeared to hold general holiday. The show was held in the Market House, which was very tastefully decorated, and a temporary fountain in front of the band-stand was quite an attraction.

The show is kept up principally for cottagers, but there are about thirty classes devoted to open competition, the great feature of which is the collections of plants shown by gentlemen for a silver cup—the prize being offered for a collection of an unlimited number. We cannot help thinking it would be much more satisfactory if prizes were offered for sixes, or twelves, as the case may be, as parties residing at a distance would then be placed more on terms of equality with those near; and not only so, it would encourage the cultivation of flowering plants, without which a show has a dull appearance, and in the present instance they were very scarce.

The silver cup was taken by T. Martin, Esq., St. Austell (Mr. Dunn, gr.), among whose plants were some well-grown specimens, principally of foliage plants, a fine Dæmonorops periacanthus, towering high above its fellows; a good plant of Latania borbonica, a monster specimen of Maranta zebrina, several Crotons (eight varieties), some of them very good plants; also a seedling Croton, apparently a cross between Weismanni and majesticus: it cannot be better described than by saying it is a red variety of Weismanni. His best flowering plants were Stephanotis floribunda, Clerodendron Balfourianum, Allamand Hendersoni, and A. grandiflora.

In addition to the silver cup Mr. Dunn also won nineteen other prizes, fourteen being 1st, and the silver medal for getting the greatest number of prizes in the open competition.

Mrs. Drew, St. Austell (Mr. Daniell, gr.), was awarded 2d prize, with a fresh, well-grown lot of plants, including two or three good specimens of Allamanda Hendersoni, a Bougainvillea glabra, Clerodendron Balfourianum, a fine plant of Alocasia intermedia, Alocasia zebrina, Maranta Warcewiczii, some good Crotons and Palms.

In the competition for fruit Dr. Treffrey (Mr. Gale, gr.) figured very prominently, taking seven 1st prizes and three 2d, his specimens plainly showing Mr. Gale to be an excellent fruit grower. For a collection of fruits Mr. Gale was 1st, showing fine examples of Black Hamburgh and Bowood Muscat Grapes, a nice Queen Pine, Peaches, Apricots, Melons and Tomatos. Mr. Daniell was placed 2d with some good Peaches and Nectarines, also Black and White Grapes, a Melon, and various small fruits. Mr. Gale was the only exhibitor in the class for a Pine-apple, and took 1st prize with a fine specimen of Queen. Mr. Hill, gr., Halligan, showed a splendid bunch of Black Hamburgh. Grapes, and easily won 1st prize. He also obtained a 1st for a dish of fine Peaches. Good collections of cut flowers were shown (not for competition), principally by the local nurserymen, Gladioli forming the chief feature.

In the cottagers' department vegetables were in strong force, and too much praise can hardly be bestowed on the exhibits. Potatos were exceedingly fine, while Beans, Carrots, Parsnips, and almost every other ordinary vegetable were shown in large quantities and of good quality. *R. G.*

Olney Horticultural: *Aug.* 6. — This Society carries on its operations under some degree of difficulty, inasmuch as there is scarcely a place within a few miles of it where plants are grown; and the managers have to trust to friends at Newport Pagnell, Bedford, Northampton, &c., for assistance on the occasion of the annual show. The flower show is the only holiday afforded to the dwellers in this remote Buckinghamshire village, and its recurrence is anticipated with great pleasure, as great numbers come in from the surrounding villages to participate in it.

The best eight varieties of stove and greenhouse plants were sent by Messrs. Ball & Co., nurserymen, Northampton, and comprised Hibiscus Cooperi, Caladium Belleymei, Begonia floribunda, Caladium bicolor splendens, Dracæna regina, &c. The 2d prize was withheld in consequence of the smallness of the plants; but a 3d prize was awarded. The best specimen plant was a fine Dracæna excelsa, from

Messrs. Ball & Co.; Mr. Howard, gr. to G. Robinson, Esq., being 2d with Yucca aloifolia variegata. The best six Pelargoniums came from Messrs. Ball & Co., and included two of the "regal" varieties, Prince of Novelties and Queen Victoria. The plants, though not very large, were nice and fresh; Mr. Howard was 2d, with a collection made up altogether of variegated varieties. Messrs. Ball & Co. were the only exhibitors of six Fuchsias, six Ferns, and six Caladiums; the latter including good examples of C. Wightii, bicolor splendens and Chantinii; also six nice plants of Zonal Pelargoniums; C. Hutton, Esq., being 2d. Balsams and a few other things did not call for remark. Cut flowers were represented by Roses, the best twelve coming from Messrs. T. Perkins & Sons, Northampton; Mr. G. House, Daventry, being 2d. Messrs. Ball & Son had the best twelve bunches of cut flowers, C. Hutton, Esq., being 2d; and the same exhibitors were 1st and 2d with cut examples of Zonal Pelargoniums. Zinnias were very good for the time of year; and there were good Stocks, Carnations, and Picotees, Hollyhocks, &c.

All kinds of hardy fruits were well represented. Apricots were particularly good; while Gooseberries, Currants, Morello Cherries, &c., were highly creditable.

It is in the vegetable classes that the keenest competition takes place, and in all the divisions, open classes, amateurs and cottagers, all vegetables were of excellent quality. The great competition laid in the amateurs' class for six dishes of Potatos, and here Mr. Walter Snow, the secretary to the Society, was 1st, with good examples of Red Emperor, Red-skinned Flourball, Giant King, International Kidney, Garibaldi, and Snowflake; Mr. John Lord was 2d. In the cottagers' class for the unusually large number of eight varieties, C. Adams was 1st, and W. Maynard 2d.

Messrs. Ball & Son sent a large collection of Potatos, not for competiton, which included Schoolmaster, Lye's Favourite, Blanchard, Centennial, Oxford Beauty, a white round; Giant King, Garibaldi, Success, Cattell's Eclipse, Purple Ashleaf, Magnum Bonum, International Kidney, and Snowflake. (*From a Correspondent.*)

Brackley Agricultural and Horticultural: *Aug.* 6.—This Society was formed for the purpose of encouraging both horticulture and agriculture in its own district, and in addition to a flower-show held on the above date there will be a show of roots, horses, &c., on October 16, the flower show having been preceded by a wool fair held on June 19. This year the experiment was tried of having a flower show apart from that of agricultural produce, but the weather, which is frequently an unfortunate interposing agent at Brackley, was somewhat unpropitious, and marred the success of the day's proceedings. The show took place in the grounds of the college chapel, Brackley, an edifice associated with Magdalen College, Oxford, and quite in the heart of the town.

The contributions were staged in four large tents, in one of which the cut flowers and table decorations were collected. The last are always a leading feature at Brackley, the sum of £10 being offered in four prizes, each exhibitor being required to cover a table with a cloth and decorations, 9 feet by 5 feet being allotted to each. The 1st prize was awarded to Mr. J. Parker, nurseryman, for a charmingly graceful arrangement, but the centre piece, which was in itself perfect, was detracted from by the employment of a kind of outworks of shallow glass troughs, which also needlessly filled up the table. 2d, Mr. Hoskins, The Gardens, Stowe, Buckingham, with an arrangement similar in design to that shown the week previously at Buckingham, but decidedly stale; 3d, Mr. B. West, Shalstone. In the class for a single piece there was a numerous competition, but in point of taste they fell far short of what was produced in the larger class, being generally too crowded.

In the class for twenty-four Roses Mr. George Prince, nurseryman, Oxford, staged some superb flowers, probably from young seedling Brier stocks, the most striking being Etienne Levet, Madame Victor Verdier, Devienne Lamy, Marie Baumann, Dr. Andry, Auguste Rigotard, François Michelon, Maurice Bernardin, Sir Garnet Wolseley, &c. In addition Mr. Prince staged six other boxes of twenty-four blooms, that greatly helped the show. The best collection of cut flowers, unlimited in extent, came from Mr. Parker, and contained blossoms of stove and greenhouse plants, &c.; Mr. C. Rowe, gr. to Mrs. Hopcroft, Brackley, being 2d; and Mr. B. Niel, Shalstone, 3d. There was also a class for eighteen bunches, which was well filled. Dahlias were poor, and it appeared to be too early for the growers round about. Collections of Pelargonium blooms were well shown, the zonal varieties being especially fine.

The leading class for plants was for eight stove and greenhouse specimens, the best coming from Mr. J. Parker, nurseryman, Rugby, and included Dipladenia insignis, Clerodendron fallax, [C. Balfourianum, Bougainvillea glabra, Eucharis amazonica, Allamanda Hendersoni, and Statice profusa; 2d, Mr. C. Wells, gr. to Viscount Valentia, Stratton Audley. The best twelve ornamental foliage plants also came from Mr. Parker, Mr. Wells coming in 2d again. The best collection of Ferns came from Mr. Parker, Messrs. Osborne and Rowe being equal 2d. Ferns are evidently plentiful and pretty well grown in the Brackley district. Mr. S. Osborne, gr. to the Earl of Effingham, Tasmere Park, had the best three, having Adiantum cuneatum, A. formosum, and Blechnum occidentale in excellent condition; 2d, Mr. Bloxham, gr. to the Hon. C. Barrington, Prestbury Manor, with Adiantum cuneatum, Pteris cretica albo-lineata, well grown; and Asplenium bulbiferum. One interesting class was for six pots of annuals in bloom, in pots not exceeding 9 inches in diameter. Mr. Osborne was the only exhibitor, and had Chrysanthemum tricolor, Asters, Cockscombs, Celosia, Stocks, and Mignonette. It would be an improvement to this class were it stipulated that the subjects should be grown in pots.

A great many prizes were offered for amateurs' productions, which brought a fairly good competition, but some of the awards in the plant classes were of a curious character. Plants, fruits, cut and flowers, vegetables were all creditably shown. There being a number of allotment gardens in Brackley and neighbourhood, it was not a matter for wonder, that in addition to various cottagers' classes, there were four prizes for the best collections of vegetables grown by cottagers resident in the parish of Brackley, and the same number of prizes for cottagers in each parish of Eversley, Newbottle-cum-Charlton, and Turweston. In addition Colonel Campbell, of Eversley Hall, offered a champion prize of £1, and a second champion prize of 10s. for the two best collections picked out of all in the foregoing classes. This champion collection came from D. Jones, Brackley, and was placed 1st also in the classes for Brackley parish. The collection included Vegetable Marrows, white Spanish Onions, Long Surrey Carrot, and hollow-crowned Parsnips, very handsome in both cases, and measuring nearly 3 feet in length; Peas and Snowflake Potatos. The 2d champion prize went to H. Ladyman, Eversley, who had Cauliflower, Parsnips, Intermediate Carrots, French Beans, Peas, and Snowflake Potatos. To this collection was also awarded the 1st prize in the Eversley parish competition. The best collection in Newbottle parish was from H. Spier, Charlton, and that in Turweston parish from R. Canning.

No person is allowed to compete as a cottager in any of the above classes who holds more than half an acre of ground, or is otherwise disqualified by occupation or employment as an under-gardener or labourer in noblemen's or gentlemen's gardens. (*From a Correspondent.*)

Pelargonium: *Aug.* 14.—This thriving Society held its fourth annual meeting on Wednesday last, at Chiswick, when the following report of the Executive Committee was adopted:—

"The Executive Committee in laying before the members the Society's fourth annual report, have the satisfaction of being able to refer favourably to the labours of the past year, and to the Society's present position. They congratulate the members on the increased popularity of the Society, as evidenced by the accession of new members, and by the great liberality of its old and well-tried supporters—this popularity, as they believe, being mainly attributable to the endeavours constantly made by the executive to stimulate the production of improved varieties in all sections of the family, thus making its admirers still more convinced of its usefulness, and at the same time educating and improving the popular taste.

"The exhibition held at South Kensington on June 18 was a decided success, since the specimen plants were well grown and flowered, and presented a fine display, and the progress made in all sections of the Pelargonium family was satisfactorily represented in the exhibits of new varieties. It is still to be regretted that many members withhold from exhibiting, and this fact will induce the Executive Committee to propose, for the approval of the members, such modifications of the prize schedule for 1879 as they hope may tend to remedy this defect.

"The Executive Committee take this opportunity to tender their thanks to Mr. Kinghorn, Mr. G. Smith, and Mr. Moore, who fulfilled the onerous duties of judges. They desire also to call attention to the fact that some of the prizes were withheld by the judges, on account of the inferior character of the exhibits, and wish to impress upon the members that this course is necessary to the full realisation of the objects for which the Society was established, namely, the attainment of the highest standard of perfection in the exhibits of new varieties, and the best state of cultivation in the older varieties. Any other course would be detrimental to the Society, which would, in that case, utterly fail to carry out its avowed objects.

"The Society have again to acknowledge the substantial and valuable assistance rendered to it by the Council and officers of the Royal Horticultural Society—first, by the cultivation of their collections at Chiswick; and, secondly, by the facilities afforded for holding their exhibitions. The Society's warmest thanks are also due to those exhibitors of other subjects who came forward so liberally, and by their magnificent ornamental groups added so much to the effect and beauty of the show.

"The Executive Committee hope to be able in the ensuing year to carry out their desire of publishing a list of all the new varieties in all the sections of the Pelargonium family, and of notifying those varieties which they consider superseded, and which consequently would be better withdrawn from cultivation.

"The annexed balance-sheet presents a satisfactory view of the Society's financial position, so far as it goes. Increased exertions are, however, needed on the part of its members, so that the number of prizes offered in some of the classes may be increased; as well as to provide means to acknowledge, in some slight degree, valuable aid now gratuitously rendered, and to maintain the Society in an independent position.

Balance-sheet for 1878.

Receipts.

To balance brought forward from 1877 account ..	£42	6 8
,, subscriptions for 1878	109	4 0
	£151	10 8

Payments.

By printing	£4	19 3
,, advertisements	2	14 10
,, postage and stationary	1	2 0
,, prizes awarded June 18, as per statement ..	78	7 6
,, balance in hand	64	7 1
	£151	10 8

Examined and found correct, { Charles Noble, Edmund B. Foster.
July 2, 1878.

The officers for the year ensuing were appointed, as follows:—Chairman, James McIntosh, Esq., Dunevan, Oatlands Park; Vice-Chairman, E. B. Foster, Esq., Clewer Manor, Windsor; Hon. Treasurer, Dr. Denny; Hon. Secretary, Mr. T. Moore, F.L.S. Committee—Messrs. Browse, Cannell, Catlin, Fraser, George, Henderson, Hibberd, Hogg, James, Kellock, Kinghorn, Laing, Llewelyn, Masters, Peach, Pearson, Postans, Sisley, G. Smith (Hornsey), G. Smith (Edmonton), Turner, H. J. Veitch, Webb, West, and Wilson. The schedule of prizes for next year underwent discussion and amendment; and it was unanimously agreed that the Society should award Certificates of Merit to deserving novelties exhibited at its shows.

A large party of the members partook of luncheon in the Great Vinery, after inspecting the new Pelargoniums grown at Chiswick this year for trial; and altogether a very pleasant afternoon was spent in discussing the merits of Pelargoniums, and devising means for carrying forward the improvements which have been made in this flower by such rapid stages during the past few years.

Clay Cross Horticultural: *Aug.* 13.—This was the twenty-first annual exhibition of the above Society, and, as usual, a very fine display was brought together. In the class for twenty plants there were five entries; the specimens in each case were exceptionally good, and collectively formed one of the finest groups of plants ever seen at Clay Cross. Mrs. Cole & Sons were 1st; Mr. Cypher, of Cheltenham, 2d; Mr. Tudgey, Henwick Grange, Worcester, 3d; Mr. Ward, gr. to T. Oakes, Esq., Riddings House, Alfreton, 4th; and Mr. House, of Peterborough, 5th. It was gratifying to find Mr. Ward, a new competitor in that class of plants, successful when pitted against such veterans; they will evidently have to look to their laurels. The competition for the Veitch Memorial Medal, with £5 added, for one dish of Peaches and one of Nectarines, was exceedingly close. Mr. H. A. Mann, gr. to Mrs. R. Hornsby, St. Vincent's, Grantham, came 1st, with fine fruit of good flavour. Mr. Tillery, of Welbeck, exhibited wonderfully fine fruit, but not equal to the winning fruit in other points. He also exhibited, not for competition, a plate of Nectarines—the Welbeck Seedling—which was specially Commended by the judges as the finest-flavoured Nectarine they had ever tasted. In the class for Melons, Mr. Mann was again 1st with a seedling, which proved to be greatly superior in flavour to the other specimens shown, and was recommended by the judges as a very desirable variety. In the class for not less than twenty plants arranged for effect, Mr. House came 1st with a very effective display. This class was an attractive and instructive part of the show, as the plants were of a size and kind that people with limited means may grow successfully. The specimens shown by cottagers and by those who do not keep professional gardeners were very good, and showed that the Society has promoted a knowledge of, and a taste for, horticultural pursuits in the neighbourhood. (*From a Correspondent.*)

Natural History.

Are Squirrels Carnivorous.—As I was standing some days ago in the garden I heard distressing cries of a bird. On looking round I saw at a little distance on a high tree a starling struggling in the paws of a squirrel; I ran to the spot, but so soon as I got forward Mr. Squirrel took fright, leaving his prize. I picked up the bird and examined it; the poor thing was bleeding about the head. *W. K.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, August 14, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Temperature of the Air: Lowest.	Temperature of the Air: Range.	Temperature of the Air: Mean for Day.	Temperature of the Air: Departure of Mean from Average of 60 years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity. Sat = 100	Wind: Average Direction.	Rain all.
Aug.	In.	In.	°	°	°	°	°	°			In.
8	29·03	+0.18	76.8	58.5	18.3	66.0	+ 4.0	53.0	64	S. SW.	0·00
9	29·88	+0.12	77.8	57.5	20.3	66.6	+ 4.5	52.9	62	SSE.	0·00
10	29·51	−0.25	66.8	60.1	6.7	62.8	+ 0.7	59.5	89	ENE. SW.	0·10
11	29·62	−0.14	74.5	50.1	18.1	62.0	+ 0.4	51.5	67	SSW. W.	0·00
12	29·41	−0.32	71.5	53.0	18.5	60.4	− 1.8	58.5	94	S S W	0·19
13	29·46	−0.31	67.6	51.4	13.2	59.5	− 2.7	51.9	77	SW. WSW.	0·10
14	29·30	−0.47	73.8	56.8	17.0	64.0	+ 2.0	51.3	71	SW. WSW.	0·24
Mean	29·59	−0.17	72.7	56.7	16.0	63.1	+ 1.0	51.5	75	variable	sum 0·83

Aug. 8.—A fine bright day. Sky generally clear. Warm.
— 9.—A very fine day. Clear till night, then overcast. Warm.
— 10.—Very dull, and wet till 5 P.M. Fine after.
— 11.—Fine day, cloudy, and dull at times. Overcast at night.
— 12.—Fine, but frequently dull and showery. Thunder heard occasionally between noon and 3 P.M.
— 13.—Dull, but fine at intervals. Showery in morning. Rain fell continuously after 9 P.M.
— 14.—A fine bright day, partially cloudy and windy Heavy rain in early morning, and a smart shower fell at 8 P.M.

LONDON: *Barometer.*—During the week ending Saturday, August 10, in the vicinity of London the reading of the barometer at the level of the sea increased from 29.76 inches at the beginning of the week to 29.90 inches by the morning of the 5th, decreased to 29.70 inches by the afternoon of the 6th, increased to 30.16 inches by the evening of the 8th, and decreased to 29.66 inches by the end of the week. The mean reading for the week at sea level was 29.87 inches, being 0.20 inch below than of the preceding week, and 0.06 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 77⅜° on the 9th, to 66¾° on the 10th; the mean value for the week was 75°. The lowest temperatures of the air observed by night varied from 55⅛° on the 4th, to 60° on the 10th; the mean value for the week was 58°. The mean daily range of temperature in the week was 17°, the greatest range in the day being 21° on the 5th, and the least, 6¾°, on the 20th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—4th, 61°.7, — 0°.5; 5th, 65°.5, + 3°.3; 6th, 65°.8, + 3°.7; 7th, 65°.5, + 3°.5; 8th, 66°, + 4°; 9th, 66°.6, + 4°.5; 10th, 62°.8, + 0°.7. The mean temperature of the air for the week was 64°.8, being 2°.7 above the average of observations extending over a period of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in full rays of sun, were 157⅗° on the 6th, 157¼° on the 8th, 146⅕° on the 7th, and 143° on the 5th; on the 10th the reading did not rise above 76°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 48⅓° on the 9th and 50¼° on the 8th. The mean value for the week was 53¼°.

Wind.—The direction of the wind was generally S.W., and its strength gentle.

The weather during the week (with the exception of the 4th and 10th) was fine, bright, and warm. Frequent violent *Thunderstorms* occurred during Sunday, the 4th, accompanied by very heavy rains. The total amount of rain measured during the day was no less than 1.34 inch.

Rain fell on four days during the week; the amount measured was 1.94 inch.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 81° at both Cambridge and Sunderland, 79¼° at Bristol, 77¼° at Blackheath, and 77° at Leicester, the highest temperature of the air at Liverpool was 71°, and at Bradford was 72½°; the mean value from all stations was 75¾°. The lowest temperatures of the air observed by night were 47° at Truro, 48½° at Bristol, 49° at Nottingham, and 49⅜° at Leicester: the lowest temperature of the air at Sunderland was 57°, and at Blackheath was 55½°; the mean from all stations was 52°. The range of temperature in the week was the greatest at Bristol, 30¾°, and the least at Liverpool and Hull, both 18°; the mean range of temperature from all stations was 23½°.

The mean of the seven high day temperatures was the highest at Cambridge, 78°, Bristol 76½°, and Blackheath, 75°, and the lowest at Bradford, 68¼°, and Liverpool, 69½°; the general mean from all stations was 72°. The mean of the seven low night temperatures was the lowest at Nottingham, 54°, Eccles 54½°, and Truro and Wolverhampton both 54⅔°, and the highest at Brighton, 58⅔°, and Plymouth and Sunderland both 58½°; the mean from all stations was 56½°. The mean daily range of temperature in the week was the least at Bradford, 11⅔°, and the greatest at Cambridge and Bristol, both 21°; the mean daily range of temperature from all stations was 15½°.

The mean temperature of the air for the week from all stations was 62½°, being 1⅔° higher than the value for the corresponding week in 1877. The highest were 66° at Cambridge, 64⅔ at Blackheath, and 64½° at Bristol, and the lowest 60½° at Wolverhampton and Bradford.

Rain fell on every day in the week at Nottingham, and on six days at most other places. The falls varied from 2.48 inches at Bradford, 2.42 inches at Sheffield, 1.94 at both Blackheath and Leeds, and 1.89 inches at Nottingham; at Cambridge and Plymouth 0.60 inch only was measured. The following are some of the heaviest daily falls during the week, viz.: —Blackheath, 4th, 1.34 inch; Sheffield, 6th, 0.95 inch; Bradford, 7th, 0.82 inch; Leicester, 6th, 0.78 inch; Bradford, 4th, 0.78 inch, and Nottingham, 4th, 0.64 inch. The average fall over the country was 1.45 inch, being 0.57 inch higher than that of the corresponding week in 1877.

The weather during the week was generally fine and warm, with frequent thunderstorms and heavy rains.

SCOTLAND: *Temperature.*—The highest temperatures of the air observed by day varied from 78° at Perth to 66° at Aberdeen; the mean value from all stations was 74°. The lowest temperatures of the air observed by night varied from 45½° at Edinburgh to 54⅔° at Aberdeen; the mean value from all stations was 48⅔°. The mean range of temperature from all stations was 25¼°.

The mean temperature of the air for the week from all stations was 62½°, being 3¼° higher than the value for the corresponding week in 1877. The highest was 63½° at Paisley and the lowest was 60¼° at Leith.

Rain.—The amount of rain measured at Perth was 2.09 inches, the amounts at other places (except Paisley, where no rain fell) varying from a quarter of of an inch to nine-tenths of an inch; the average fall over the country was 0.70 inch.

JAMES GLAISHER.

Obituary.

THE death of Mr. ROBERT SIM, which took place at his residence, Sidcup Hill, Foot's Cray, Kent, on the 3d inst., snaps almost the last link in a chain of old contemporaries and acquaintances, of whom the elder Don and Macnab, Murray of Glasgow, Douglas the collector, Low of Clapton, Munro of Chiswick, Cameron of Birmingham, and Mackay were a portion. The late Mr. Sim was born at Belhelvie, near Aberdeen, on August 26, 1791, and consequently had nearly completed his 87th year. He was the younger son of a family of two only. His parents, soon after his birth, removed into the city of Aberdeen; there he was, while very young, placed at "Boddy" Bowers' private grammar-school, in which Byron, about the same time, was a pupil. His school days over he obtained employment in the well-known Aberdeen nurseries of Messrs. Benjamin Reid & Son. He subsequently commenced a somewhat wandering life, always, however, utilising his wanderings botanically. After temporary garden employment at such fine places as Slains, Methven and Wemyss Castles, Donibristle, &c., he at last sought the shelter of Messrs. Dicksons & Co.'s Edinburgh nurseries. Meanwhile he had been "drawn" to serve in a militia regiment, but he determined that they should not compel him to join it—his brother had fallen at Ciudad Rodrigo—and upon telling Mr. Shankly, the managing partner of Dicksons & Co., his position, he offered him, as being somewhat more out of the way of the military authorities, the superintendence of converting the monks' burial-ground at Melrose Abbey into a kitchen garden for the proprietor, Elliot Lockhart, Esq. There he had almost daily association with Sir Walter Scott, who watched the turning over of the "old bones" with intense interest. One of his many reminiscences of Sir Walter was that in the course of the trenching an extraordinarily thick skull was discovered, and was taken home to Abbotsford by the poet himself. The war ending in 1814 left him free to "go South," bound, like many other young Scotch gardeners of that time, for Messrs. Cormack & Co.'s nurseries at New Cross. Mr. Sinclair found in him a willing pupil in his cultivation and study of our native and other forage grasses. While at New Cross he made many lasting friendships with men of congenial tastes.

West Kent soon after became his home, where at Kevington, at the head of the valley of the Cray, he found for several years a gentle and appreciative employer in the late Joseph Berens, Sen., Esq., whose garden, while under his charge, became well known for its fine collection of hardy plants and Ferns. In the year 1830 Mr. Sim established a nursery at Foot's Cray, which has since become famous for its inimitable trade collection of both British and foreign Ferns. Some thirty years ago he wrote a series of descriptive papers on the botany of West Kent in the *Gardeners' and Land Stewards' Journal*, and he also issued a set of specimens of the mosses of the West Kent district. Latterly his failing health has kept him from taking an active part in business matters, which have consequently devolved on his only son, by whom we believe the nursery business will still be carried on, and to whom indeed the success attained in Fern culture at Foot's Cray, particularly in raising the fine stock of novel varieties as they turned up which one met with there, was mainly due.

Enquiries.

He that questioneth much shall learn much.—BACON.

FUCHSIAS: *W. B.* wishes to know which of the following Fuchsias was sent out first:—Purity, Dr. Jephson, or Venus Victrix.

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

BEGONIAS: *C. Colebrook.* Yes; there are several double flowered varieties of tuberous-rooted Begonias in cultivation, and one of them was figured in our last issue. We should want to see your flower in better condition before saying if it was worth naming.

BOOKS: *E. W. Foster.* Harting's *Handbook of British Birds*, and Newman's edition of Montague's *British Birds*, both published by Van Voorst.

DOUBLE WHITE LILY: *J. Whittaker.* A very old inhabitant. No true flowers are produced, but in their place a succession of white bracts.

FERNS: *Surrey.* The fronds are probably kept too constantly wet, as there is no side air. Discontinue the syringing.

GRAPES: *H. A. B.* The Grapes are badly affected by mildew, brought on, no doubt, by the moist and sunless spring. The remedy would have been to apply sulphur dust, by means of a sulphurator, as soon as it first made its appearance. The splitting is attributable to the same cause.

GRAPES SHANKING: *E. H.* It must be either due to want of moisture at the roots or poverty of the soil. If you cannot feed the roots outside, you should endeavour to get them into an inside border.—*C. J.* Yours is clearly a case of shanking, shown by the discoloration of the stalks; hence the bad colour and acid contents of the berries. The fault no doubt lies at the roots, which have probably gone deep into uncongenial soil.

HONEY EXTRACTOR: *E.* The best honey extractors hitherto exhibited at the shows of the British Bee Keepers' Association were designed by an amateur, but no one has taken up their manufacture. Mr. John Walton, of Weston, near Leamington, makes and sells a very good one at 35*s.*

HYACINTHUS CANDICANS: *J. H. K.* A woodcut of this was given in our volume for 1872, p. 1099.

INSECTS: *W. Thompson.* The caterpillars gnawing the Grapes are those of a small moth, which we cannot determine till it assumes the perfect state, having turned to a chrysalis. It will be well to fumigate the Vine-house, if more of the caterpillars remain in that state.—*W.* Your Maidenhair Fern fronds are eaten by the larvæ of a small two-winged fly, like the common house-fly (Anthomyia species). Fumigation or washing the plants with Gishurt fluid will destroy them. *I. O. W.*

LAWNS: *An Old Reader.* You have got some of the creeping-stemmed grass into your lawn. The specimen sent appears to be one of the species of Agrostis. The best plan to improve your turf will be to rake it over very hard during the winter, and clear away as much of this long grass as possible, and then top-dress in spring, and try to keep the grass under by early and frequent mowing. If that fails, you had better break and re-sow the worst places.

LILIUM AURATUM: *Thos. Insley.* A pretty and well-marked variety, but not sufficiently distinct from many others that have come by chance amongst imported bulbs.

NAMES OF PLANTS: *C. Richardson.* 1, Thuja gigantea (Lobbi); 2, Cephalotaxus pedunculata; 3, Juniperus

communis cracovia ; 4, Juniperus communis hibernica ; 5, Retinospora obtusa ; 6, Sequoia sempervirens.—*James Cocker & Sons.* 1, Anticlea glauca ; 2, Campanula pusilla. *H. E. Dreyer.* Fraxinus heterophylla.

J. I. & Son. Aster macrophyllus. *T. W.* Pholidota imbricata ; very common. *Thos. Kennedy & Co.* Asclepias curassavica, a common tropical weed.—*J. Leman.* Erigeron canadense.—*F. W.* 1, Cyrtanthera magnifica ; 2, Chlorophytum orchidiastrum ; 3, Populus alba.—*C. H. D.* Poa alpina var. *vivipara.*—*Amateur.* Specimens very immature. 1, Selaginella uncinata (cæsia) ; 2, S. stenophylla ; 3, S. Martensii ; 4, S. Kraussiana (denticulata).—*W. C. A.* The Elder is Sambucus racemosus ; the Vine we do not recognise. *H. M. E.* Erica cinerea.—*E. K.* 1, Leycesteria formosa ; 2, Colutea arborescens.—*M. H.* 1, Alocasia macrorhiza variegata ; 2, Pteris cretica ; 3, Desfontainea spinosa ; 4, Jasminum officinale ; 5, probably Libonia floribunda, but not in flower ; 6, specimen insufficient.—*J. G. R.* Diplacus glutinosus.—*R. G.* Asclepias syriaca.—*G. Boulger.* Centaurea nigra, Atriplex patula, Torilis nodosa.

POTATOS : *A. A.* The tubers are affected by the scab, but we cannot explain the cause.

PHLOX : *K. J. W.* Your seedling Phlox arrived quite rotten.

CATALOGUES RECEIVED.—Messrs. Dicksons & Co. (Waterloo Place, Edinburgh), Descriptive Catalogue of Dutch Flower Roots, New Pansies, Violas, &c.—Messrs. Hooper Bros. & Thomas (Cherry Hill Nurseries, West Chester, Pa., U.S.A.), Trade List of American Plants, Seedlings, &c.—Stephen Brown (Weston-super-Mare), Autumn Catalogue of Bulbs and Flower Roots, also Illustrated Catalogue of Bulbs.

COMMUNICATIONS RECEIVED.—Tydia.—W. S.—J. H. S.—H.—J. D.—D. T. F.—H. G. R.—Operator.—W. H.—R. Milne.—R. M.—D. C. P.—H. M. K.—J. R. L.—J. S. B.—R. McL.—j. P.—J. R.—Count Savorgnan di Brazza.

MARRIAGE.—August 7, at St. Stephen's, South Kensington, the Rev. FRANK D'ALTRY HORNER, M.A., of Kirkby Malzeard, Ripon, son of the late F. R. Horner, M.D., F.R.S., Hull, to LOUISA MARY, daughter of the late R. S. Palmer, Esq., of Calcutta.

Markets.

COVENT GARDEN, August 15.

Heavy markets have been the rule during the week, and prices have a downward tendency. Large consignments of Grapes are still arriving from the Channel Islands, and fetching fair prices. Kent Filberts are rather lower. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	3 0	8 0
Apricots, per dozen	1 6	3 0	Oranges, per 100	6 0	12 0
Figs, per dozen	1 6	4 0	Peaches, per dozen	4 0	12 0
Filberts, per lb.	0 6	0 8	Pears, per doz.	2 0	3 0
Grapes, per lb.	0 6	4 0	Pine-apples, per lb.	2 0	8 0
Lemons, per 100	4 0	12 0	Plums, ½-sieve	3 0	6 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Herbs, per bunch	0 2	0 4
Aubergines, p. doz.	3 0	..	Horse Radish, p. bun.	4 0	..
Beans, French, lb.	0 4	0 6	Lettuces, Cos, Eng., per score	1 6	2 6
— runners, p. bush.	2 0	2 8	Mint, green bunch	0 4	0 6
— broad, per bush.	3 0	..	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Cabbages, per doz.	1 0	2 0	Peas, green, per qr.	1 6	2 0
Carrots, per bunch	0 4	0 6	Radishes, per bunch	0 1	0 3
Cauliflo'rs, per doz.	2 0	4 0	Salads, doz.	1 0	..
Celery, per bundle	1 6	2 0	— New Jersey, doz.	2 0	..
Chilis, per 100	5 0	..	Shallots, per lb.	0 6	..
Cucumbers, each	0 4	1 6	Spinach, per bushel	2 0	3 0
Custard Mar., doz.	3 0	..	Tomatos, per dozen	2 6	3 0
Endive, Batav. doz.	1 6	..	Turnips, new, p. bun.	0 6	..
Garlic, per lb.	0 0	6 ..	Vegt. Marrows, doz.	2 0	..

Potatos :—Old Potatos are now quite finished, but large supplies of new ones are coming to market from France and the Channel Islands, the prices continuing very low.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	4 0	12 0	Fuchsias, per dozen	4 0	18 0
Bouvardias, do	12 0	24 0	Hydrangea, per doz.	9 0	18 0
Calceolarias, p. doz.	4 0	12 0	Mignonette, per doz.	3 0	9 0
Campanulas, per doz.	6 0	24 0	Musk, per dozen	2 0	6 0
Coleus, per dozen	3 0	9 0	Myrtles, per doz.	6 0	12 0
Cyperus, do.	6 0	12 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, per dozen	6 0	24 0
— viridis, per doz.	18 0	24 0	— scarlets, zonal, per dozen	2 6	9 0
Enonymus, var., doz.	6 0	24 0	Petunias, per dozen	4 0	12 0
Ferns, in var., doz.	4 0	18 0	— Fairy, per doz.	9 0	12 0
Ficus elastica, each	2 6	15 0			
Foliage Plants, various, each	2 0	10 6			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Mignonette, 12 bun.	2 0	6 0
Asters, 12 bunches	3 0	9 0	Myosotis, 12 bun.	3 0	6 0
Bouvardias, per bun.	1 0	4 0	Pelargoniums, 12 spr.	0 9	1 6
Calceolaria, 12 bun.	6 0	12 0	— zonal, 12 sprays	0 4	1 0
Carnations, 12 bunch.	4 0	12 0	Phlox, 12 bunches	6 0	12 0
Cornflower, 12 bun.	2 0	6 0	Primula, double, per bunch	1 0	2 0
Dahlias, 12 bunch	3 0	9 0	Pyrethrum, 12 bun.	3 0	6 0
Delphinium, 12 bun.	6 0	12 0	Roses (indoor), doz.	1 6	12 0
Eschscholtzia, 12 bun	2 0	6 0	— (outdoor), 12 bun.	3 0	12 0
Eucharis, per doz.	4 0	12 0	Stephanotis, 12 sp.	3 0	9 0
Gardenias, 12 blms.	3 0	9 0	Stocks, 12 bunches	4 0	9 0
Gladioli, various, 12 spikes	1 0	4 0	Sweet Peas, 12 bun.	2 0	6 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Sultan, 12 bun.	6 0	9 0
Jasmine, 12 bunches	4 0	9 0	Tropæolum, 12 bun.	1 0	4 0

SEEDS.

LONDON : *Aug.* 14.—There is now a quiet, steady business doing in farm seeds, and late rates for all varieties are fully supported. The Continental demand for Trifolium has not yet come to an end ; in consequence of this and of the increasing English inquiry values for this article keep exceedingly firm. Moreover, the quantity coming forward is in narrow compass. As regards red Clover seed the position remains unchanged : the prospects on the Continent and also in the United States are satisfactory. It is now pretty certain that the stock of 1877 seed remaining in the hands of the American growers was largely over-estimated. There will, it is said, be an abundant crop of German white and Alsike, and both of good quality. The new winter Tares which have arrived at market consist of fine samples, and prices have opened at a moderate level. For English Rye of the 1878 growth there is an improved sale, at an advance of about 1*s.* per qr. New blue Peas offer sparingly on unaltered terms. In Canary seed there has been a further sharp upward movement, which is apparently justified by the lightness of stocks. Last year's quotations proved so unremunerative to the grower, that the production this season shows in all parts of the world a great falling off ; but it should be added that, with the diminished supply, there has been a decreased demand. For sowing Mustard seed there has been more request. New Rape seed is firmer. In feeding Linseed there is no quotable variation. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade was somewhat firmer than of late at Mark Lane on Monday, the pretensions of holders having increased in consequence, it would seem, of the unsettled state of the weather and the hardening tendency of some of the provincial markets. The new English Wheat on offer was quoted at from 50*s.* to 54*s.* per quarter, the higher quotation applying to some very fine Talavera, weighing from 63 lb. to 64 lb. to the bushel. The dealing in last year's growth, foreign included, was of an unimportant character, and an advance of 1*s.* asked was not clearly established. Barley was dull, with a decline of about 6*d.* per quarter in the feeding qualities. Malt was quiet on former terms. Oats were in better request at last week's reduction of 6*d.* to 1*s.* per quarter. Maize, too, commanded rather more attention, at 3*d.* to 6*d.* per quarter decline. Peas and Beans were steady, and rather higher prices were demanded for flour.—On Wednesday trade was firm in its tendency, but business was of an unimportant character, and any pretensions on the part of factors to higher values checked sales. New English Wheat was quoted at previous rates, and no change was reported in old produce, though as regards foreign produce there was certainly less disposition to sell at previous currencies. Barley was quiet at the late decline. Oats and Maize were in moderate request, and prices were pretty well supported. Beans and Peas were firm, and flour was held for full prices.—Average prices of corn for the week ending August 10:—Wheat, 44*s.* 1*d.* ; Barley, 35*s.* 3*d.* ; Oats, 24*s.* 1*d.* For the corresponding period last year :—Wheat, 65*s.* 8*d.* ; Barley, 34*s.* 7*d* ; Oats, 27*s.* 4*d.*

CATTLE.

At the Metropolitan Market on Monday there was a large supply of beasts, there being about 1500 from America. Choice English readily sold at onr top quotation, indeed it was in some cases exceeded. For sheep trade was not very brisk at the quotations. Lambs met with a heavy sale except the very choicest, of which there were not many. The calf trade was unaltered. Quotations :—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 10*d.* ; calves, 5*s.* 4*d.* to 6*s.* 4*d.* ; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 6*d* ; lambs, 6*s.* 8*d.* to 7*s.* 6*d.* — On Thursday there was a full average supply of beasts on offer. The trade was quiet at the above prices. Sheep, of which a short supply was on offer, met a slow sale at late rates. Lambs were dull, and calves unaltered.

HAY.

Tuesday's Whitechapel report states that good fodder was steady, but the trade continued very dull for inferior stuff. The supply was moderate. Prime old Clover, 120*s.* to 135*s.* ; inferior, 80*s.* to 90*s.* ; new Clover, 100*s.* to 105*s.* ; prime old meadow hay, 90*s.* to 100*s.* ; inferior, 50*s.* to 70*s.* ; new, 80*s.* to 85*s.* ; and straw, 43*s.* to 53*s.* per load.—With a fair supply of hay and straw offering, there was a brisk trade on Thursday, and prices for Clover were dearer. Prime old Clover, 120*s.* to 135*s.* ; inferior, 80*s.* to 90*s.* ; new, 100*s.* to 115*s.* ; prime old meadow hay, 90*s.* to 100*s.* ; new, 80*s.* to 85*s.* ; inferior, 50*s.* to 70*s.* ; and straw, 43*s.* to 53*s.* per load.—Cumberland Market quotations : — Superior old meadow hay, 95*s.* to 105*s.* ; inferior, 75*s.* to 88*s.* ; new, 70*s.* to 88*s.* ; superior old Clover, 130*s.* to 140*s.* ; inferior, 90*s.* to 110*s.* ; new, 88*s.* to 108*s.* ; and straw, 52*s.* to 58*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that trade was dull, the supply of Potatos only moderate, and disease more or less perceptible in the various classes. Regents, 90*s.* to 120*s.* ; Shaws, 80*s.* to 100*s.* ; kidneys, 100*s.* to 130*s.* ; Early Rose, 110*s.* to 130*s.* per ton.—The imports into London last week were confined to the receipt of 522 bags from Dunkirk, 624 Bremen, 26 Boulogne, and 20 tons 56 casks from Jersey.

Important to all Admirers of Clean, Healthy Foliage.



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes : —"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery ; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says :—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider ; Greenfly and minor pests instantly disappear."

Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes :—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2*s.*, 3*s.* 6*d.*, 6*s.*, and 10*s.* each.

It is most economically applied with a Vaporiser, price 2*s.*

Prepared by Alfred Lowe, Chemist, Chesterfield

Agents :—London, J. Veitch & Sons, Chelsea, S.W. ; Hurst & Son, 6, Leadenhall Street, E.C. ; Corry & Soper, Shad Thames, S.E. ; Dick Radclyffe & Co., 128, High Holborn, W.C. ; W. Cutbush & Son, Highgate Nurseries, N. ; Chester, J. Dickson & Sons ; Manchester, Dickson, Brown & Tait ; York, J. Backhouse & Son ; Hull, Martin & Son ; Sheffield, Fisher, Holmes & Co. ; Birmingham, Felton & Sons, R. H. Vertegans ; Colchester, New Plant & Bulb Co. ; Cheltenham, Heath & Son ; Peterborough, J. House ; Hereford, Cranston & Co., King's Acre ; Nottingham, J. R. Pearson ; Edinburgh, Downie & Laird, Ireland & Thomson, J. Methven & Son ; Aberdeen, W. Smith & Son ; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son ; Hawick, J. Forbes ; Belfast, J. Boyle, Balmoral : Dorking, H. Appleby ; Stoke-on-Trent, Bulgess, Kent & Son ; Wellington, C. Butler ; Mansfield, G. Rymer ; Saffron Walden, W. Chater ; Jedburgh, C. Irvine ; Lichfield, E. Holmes, Whittington Nurseries ; Thirsk, F. Hutchinson ; Kingston-on-Thames, T. Jackson & Son ; Beverley, G. Swailes ; Wavertree, J. Dewar & Co. ; Newcastle-on-Tyne, J. Thompson ; Worksop, T. Marris.

Agents wanted in every district.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C. ; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.

The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

Extract from *Building News.*

"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire ; and 19, Parliament Street, London, W.C.

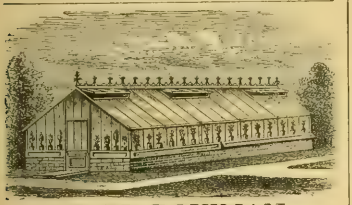
IRON ROOFS for SALE, Cheap.—Several Iron-framed Roofs, from 20 feet to 40 feet span (not curved, no skilled labour required in fixing), covered with galvanised corrugated Iron. Apply
HEMMING AND CO., 47, Moorgate Street, London, E.C.

Greenhouses.

H. FREEMAN AND SONS, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 42 feet long, 13 feet wide, £50; 21 feet by 13 feet, £28; 12½ feet by 10 feet, £15. Estimates given in wood or iron.

Glasshouses.

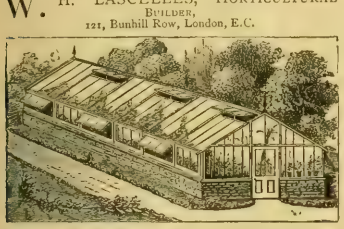
HEREMAN AND MORTON give prices for all kinds of HORTICULTURAL BUILDINGS in WOOD On receipt of particulars. Also for Heating.
A Pamphlet 3d. Price Lists free.
2, Gloucester Street, Regent's Park, London, N.W.



JOHN BOWMAN,
Timber and Mahogany Importer and Merchant,
HORTICULTURAL BUILDER,
WEST END STEAM JOINERY,
NEWCASTLE-ON-TYNE.

GREENHOUSES complete, from £10 to £1000.
PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } 35s.
PORTABLE BOX with TWO LIGHTS, as above, each Light 6 feet by 4 feet .. .. } 65s.
Estimates given for Conservatories and Greenhouses of every kind.
Well-seasoned Materials and First-class Workmanship guaranteed.

W. H. LASCELLES, HORTICULTURAL BUILDER,
121, Bunhill Row, London, E.C.



Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS.	Each.
	s. d.
Portable Box with One Light, 6 feet by 4 feet, glazed good 15-oz. sheet glass, painted four coats, and packed ready for use	35 0
Portable Box with Two Lights, as above, each light 6 feet by 4 feet	65 0
LIGHTS ONLY.	
3 feet by 4 feet light, not painted nor glazed	3 6
Ditto glazed, good 15-oz. sheet glass, and painted 4 coats	10 0
6 feet by 4 feet, not painted nor glazed	6 0
Ditto glazed and painted 4 coats	16 6

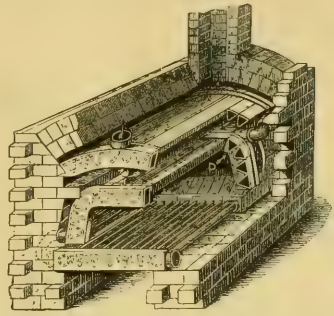
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A large variety of sizes, 15-oz., 12*s.* 6*d.*; 21-oz., 16*s.* 6*d.* per 100 feet. Large sizes, in Cases, for Cutting up—15-oz. 4ths, 30*s.*; 3ds, 40*s.* per 300 feet:—21-oz. 4ths, 30*s.*; 3ds, 40*s.* per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

BELGIAN GLASS for GREENHOUSES, &c.,
Can be obtained in all sizes and qualities, of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. & 21-oz.

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RAFFIA for TYING,
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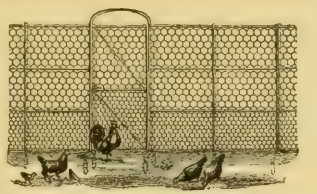
RUSSIA MATS.—A large stock of Archangel and Petersburg, for Covering and Packing (price on application for Archangel)—Petersburg, 60*s.* to 100*s.* per 100; superior close-wove, 40*s.*, 50*s.*, and 55*s.* per 100; Packing Mats at 20*s.*, 30*s.*, and 35*s.* per 100; and all other descriptions of Mats at equally low rates, at
J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

HOT-WATER APPARATUS,
FOR THE APPROACHING WINTER.



Defective Boilers replaced, New Hot-water Apparatus executed, existing Apparatus Repaired, in any part of Great Britain, with the utmost promptitude, by experienced men.
Boilers of all sizes kept in Stock.
MESSENGER AND CO.'S
Patent Check-end Tubular Saddle Boiler
Combines every real modern improvement. We *guarantee* its efficiency. No night stoking required.
ILLUSTRATED PRICE LIST FREE.
MESSENGER & CO.,
Hot-water Engineers, Horticultural Builders,
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POULTRY FENCES.

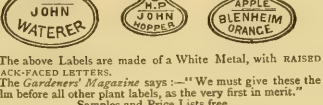


This fence is a much stronger description of fencing than the lattice panels with loose standards, and is more portable, being made in lengths 6 feet long with double pronged feet. A run or pen can be formed of any length or shape without extra cost; it is easily fixed or removed; the gate can be placed in any part of the fence.

PRICES:—
6 feet high, including all necessary Bolts and Nuts .. .. 5*s.* per yard.
Doorway complete, 2 feet wide, including Standards and Arched Stay . .. .. 13*s.* 6*d.* each.
Angle-iron Pillars for Corners, with Cast Ornaments .. .. 3*s.* each.
Carriage paid on orders of 40*s.* value. Orders executed on receipt.
NEW POULTRY LIST, with Illustrations, on application.

BOULTON AND PAUL, NORWICH.

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

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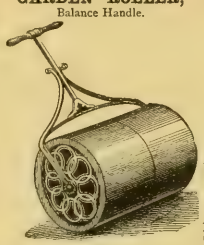
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The engine is bolted to the top of the barrel, and fitted with suction pipe, which is useful either for drawing water direct from a pond or out of the barrel.

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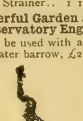
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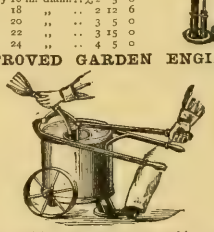
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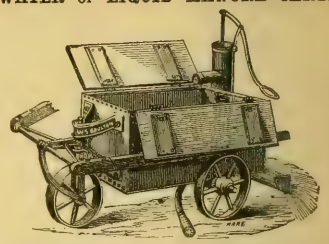
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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With the Number for Sept. 7 will be presented a Coloured Plate of "HYACINTHS."

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to
Mr. THOMSON, Crystal Palace.

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J. C. HENDY, Secretary.

ISLE of THANET FLORAL and HORTICULTURAL ASSOCIATION, and ST. PETER'S COTTAGERS' GARDENING SOCIETY.
The TWENTY-THIRD ANNUAL EXHIBITION will be held in Bromstone Park, St Peter's, Ramsgate (by kind permission of G. E. Hannam, Esq.), on WEDNESDAY, August 28, 1878.

NOTICE.—The PRIZES we offered for the best SINGLE BUNCH of MRS. PEARSON and GOLDEN QUEEN GRAPES, will be awarded by the Committee of the Royal Horticultural Society at their meeting of October 15, at the South Kensington Gardens. The prizes are £5, £2, and £1, for each variety.
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On view morning of Sale, and Catalogues had.

Cool Odontoglossums.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company of Colchester to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, August 29, at half-past 12 o'Clock precisely, the second and last portion of a splendid consignment of ODONTOGLOSSUMS and other ORCHIDS from the highest mountain ranges of Columbia, comprising fine healthy pieces of O. coronarium, Pescatorei, Phalænopsis, triumphans, læve, hastilabium, and many other fine things. An importation of ONCIDIUM VARICOSUM ROGERSI from Brazil, ORCHIDS and PALMS from Belgium, BULBS from Algiers.

On view morning of Sale, and Catalogues had.

Kensal Green.

Ten minutes' walk from Station. By order of the Executors

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Kensal House, on THURSDAY, August 29, at 1 o'Clock precisely, the whole of the STOVE and GREENHOUSE PLANTS, including Specimen Araucaria excelsa, 12 feet; double Camellias, 7 to 8 feet; Raised Azalea indica, &c.; four GREENHOUSES and FITTINGS, and other EFFECTS.

May be viewed the day prior. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Middlesex and Bucks.

MR. E. P. NEWMAN will SELL by AUCTION, during AUGUST and SEPTEMBER, 300 ACRES of POTATOS, growing on farms in the parishes of Hayes, Hillingdon, Harmondsworth, West Drayton, Horton, and the adjoining neighbourhood, in Lots. Most of the Potatos are Regents of first-class quality and from new Scotch seed. Credit will be given.

Catalogues of the various Sales can be obtained free by post on application to the Auctioneer, 41, High Street, Uxbridge, Middlesex.

Manchester.

SALE of a Collection of VALUABLE PLANTS, for the most part of half-specimen size, which have been removed from Crow Nest, Saltaire, Yorkshire, consisting of Fine and Rare Miscellaneous PLANTS for STOVE, GREENHOUSE, and CONSERVATORY, and a good Assortment of BRITISH and EXOTIC FERNS.

ARTINGSTALL AND HIND respectfully give notice that they are instructed to SELL by AUCTION, on TUESDAY, August 27, beginning at 12 o'Clock prompt, at their Sale Premises, 45, Princess Street, Manchester, a large quantity of desirable PLANTS.

Catalogues are being prepared, and will be issued several days prior to Sale.

For further particulars apply to the Auctioneers, Manchester.

TO BE DISPOSED OF, as a Going Concern, a very lucrative FLORIST'S, SEEDSMAN'S, and FRUITERER'S BUSINESS, with Jobbing attached. Premises comprise large Shop, well fitted, good Dwelling-house, Greenhouses, Lights, Stabling, Horse, two Vans, and general Stock. £400 or valuation. An opportunity seldom met with.—A. A., *Gardeners' Chronicle* Office, W.C.

London—West End.—(4458.)

FOR IMMEDIATE DISPOSAL, a thoroughly genuine DECORATIVE FLORIST'S BUSINESS, in a leading thoroughfare. Incoming about £850. Rent £210 per annum.

Full particulars of PROTHEROE AND MORRIS, 98, Gracechurch Street, E.C.

West of England.—(4446.)

Situate on the confines of an important and most thriving town.

FOR DISPOSAL, an extensive and well-known NURSERY, SEED, and FLORIST'S BUSINESS, which has been in existence for upwards of a century and a half. The Grounds cover an area of about 30 acres, and comprise a convenient detached Dwelling-house, Seed-shop, several extensive ranges of Glass, containing altogether about 25,000 feet super, fitted with all the modern appliances, and offering unusual facilities for turning out enormous quantities of Stock; commodious Outbuildings, and every requisite for doing a very large trade. Well selected and beautifully grown stock. Extremely productive soil. A certain portion of the Stock would have to be taken by valuation, but the Vendor would be prepared to Sell a considerable quantity by Auction. No charge for Goodwill. Satisfactory reasons can be given for relinquishing the business.

Rent and further particulars may be had from Messrs. PROTHEROE AND MORRIS, Horticultural Auctioneers and Agents, 98, Gracechurch Street, London, E.C.

FOR SALE, cheap, a Small FLORIST'S BUSINESS, all Glass, heated with hot water. Whole or part of Stock. For particulars apply on the premises.

W. FISHER, Myrtle Cottage, Green Lane, South Street, Greenwich, S.E.

TO BE SOLD, by Private Contract, on advantageous terms, an old-established BUSINESS of a NURSERYMAN and FLORIST, with the Greenhouses, Hothouses, and General Nursery and Florist Stock, as now carried on, in a first-rate situation in a University Town.—For particulars and to view, apply to

A. B., Messrs. Hurst & Co., 6, Leadenhall Street, London, E.C.

TO LET, from Michaelmas next, a MARKET GARDEN (Walled) about 2½ acres, with a Gardeners' Residence, Stable, Piggeries, &c. At Great Lodge Farm, within 2 miles of Tunbridge Wells.—For particulars and orders to view, apply to

The TOWN CLERK, Tunbridge Wells.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained gratis at 98, Gracechurch Street, E.C.

Corn, Flour, and Seed Trade.

WANTED, about 20 or 30 miles from London, PREMISES adapted to the above business. STABLING and STORAGE ROOM necessary. A moderate Premium would be given for an established business that will bear the strictest investigation. Send full particulars to Mr. L., 260, Cornwall Road, Kensington Park, W.

TRIPOLI ONION SEED. Giant Rocca, 6*d.* per ounce; Large Late Flat Red, 6*d.* per ounce; Large Late Flat Red, extra, 1*s.* per ounce; Large Late Flat White, 6*d.* per ounce; Large Late Flat White, extra, 1*s.* per ounce; New Queen, 1*s.* per ounce.

Illustrated CATALOGUE on application.

BIDDLES AND CO., The Penny Packet Seed Company, Loughborough.

FOR SALE, the large and valuable Collection of AUSTRALIAN SEEDS now exhibiting by Mr. C. F. CRESWELL, of Melbourne, at the PARIS EXHIBITION, comprising Eucalyptus globulus, Castanospermum australis, Ficus macrophylla, and a great quantity of other Seeds, some hitherto unknown in Europe, besides many Vegetable and Grass Seeds.—For particulars apply to

C. J. BLUCK, SMITH AND COMPANY, Cox's Quay, Lower Thames Street, London, E.C.

SUTTON'S CHOICE STRAINS OF FLORIST'S FLOWERS, POST-FREE.

CALCEOLARIA, Sutton's Perfection, 5*s.* and 2*s.* 6*d.* per packet.

PRIMULA, Sutton's Prize, 5*s.* and 2*s.* 6*d.* per packet.

CINERARIA, Sutton's Superb, 5*s.* and 2*s.* 6*d.* per packet.

CYCLAMEN, Sutton's Prize, 5*s.* and 2*s.* 6*d.* per packet.

The Queen's Seedsmen, Reading.

To the Trade.

NEW ENGLISH SOWING RAPE SEED. HAND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.

Fine Samples WHITE MUSTARD. Prices (with samples) may be had on application.

Seed Growing Establishment, Wisbech.

J. LINDEN'S (Ghent, Belgium) new CATALOGUE for Azaleas, Camellias, Rhododendrons, new and recently introduced Plants, Palms, ornamental Plants, &c., is now ready.

Sent post-free on application.

Hyacinths, Tulips, and Other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Bulbs of all Kinds.

THE GENERAL AUTUMN CATALOGUE of the New Plant and Bulb Company, Lion Walk, Colchester, containing some splendid new Lilies, Tulips, Freesias, Iris, Crocus, &c, will be ready in a few days.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.

The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

MINIER, NASH, AND CO.'S CATALOGUE of HYACINTHS and other FLOWER ROOTS is now ready, and may be had on application.

Friends who have not received a copy will please write.

Liberal Discount for Large Orders.

60, Strand, London, W.C.

Now Ready.

CARTER'S ILLUSTRATED CATALOGUE of HYACINTHS, TULIPS, and other AUTUMN FLOWER ROOTS, ROSES, FRUIT TREES, &c. Gratis to purchasers. Price 6*d.* post-free to non-purchasers.

The Queen's Seedsmen, High Holborn, London, W.C.

To the Trade.

JAMES CARTER, DUNNETT AND BEALE'S AUTUMN CATALOGUE of DUTCH and other FLOWER ROOTS is now being posted to their customers.

C., D. & B. will be glad to be informed of any exception to this notice, and will at once forward a duplicate copy on learning the original has miscarried.

High Holborn, London, W.C.

Dutch Bulbs at Growers' Prices.

CARTERS' immense consignments are now arriving in splendid condition. Purchasers should see Messrs. Carter's ILLUSTRATED CATALOGUE, which contains a selection of only the very best varieties, at exceedingly low prices. This Catalogue is gratis to purchasers, or sent on receipt of 6*d.* postage stamps to non-purchasers.

The Queen's Seedsmen, High Holborn, London, W.C.

WATKINS AND SIMPSON beg to state that their wholesale CATALOGUE of Dutch, English and other Flowering Bulbs is now ready, and has been posted to all their customers; any one not having received same, will oblige by letting their know. They also wish to draw special attention to their Snowdrops, Narcisi, Lily of the Valley, clumps and single crowns; American Tuberoses; Lilies, Scarlet, Martagon, and Orange &c.

Special quotations for quantities on application.

1, Savoy Hill, Strand, W.C.



DUTCH FLOWER ROOTS.—Now ready, our ILLUSTRATED CATALOGUE of Dutch Flower Roots, Roses, Fruit Trees, &c., containing forty-eight pages imperial size of beautifully illustrated letterpress, with new and original articles on Flower Roots and their Uses, the cultivation of Hyacinths, Tulips, &c., and a superbly finished coloured plate. This will be found the most useful, the cheapest and best Bulb Catalogue ever sent out, and should be read by all purchasers of flower roots before ordering. Price 6*d.* post free; gratis to customers and intending purchasers.

DANIELS BROTHERS, The Royal Norfolk Seed Establishment, Norwich.

ORCHIDS.—Thousands of choice Orchids, from Assam, Brazil, the West Indies, and from the cool mountain ranges of Columbia, carefully selected by the Travellers of the New Plant and Bulb Company, Lion Walk, Colchester, have arrived in fine masses and in excellent condition. Orchid Growers are respectfully requested to make an early application, so as to secure the strongest pieces.

To Amateur Strawberry Growers.

RUNNERS, strong and well rooted, are now ready, from H. de Thury, President, Sir J. Paxton, and British Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants, post-free, 1*s.*

Manual on Strawberry Culture, 6*d.*

W. LOVELL, Strawberry Grower, Weaverthorpe, York.

B. MALLER begs to announce that his Stock of ERICAS, SOLANUMS, BOUVARDIAS, CAMELLIAS, AZALEAS, ADIANTUM CUNEATUM, GREVILLEAS, FICUS ELASTICA, PALMS, VINES, &c., is very extensive, and in excellent condition this season. The usual Trade Sale will be held in September. An inspection is respectfully solicited.

Burnt Ash Nursery, Lee, S.E.

FOR FORCING.

SPIRÆA JAPONICA, 20*s.* per 100.

" PALMATA, 25*s.* per 100.

By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10*s.* 6*d.*, 15*s.*, and 20*s.* per 100. Extra large clumps at moderate prices.

ROSE QUEEN OF BEDDERS,

Booked for autumn, 12*s.* per dozen, 75*s.* per 100.

CHARLES NOBLE, Bagshot.

Dracænas and Tree Carnations.

HENRY JAMES has first-class Plants of the above to offer at low prices for cash with order. Dracænas, finely coloured, in the well-known decorative varieties, Cooperi, terminalis, Guilfoylei, Hibbertii, ferrea and braziliensis, at 24*s* and 30*s.* per dozen. Tree Carnations in the best leading kinds, including large quantities of La Belle, the best white, at 12*s.* and 15*s.* per dozen.

Castle Nursery, Lower Norwood, S.E.

STRAWBERRY PLANTS.—Well rooted strong runners of following varieties, purchaser's selection, 3*s.* 6*d.* per 100, our selection, 2*s.* 6*d.* per 100, 20*s.* per 1000, true to name:—Aromatic, Amateur, British Queen, Bicton Pine, Black Prince, Comucopia, Crimson Queen, Crimson Queen, Comte de Paris, Dr. Hogg, Duke of Edinburgh, Elton Pine, Eleanor, Exquisite, Early Prolific, Enchantress, Eliza, Garibaldi, John Powell, Grosse Sucrée, Oscar, Marguerite, Lucas, Prince Arthur, Prince of Wales, President, Premier, Royalty, Sir C. Napier, Sir J. Paxton, Sabreur, Scarlet Fine, Souvenir de Kieff, Stirling Castle, Traveller, The Countess, Vicomtesse de Thury, Unser Fritz, Wonderful, W. J. Nicholson. Not less than twenty-five of a sort supplied at 100 rate; 100 plants in twenty sorts, 5*s.*; 100 in fifty sorts, 7*s.*

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To the Trade.

C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices:—

100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.

100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.

100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.

100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.

100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.

100 BEGONIAS, bulbous, new short brilliant sorts, at £2.

1000 SPIRÆA JAPONICA, colossal clumps, at £6.

A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

J. APERS, NURSERYMAN, Loochristy, near Ghent, Belgium, offers the following splendid stock of healthy, well-shaped, and richly-budded Plants:—

CAMELLIAS, at £5, £6, £7, and £8 per 100.

CAMELLIAS, very large, at 2*s.*, 3*s.*, and 4*s.* each.

AZALEAS, Indian, £5, £6, £7, and £8 per 100.

AZALEAS, large Indian, at 2*s.*, 2*s.* 6*d.*, 3*s.*, and 4*s.* each.

AZALEA MOLLIS, from seed, at £5, £6, £7, and £8 per 100

AZALEAS, hardy Ghent, at £4, £5, £6, £7, and £8 per 100.

AZALEAS, large, 2*s.*, 3*s.*, and 4*s.* each.

RHODODENDRONS, at £6, £7, £8, and £12 per 100.

Larger, 3*s.*, 4*s.*, 5*s.*, and 6*s.* each

The DESCRIPTIVE CATALOGUE may be had on application to

Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

LAMIUM MACULATUM AUREUM, 33*s.* per 100.

In the *Revue de l'Horticulture Belge et Etrangère* of April 1, 1877, Mr. Edward Pynaert gives a coloured plate of this beautiful perennial, and says:—"The Lamium maculatum aureum has about the same colour, the same regular growth, as the Pyrethrum parthenifolium aureum, which is generally used for carpet bedding, but is to be preferred to Pyrethrum, because of its being perfectly hardy and keeping its beautiful foliage in winter like in summer."

HARDY PERENNIALS suitable for WINTER CARPET-BEDDING.

Antennaria tomentosa, 20*s.* per 100.	Sedum, in many sorts, 25*s.* per 100.
Artemisia Stelleriana, 17*s.* per 100.	Sempervivum, in many sorts, 25*s.* per 100.
Cerastium Biebersteinii, 9*s.* per 100.	Stachys lanata, 10*s.* per 100.
Dactylis glomerata fol. arg. var., 25*s.* per 100.	Thymus citriodorus fol. aureo-marg., 9*s.* per 100.
Festuca glauca, 25*s.* per 100.	Thymus lanuginosus, 9*s.* per 100.
Lamium maculatum aureum, 33*s.* per 100.	Thymus montanus albus, 9*s.* per 100.
Mentha piperita fol. arg. var., 17*s.* per 100.	Trifolium repens nigrescens, 17*s.* per 100.
Saxifraga, in many sorts, 25*s.* per 100.	

CYCLAMEN PERSICUM FL. ROSEO, strong roots full of flower-buds, all grown in pots, 25*s.* to 67*s.* per 100.

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK, Totteham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

PAUL AND SON,

THE OLD NURSERIES, CHESHUNT, N.,

Have now ready for delivery their Importation of

DUTCH and FRENCH BULBS,

ROMAN HYACINTHS for Forcing.

Choice picked Roots of NAMED HYACINTHS, with TULIPS, NARCISSUS, &c., for Pot Culture.

MIXED HYACINTHS, TULIPS, CROCUS, BORDER NARCISSUS, LILIES,

And all other Bulbs for Outdoor Spring Gardening, have been all received in fine condition.

CAREFULLY PREPARED, REASONABLY PRICED,

CATALOGUE of BULBS, with AZALEAS, CAMELLIAS,

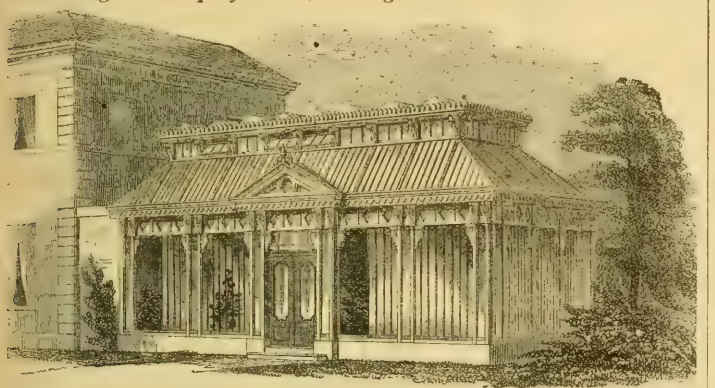
AND

Select Descriptive LIST of STRAWBERRIES, post-free, on application.

CONSERVATORIES

Built to suit any style of Mansion. Architects' Plans carried out.

Estimates given to Specifications, or Rough Sketches with sizes marked on.



Winter Gardens and Glass Boundaries arranged.

PRICE LISTS of Cheap and Portable ORCHARD HOUSES, VINERIES, GREENHOUSES, PEACH WALL COVERS, &c., on application.

A PAMPHLET, with Views, Testimonials, &c., 3d., post-free.

HEREMAN & MORTON,

2, GLOUCESTER STREET, REGENT'S PARK, LONDON, N.W.

THE THAMES BANK IRON COMPANY

OLD BARGE WHARF,



UPPER GROUND STREET,

LONDON, S.E.,



Have the largest and most complete stock in the Trade; upwards of £20,000 worth to choose from.

HOT-WATER BOILERS, PIPES, and CONNECTIONS,

And all CASTINGS for HORTICULTURAL PURPOSES.

Their New Illustrated Catalogue, 8th Edition, now ready

(price Sixpence).

Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

SEED POTATOS, for Export and the Trade, 600 varieties, including Magnum Bonum the most productive and disease proof kinds, Snowflake, Extra Early Vermont, Ashleaf. Send for Treatise upon Cultivation and Prevention of Disease in Potatos, Gratis.

FREEMAN, Seed Grower, Norwich.

Notice to the Trade.

HURST AND SON can supply fine samples of ROMAN HYACINTHS and SNOWDROPS. Prices upon application.

They beg to intimate that their CATALOGUES of Flower Roots have been posted, and if any persons have not received same, will they kindly inform them, and one shall be forwarded immediately. Their first consignment of roots is at hand, orders can at once be executed.

6, Leadenhall Street, E.C.

Camellias, Indian Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate that his stock of budded plants of Camellias and Indian Azaleas and of Decorative Palms is unusually fine this season, and will be ready for delivery, at very moderate charges, on and after September 1. Also the following desirable plants are in prime condition:—Ghent Azaleas, Azalea mollis, Spiræa japonica, and Lilies of the Valley, Greenhouse Ferns for furnishing, and general Nursery Stock as well.

The new CATALOGUE will be issued shortly.

A. VAN GEERT, The Continental Nurseries, Ghent, Belgium.

RICHARD SMITH WORCESTER

STRAWBERRIES.—Strong plants of the leading sorts can be supplied from the open ground after July 15, at 5s. per 100. See Descriptive FRUIT LIST, to be had on application.

RICHARD SMITH AND CO., Nurserymen, Worcester.

To Market Gardeners.

(To be sent out in the Autumn.)

MARÉCHAL NIEL, grafted on Brier roots, 4000 fine plants, fit for pot culture, at £2 16s. per 100, £26 per 1000.

VIOLA, Belle de Chatenay, fine, in good transplanted young plants, at £1 5s. per 100, and £10 per 1000. Other varieties of Viola, such as Marie Louise, Parma, Czar, do. white flower, for disposal in large quantities.

As many orders last season could not be supplied, as the Stocks run out, orders must be sent immediately, to

L. PAILLET, Nurseryman, Chatenay by Sceaux near Paris, France; or to his Agents, Messrs. SILBERRAD AND SONS, 15, Harp Lane, Great Tower Street, London, E.C., where CATALOGUES and Trade Lists may be had on application.

PRIMULAS, CINERARIAS, CHOICE GERANIUMS, &c.—Striped Vesuvius and Salmon Vesuvius, 1s. 6d. each; White Vesuvius and Dr. John Denny, 2s. each, post-free; twelve fine distinct Geraniums for pot culture, winter blooming, &c., 4s. and 6s., post-free. Primulas and Cinerarias, 2s. per dozen, post-free; Roman Hyacinths, fine bulbs, 2s. 6d. per dozen, 17s. per 100.

STOVE and GREENHOUSE PLANTS in great variety.

CATALOGUES on application. Special cheap offers to Gentlemen furnishing new Conservatories, Greenhouses, &c.; also to those planting Herbaceous Borders of Herbaceous and Alpine Plants, Florist's flowers, &c.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

FERNS, PALMS, DRACÆNAS, &c. Having a large surplus stock of the following, we can offer them unusually cheap to make room.

DRACÆNAS. Congesta, terminalis, Cooperi, stricta, and Guilfoylei, in 3 and 6-inch pots. Also a few fine specimens of amabilis in 10-inch pots.

PALMS.—Latania borbonica, 15 inches, in 6-inch pots.

FERNS.—Adiantum cuneatum and gracillimum, Lomaria gibba, extra strong; Pteris tremula, cretica, cretica albo-lineata; Cyrtomium falcatum in 3 and 6-inch pots. Also specimens of cuneatum and gracillimum.

Price per dozen, 100, or 1000 on application. Samples of Six varieties of mixed FERNS, in 3-inch pots, 3s. 6d. per dozen.

PELARGONIUMS in eight leading Market varieties, well-established in 3-inch pots, 6s. per dozen. Price per 100 or 1000 on application.

POUNCE AND SONS, F.R.H.S., Nurserymen, Hendon, Middlesex, N.W.

RICHARD SMITH WORCESTER

ROSES, choice Tea-Scented and Noisette, in great variety.

ROSES, Hybrid Perpetual, strong, for forcing.

ROSES, New, for 1878.

CLEMATIS JACKMANNI and many other sorts for bedding and climbing.

Bedding Plants, strong and healthy; Fuchsias, Pelargoniums Greenhouse and Stove Plants, Ferns, &c.

Descriptive priced LISTS free on application.

RICHARD SMITH AND CO., Nurserymen, Worcester.

Iron Hurdles for Fencing.

To GENTLEMAN FARMERS and OTHERS.

TO BE SOLD, Cheap, 150, 6 feet by 4½ feet, strong Five-rail Iron Hurdles, in good condition, also four IRON GATES. The above can be seen and price had from C. E. WATERS, Nurseryman, Derby Villas Nursery, Forest Hill, S.E.

WHOLESALE RUSSIA MAT MERCHANTS.

NEW ARCHANGEL MATS.

ST. PETERSBURG MATS.

RAFFIA FIBRE, NETTING, CANVAS, &c.

MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS,

HERTS.

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

THE

NORTH of ENGLAND ROSE NURSERIES,

CATTERICK BRIDGE and SCORTON,

YORKSHIRE.

MESSRS. ROBERT MACK & SON

Respectfully inform the Trade and the Public that having purchased the Freehold, with the entire Stock and Appurtenances of these extensive Nurseries, and the Goodwill of the Business from the Executors of the late Mr. JOHN HARRISON, they intend to carry on and to extend the business in all its branches.

The Cultivation of the Rose in all approved varieties, for which the soil of the Nurseries is so admirably adapted, will be, as heretofore, a leading feature of the Business; but it is their intention to maintain such a Stock of Forest and Fruit Trees, Ornamental Shrubs, choice Greenhouse, Conservatory, and Stove Plants, and Florists' Flowers, as will enable them to execute with promptness and with satisfaction, both to the Trade and to the Public, all orders in these departments.

They retain the services of Mr. CHRISTOPHER SCOTT as General Manager, and are confident that his skill as a Horticulturist, and the personal attention of the resident Partner, Mr. R. MACK, Jun., will enable them to maintain the high character for excellence that attached to the products of these Nurseries under the management of the late well-known proprietor, and largely to extend the connection formed by him.

Mr. GEORGE STAIRMAND will continue in the Management of the Scorton Nursery.

CATALOGUES of the NEW ROSES of 1878, and of the General Stock, will be sent on application to

ROBERT MACK AND SON, Catterick Bridge, Yorkshire, to whom all orders and other communications are to be addressed.—July, 1878.

COOL ODONTOGLOSSUMS.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company of Colchester to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 29, at half-past 12 o'Clock precisely, the second and last portion of a splendid Consignment of ODONTOGLOSSUMS and other ORCHIDS, from the highest mountain ranges of Colombia, comprising fine healthy pieces of O. coronarium, Pescatorei, Phalænopsis triumphans, læve, hastilabium, and many other fine things—an importation of ONCIDIUM VARICOSUM ROGERSI from Brazil, ORCHIDS and PALMS from Belgium, and BULBS from Angiers.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

DUTCH FLOWER ROOTS.



B. S. WILLIAMS

BEGS TO ANNOUNCE THAT HE HAS RECEIVED HIS ANNUAL IMPORTATION OF

HYACINTHS, TULIPS, CROCUS, NARCISSUS,

And other BULBOUS ROOTS, in splendid condition.

CATALOGUES, containing a Select List of the above, are now ready; Also of NEW PLANTS, FRUIT TREES, ROSES, &c.

GRATIS AND POST-FREE TO ALL APPLICANTS.

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

NEW SEEDLING PINE-APPLE.

"LADY BEATRICE LAMBTON."

IRELAND & THOMSON

Have much pleasure in announcing that they will now send out this splendid Seedling Pine-apple, raised at Lambton Castle Gardens; and in recommending this valuable Fruit they cannot give it a higher recommendation than the opinion of several of our best Fruit Growers, who have seen and tasted it.

TESTIMONIALS.

"On a recent visit to Lambton I was much struck with the noble appearance of Pine-apple 'Lady Beatrice Lambton;' a plant of this variety in an 11-inch pot had a fruit, taking it either in size, shape, or handsome proportions, I venture to say would have delighted the heart of the most ambitious Pine-grower. In shape it was a perfect cone, with an even surface, 12 inches high, and at its thickest part 20 inches in circumference, surmounted with a neat little crown. This fruit weighed 10 lb. 2 oz. The colour is bright orange, flesh soft, flavour sweet and juicy, quite distinct from any Pine-apple I ever tasted, and in my opinion much superior to either Charlotte Rothschild or Smooth Cayenne. Much as I esteem these two varieties I predict that the 'Lady Beatrice Lambton,' when well known, will far supersede them.

"Mr. McINDOE, *Hutton Hall Gardens, Guisborough.*"

"I have several times seen your Seedling Pine-apple, 'Lady Beatrice Lambton,' in fruit at Lambton Castle, and have often tasted it, both in summer and winter, and my opinion of it is that, while it far exceeds the Enville in size and resembles it in shape, it equals the Queen and Smooth Cayenne in flavour, and in this respect far excels them in winter.

"WILLIAM THOMSON, *Tweed Vineyard, Clovenfords.*"

"Thanks for the slice of 'Lady Beatrice Lambton Pine' you sent me, cut from a plant ten months old, which much resembles in appearance a well-developed Providence, the pips being of immense size. The flavour is peculiarly luscious, flesh soft and melting, and should the flavour be equally as good of those noble fruits of it I saw swelling in the autumn, some of which weighed upwards of 10 lbs., I have not the least hesitation in saying it is one of the most valuable acquisitions among fruit that have been introduced for many past years, and one I venture to predict every Pine-grower when acquainted with it will be anxious to obtain,

"RICHARD WESTCOTT, *Raby Castle Gardens, Darlington.*"

"I have several times seen 'Lady Beatrice Lambton Pine-apple,' and have tasted fruit of it in winter, and consider it the most handsome Pine in cultivation. It grows into cone-shaped fruit of large dimensions in the winter season, when I found it to be remarkably juicy and much better flavoured than Smooth Cayenne or Charlotte Rothschild. It is soft and melting in flesh, like Prince Albert. I consider that these qualities, coupled with its very free fruiting habit, renders it a most desirable acquisition among Pine-apples.

"DAVID THOMSON, *Drumlanrig Gardens.*"

The above are a few of the many Testimonials we have had sent us, all of which agree in stating that it is one of the greatest additions to our fruit-houses that has been introduced for many years.

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From the Rev. H. W. Yule, *Shipton, May* 31, 1878

"I am pleased to be able to say that the herbaceous Calceolarias grown from the seed you supplied last year, have proved a very great success. My gardener says that he never saw any that were more satisfactory. And when they were used for the decoration of our church here at Easter they were universally admired by all who saw them."

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From Mr. Brownell, *Gardener to the* Countess of Kingstown, *The Castle, Co. Cork, May* 13, 1878.

"Sir,—I have had a very satisfactory account from my brother, in New South Wales, where I sent some seeds of your Cineraria and Primulas. He has been very fortunate with them in taking several prizes. He says they are the best he ever saw."



PRIMULA SINENSIS FIMBRIATA, Williams' Superb Strain, red, white, or mixed, per packet, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.* and 1 6

From Mr. A. Bogie, *Gardener to the* Hon G. R. Vernon, *Auchan House, April* 23, 1878.

"Sir,—The Primulas I had from you last year have been beautiful, not one bad plant or bloom I have not seen anything like them. The Hon. G. R. Vernon thinks they are the best he has had."

PRIMULA SINENSIS FIMBRIATA COCCINEA (New) .. .. per packet 3 6

From Mr. J. Gunner, *Great Baddow, April* 10, 1878.

"Sir,—Will you oblige by sending me one packet of Primula coccinea? I have enclosed a bloom produced from the seed I had from you last year It has been much admired by all who have seen it."

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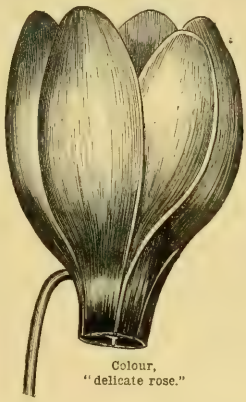
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SATURDAY, AUGUST 24, 1878.

BURNHAM BEECHES.

THE giant trees known as the Burnham Beeches cover 600 acres or 700 acres of land near Stoke Pogis. Some centuries ago they were pollarded, and the operation has produced the usual results; it has given the trees short, thick trunks and enormous heads, much bossed and knotted at the crown where the branches were lopped.

Some odd legends linger in the neighbourbood on the subject of these trees. One old person told a recent tourist that the limbs of the Burnham Beeches were first removed by the Saxons. According to Murray's capital *Handbook of Berks, Bucks, and Oxfordshire*, they were cut by Cromwell's soldiers to be fashioned into gun-stocks. During the Civil War Bucks was Parliamentary in its sympathies. A rector of Amersham who hated "Cromwell's soldiers," wrote of the influential Roundheads living in his neighbourhood: — "General Fleetwood lived at the Vache and Russell on the opposite hill, and Mrs. Cromwell, Oliver's wife, and her daughters, at Woodrow High House where afterwards lived Captain James Thomson; so the whole country was kept in awe, and became exceedingly jealous and very fanatical, nor is the poison yet eradicated. But the Whartons are gone and the Hampdens a-going." The Beech woods of the Chilterns and of Bucks generally belonged to the Roundhead gentry, and there were none better in the county than those of John Hampden, the Member for Wendover. Great Hampden and his mansion there was then, as it is now, buried amid Beech woods. It is quite unlikely, therefore, that the branches of the Beech would be cut for gun-stocks when better timber could readily be obtained. Some persons have imagined that Yew trees, standing singly in churchyards, furnished wood for making bows; but the knots and flaws of such timber would render it quite unfit for the purpose. The best Yew timber for bows was grown here and abroad on the same plan as the Beeches are grown for manufacturing purposes in Buckinghamshire—in woods, with tall straight stems, and without side branches. We may reasonably conclude that the picturesque appearance of the Burnham Beeches was occasioned by the practice of lopping them for firewood. There are still certain privileges of common on the land on which they grow, such as the right of gathering firewood from beneath the trees; but the freeholders, who may at one time have lopped them in a systematic manner, have long since vanished. In fact the trees have not been lopped for centuries, nor is it known when or by whom they were first lopped, nor when the practice was discontinued.

The poet Gray wrote to Horace Walpole on the subject of the Burnham Beeches in 1731:— "I have at a distance of half a mile, through a green lane, a forest (the vulgar call it a common), all my own, at least as good as so, for I spy no human being in it but myself. Both vale and hill are covered with most venerable Beeches and other reverend vegetables, that, like most other ancient people, are always dreaming out their old stories to the winds." They are all unsound, many of them hollow, and some mere shells. Huge bosses and protrusions have formed where the limbs for centuries had been

amputated; and the effects are exceedingly picturesque. The size of the Beeches is prodigious. There are a few trees among them of other sorts. An Oak has reached 24 feet in circumference, having thriven under persecution, and grown into a sturdy tree under the process of pollarding.

The country people in this neighbourhood are singularly ignorant of the name of Gray. "We have lived hereabout for this thirty years agone," said one of them, "and we never heard of a Mr. Gray."

A woodman employed by the lord of the manor professed similar ignorance, and he cared but little apparently for Burnham Beeches, or for anything, but a rather awkward piece of business which he had on hand. The steward had desired the woodman to cut down a dead Beech in Gray's "forest," and he carried an axe in his hand for the purpose of performing that task.

"He may not know it," said the woodman, "but there's a hornet's nest in that tree, and a strong one, too."

"Then," said the tourist, "you must be careful. My guide-book says, he lived—Gray I mean—at Stoke Court, a house now much enlarged. Which is the way to Stoke Court?"

"I'm thinking, 'haps they'll sting," said the woodman.

"Who lives at Stoke Court now?"

"You never saw so many hornets in one nest before," was the reply.

"My good friend," said the tourist, "I am asking about Stoke Court."

"I'm thinking as how, may be, they'll sting," said the woodman, following the train of his ideas, and gazing into the thick wood as if he saw the tree in the distance. "I know how it'll be," he went on; "the moment I sets to work they'll set to work."

The tourist here questioned the woodman about the church at Stoke, and quoted the lines—

"Beneath these rugged Elms, that Yew tree's shade,
Where heaves the turf in many a mould'ring heap,
Each in his narrow cell for ever laid,
The rude forefathers of the hamlet sleep."

"Bust 'em!" interposed the woodman; "I knows exactly what'll happen; soon as I begins to stir them up, they'll begin to stir me up. When I sets to they'll set to."

Gray lived in West End Cottage, outside the park, with his mother, aunts, uncle, and a pet dog to every chair in the parlour. The house was described by him as a square brick box, with doors and windows, standing in a pleasant sheltered hollow near a stream. Shade and shrubbery abounded; the summer-house in the wood, half a quarter of a mile from the house, still remains; and there is the same pleasant walk through the woods to Burnham Beeches. A mansion of Elizabethan architecture, named Stoke Court, the residence of C. Allhusen, Esq., stands on the site of West End Cottage, and pheasants crow in the coverts round it. When last the writer passed Stoke Park Mr. Robins could show in a north retarding house, 80 feet by 18 feet, the plants of Azalea which took the prize at the London International Horticultural Exhibition of 1866, also an orchard-house, a Peach-house of 80 feet, four graperies, each 35 feet long, and a very large Camellia-house. Since Queen Elizabeth visited Sir Edward Coke at the old Manor House, which is now dismantled, forming an Ivy-covered ornament of the park, the grounds of the new house have indulged largely in exotic ornament, and the situation being dry and sheltered, even Pinus insignis is preserving a healthy green from year to year. There is a noble avenue of Conifers at the west front, including large specimens of Picea cephalonica, and its neighbour and congener, P. Pinsapo, Cryptomeria japonica, Sequoia sempervirens, and many others. Rhododendrons edge the winding walks and blaze with beauty in June, and the tinted leaves of Azaleas blush deeply in October. There is a Horse Chestnut tree with branches spreading 90 feet, and beneath it, or in the park around, there are both red and fallow deer.

Near the church, and seen from the windows of the house, there is a memorial erected to the memory of Gray by the grandson of William Penn, and inscribed with those mournful verses from the "Elegy" beginning "Hard by yon wood." The poet died at Cambridge, where he held a professorial chair, and was buried here. He had lived in such retirement at the College that the ladies of the manor-house knew not of the presence of a poet within a quarter of a mile, until the echo of his fame reached them from London. They then immediately pounced down upon him and enlisted him for their evening rubber, having previously played almost invariably with a dummy.

The history of Stoke Pogis is of more than average interest, and a few items may be here inserted in this rambling narrative. The estate was originally called Stoke, till the Norman family who owned it terminated in a daughter, Amicia de Stoke, whose marriage with Richard Pogis occasioned the addition of the second name, which is not, however, used in ordinary conversation. Within two generations the house of Pogis also ended in a daughter, and passed, as before, to another family, from whom descended the Earls of Huntingdon, who built the manor-house, that ancient pile with

"Rich windows that exclude the light,
And passages that lead to nothing."

In the reign of Elizabeth Sir Christopher Hatton, the Lord-Keeper, lived here, as we read in *Murray*.

"Full oft within the spacious wall,
When he had fifty winters o'er him,
The grave Lord-Keeper led the brawls,
The Seals and Maces danced before him."

Chief Justice Coke, another owner, is said to have advised John Hampden to resist the payment of ship-money. If so he the better deserves his memorial in the park, built by Mr. Penn. The estate once more found a master in a new family by the marriage of Sir Edward's heir and daughter to John Villiers, brother of the notorious Duke of Buckingham, and afterwards by creation Baron Villiers of Stoke Pogis. The historical family of Penn next acquired possession, and to them succeeded by purchase the present owner, Mr. Coleman.

One wing only of the old manor-house now remains, and notwithstanding all its memories it has acquired more celebrity as the scene of Gray's "Long Story" than from all its actual records. The poet—to return to him and finish with him—was born in 1716, educated partly at Eton, and narrowly escaped being made a lawyer. The mournful key of his famous "Elegy" has been explained by a touching incident—the death of a friend and schoolfellow in the year when the poem was written. Gray had sent his "Ode to Spring" to his dear friend, who was dead when it arrived! Notwithstanding all its polished art there is "the touch of Nature" in every verse of the "Elegy," from the opening line, "The curfew tolls the knell of parting day," to the last of the epitaph, "The bosom of his Father and his God." And this, with its nationality and exact rural description, is the secret of its popularity. There is Nature, too, combined with noble feeling, expressed in the same plaintiff minor tone, in the following:—

"Sweet is the breath of vernal shower,
The bees' collected treasure sweet;
Sweet music melting falls, but sweeter yet
The still small voice of gratitude."

In these verses the poet gave delicate expression to his gratitude to the Duke of Grafton, who obtained him his Professor's chair at Cambridge.

The gardens at Stoke Park were originally laid out for Mr. Penn by Ryston and Brown. *H. E.*

New Garden Plants.

Uncifera heteroglossa, *n. sp.**

It is a very great pleasure to have before one what is probably the first inflorescence of Uncifera flowered in Europe—alas! a new species, when I had preferred one of the two Lindleyan species. The raceme is rather short and the rachis pallid, so much covered over and over with red dots that it looks quite red. The bracts are triangular, very short. The flowers are of the size of those of Sarcanthus tricolor, and may have been white, but came totally withered. They have the usual oblong blunt sepals and petals. The lip is rather navicular, hollowed out, with the anterior border thickened. There are not the retrorse great teeth of Uncifera obtusifolia. The ascending uncate spur is well represented. The grand merit of the flower is its column. The anther case is like an old-fashioned three-horned hat, with a much prolonged middle part overlapping the rostellum. The caudicula is most curious, rhomboid elongate, replicate on each side, so that the lateral horns are lying free of the anthers. It bears at its free narrow top two nearly globose sulcate pollinia. The glandula is long, linear, split, and perhaps deciduous. I found it several times free in the spur, so that it might be mistaken when shining through the tender skin of the spur for an inner process, such as are seen in several genera of the distichous Orchids. There is an uncate process, as in the hinder side of the androclinium, to support the anther. The flowers are fewer and smaller than those of Uncifera obtusifolia, Lindl.

When studying this rather difficult plant I have very much enjoyed the sight of Dr. Lindley's analytical sketches. What pleasure he must have found in making out the features of this curious genus, and how much must he have enjoyed his researches! The great care he took for all particulars gives evidence how much he valued the Uncifera. "The plant in growth very much resembles a small plant of Vanda Cathcartii." This is the accompanying remark of Mr. Bull, who sends this extraordinary curiosity, the third species of one of the most astonishing genera. *H. G. Rchb. f.*

Masdevallia hypodiscus, *n. sp.* †

This is a stately member of the Fenestrata group. All the dimensions are twice those of the nearest species, M. gracilenta. The leaf is lilac-purplish underneath, and the rather long stalk is bent. The flowers are deep purplish violet, with a very long narrow window on each side, and numerous whitish fringed crests all over the principal veins. The lip is sagittate at its very base and sagittate also a second time in the middle, these with sharp acute retrorse angles, while the small angles at the base are blunt. There is a space in the disk of the basilar part covered with square warts, which looks like a pavement. It has just now flowered with Mr. Stuart Low—one of the curiosities sent by the enthusiastic and energetic collector, Mr. F. C. Lehmann. I have similar things from various collectors, but have just now no time to make a minute investigation in order to ascertain whether they are identical. *H. G. Rchb. f.*

Phalænopsis violacea, *Teijsm.*, Murtoniana.

Few plants took longer time to get known than this, it having been described by Messrs. H. Teijsman and L. Binnendijk in the *Plantæ Novæ in Horto Bogoriensi cultæ* in a most unsatisfactory manner. It has been figured in the *Flore des Jardins du Royaume des Pays-bas*, but neither could it be understood by this figure, though one may understand it as soon as the flower itself is at hand, when one sees that those crescent-shaped yellow parts of the lip are intended for the side laciniæ seen in perspective.

I had but once seen a fresh flower, by the kindness of Mr. Willink, then of Amsterdam, in 1862. I do not know of its having flowered anywhere else except then at Leyden. I have seen numerous plants with Messrs. Low, Bull, Linden, and the peduncles were even branched and exceeding a foot in length. The leaves were of a gorgeous extension. No doubt about the name, since shrivelled old flowers gave evidence.

I have been very pleased to get just now the second European flower I have seen, and it is the third case I know of its flowering. It is a new variety, light lemon-yellow with purplish inside at the base of lateral sepals, purplish in the middle part of lip, with purplish base of column and orange side laciniæ. It has been sent by Mr. H. G. Murton, Superintendent of the Botanic

* *Uncifera heteroglossa*, n. sp.—Habitu Esmeraldæ (Vanda) Cathcartii. Racemo pauciloro; floribus illis Unciferæ acuminatæ, Lindl., æquantibus; sepalis tepalisque oblongo ligulatis obtusis; labello naviculari limbo anteriori incrassato; calcari ascendente corniformi. Ab Uncifera obtusifolia, Lindl., recedit floribus minoribus; labelli laciniis retrorsis non evolutis—Coll. W. Bull. *H. G. Rchb. f.*

† *Masdevallia hypodiscus*, n. sp.—Aff. M. gracilentæ duplo major; folio longe petiolato cuneato-lanceolato; floris fenestra elongata, rostre abrupto, deorsum verso, minuto, carinis cristis erosulis onustis; tepalis rhombeis; labello ima basi obtuse, medio argute sagittato acuminato ciliato, disco pavimentato ante basin; anthera apiculata. Jno. F. C. Lehmann Coll. S. Low. *H. G. Rchb. f.*

Gardens, Singapore, and is grown by Mr. J. Murton, gardener to Mr. M. H. Williams, Tredrea, Perranarworthal, Cornwall. *H. G. Rehb. f.*

PHLOX DRUMMONDII.

At a recent provincial horticultural show prizes were offered in the cut flower classes for Phloxes. The class was simply expressed "Phloxes"—nothing more. I was in attendance as one of the censors, and naturally expected to see blooms of the ordinary perennial varieties, but not one was staged; instead thereof there were some charming stands of Phlox Drummondii, large, varied in colour, brilliant and delicate shades alike appealing to that love for flowers which all florists feel. They were an exceedingly pleasant surprise, and being in bunches of a few trusses of one variety, were most effective on the exhibition stage. The apparent keenness in the competition led to the surmise that there existed several cultivators of this beautiful annual who were in the habit of pitting their strength against each other at the annual show, and I found it was so. In getting about to flower shows I have observed evidence that certain fancies are powerful among growers in different localities, and that they always form a leading feature of interest at exhibitions—here it was Potatos, there Onions, anon Asters, also Zinnias, Fuchsias, Verbenas, Marigolds, &c., but this was the first time I had met with Phlox Drummondii exalted into a special fancy at a flower show. And I was right glad of it, for it is exceedingly pretty, wonderfully floriferous, and as useful as a summer bedding plant as it is thrifty and free.

I was shown through the garden of one of the exhibitors of Phlox Drummondii, and found that the plants were grown in long narrow beds, with walks between them, so as to admit of ready access to any part of a bed. The rich vigorous growth showed that the plants were in good soil, and the Phlox Drummondii is disappointing if not so grown. The beds had been top-dressed also just before the plants had flowered, so there was no lack of encouragement on that score. The varieties were mingled together, which added to the attractiveness of the beds, and bright colours alternated with paler tints. The generous culture had caused the production of large trusses furnished with splendid pips, well finished from the florist's point of view.

The seed was sown in a little heat early in March, and when large enough the tiny plants were pricked out in boxes, and from thence to the beds. Meanwhile the beds had been well prepared for the plants, and it would be certain to lead to disappointment to grow them in poor soil.

In this garden there were beds of Asters, Stocks, Verbenas, Gladioli, Zinnias, &c., all showing the care and attention that surely produces fine flowers. Many who grow these fine plants are so apt to plant out in a haphazard fashion and in poor soil, which only leads to disappointment, and the blame is cast on the seedsman that the strain of seed was not good. The best strain to grow is that known as grandiflora, and one has only to compare the large-flowered varieties of comparatively recent introduction with the smaller-flowered and less brilliantly coloured varieties grown a few years since. The brilliant crimson grandiflora splendens is remarkably fine, and a bed of it well grown would be a very striking feature in the flower garden.

The best thing any one can do who is anxious to get acquainted with the varieties of Phlox Drummondii is to purchase the largest collection he can—for some twenty varieties or more can be had—and by this means find out the best and most striking among them, and grow these in the future. The grower can save his own seed, and so get the sorts he wants. All the striped varieties, also the Chamois, yellow and orange, are very poor as yet, but they might be improved if taken in hand. What a gain it would be to have the fine striped General Radetzsky of some twenty years ago back again, as that was a true and very beautiful striped Phlox Drummondii, at that time much used for bedding purposes, and propagated by cuttings to maintain it true. There is reason to fear it is now quite lost, but it was a true type of a striped Phlox Drummondii.

Any one desirous of getting well up in the varieties of the Phlox Drummondii should pay a visit to Chiswick, as Mr. Barron has filled several of the beds in the broad grass plat with them; and as they include the best varieties, a good selection can be made.

Some of the finest Phlox Drummondii I have ever seen are growing in an old-fashioned vicarage garden, where they get the morning sun, and that only; for as soon as the meridian is reached a line of tall trees interposes their friendly shade. The plants simply get the treatment given to the ordinary bedding stuff; but they flourish with rare proficiency, and for a long time during the summer are objects of great beauty in the flower garden. Strangers become greatly interested in them, ask what they are, and wonder they have never seen them before.

There are about six or eight varieties that might be used with great advantage to form beds of separate colours. In large gardens they would be very effective. As the Phlox Drummondii is a free seed producer, the trusses of bloom should be removed as soon as they decay; and any seed required should be looked for from plants specially set apart for the purpose. *R. D.*

HAIGH HALL.

Haigh Hall, the seat of the Earl of Crawford and Balcarres, is situated about 4 miles from Wigan, and is a noble edifice, standing on an eminence which commands a view of a vast tract of country and varied scenery, but, unfortunately, the great amount of manufacture carried on in the district rather militates against the growth of delicate Conifers and the choicer section of evergreen shrubs; indeed the climate as a whole is about the worst that can well be imagined for gardening pursuits generally. The different approaches to the mansion are kept in beautiful order, and no pains or expense has been spared to make the grounds all that can be desired. This is done by making a judicious selection of such plants as are known to thrive best in the district, and by adopting a special mode of planting. Mr. Jamieson, his lordship's head gardener, is fully alive to the difficulties of the situation and is engaged in introducing new features into various parts of the grounds. The idea has been eminently successful so far, and no doubt the improvement will be supplemented annually so long as improvement is possible. The Rhododendron is the conspicuous feature at Haigh, and as Mr. Jamieson remarked it succeeds, not because of a suitable soil, but because of a wet climate and partial shade. The soil is naturally a hungry gritty clay, the very essence of poverty to look at, and yet Rhododendrons grow luxuriantly. There is a Rhododendron garden adjoining one portion of the dressed grounds which is planted with a fine collection of hybrids and which are in robust health. The garden is in the shape of an oval, and is protected on all sides by large forest trees, which affords ample protection and shade. On examining the roots of these plants I found the surface one mass of fibre, no doubt the natural result of moisture and shade, and yet many people think the Rhododendron requires an expensive preparation. Leaf-mould is an admirable substitute for peat in Rhododendron culture, and is not an expensive commodity on large estates. The secret of Mr. Jamieson's success in the introduction of evergreen clumps in the grounds at Haigh has been mainly owing to a careful study of suitable plants for exposed situations, and by adopting a protective mode of planting, every plant shields its neighbour, and the colours of the Rhododendrons are beautifully blended and varied. There are large banks of the commoner type of Rhododendrons contiguous to the Hall, and when in full flower (as they were when I saw them) they present a chaste and picturesque appearance.

Within easy distance of the Hall is a block of ornamental plant-houses, four in number, viz., two plant stoves, an orangery, and Camellia-house. There is an ornamental lake in front of these houses, oval in shape. The enclosure is bounded by a belt of ornamental trees and shrubs, with an irregular border laid out for carpet-bedding. The lake is surrounded by a low wall with flower vases arranged at equal distances, and there is a magnificent fountain in the centre of the lake. The orangery is circular shaped, and stands out conspicuously from the other houses at either side, the Camellia-house branching off at the back. The centre of the orangery is filled with large trees in pots, all of which are in capital condition, and the side stages are occupied with Epiphyllums and such like, the roof being covered with a fine plant of Passiflora edulis and a plant of Clianthus puniceus magnifica.

Plant stove No. 1 contains a splendid collection of choice flowering and foliage plants effectively arranged; both stoves are single span with a path all round. At either end of this house there is an arch over the path of Lygodium scandens, which has a pretty effect, the back wall being covered with common moss gathered from the woods, and tastefully planted with Selaginella denticulata, Begonias of sorts, Maidenhair Ferns in variety, Caladiums, Cypripediums, and such-like, the roof being lightly covered with creepers, such as Stephanotis floribunda, Cissus discolor, Allamandas, Bougainvilleas, &c. The principal feature in this house is, however, a picturesque piece of rockwork which is arranged with consummate skill, and is at once imposing and attractive. Some of the most prominent pieces of rock are dressed with common moss, which is kept in a growing state and quite green. In the centre is a plant of the beautiful Adiantum concinnum latum, the next one is dressed in a similar fashion with Panicum variegatum, and another with Gymnostachyum Pearcii, then the lovely Fittonia argyroneura is creeping into a jungle beneath, and coming in contact either with a Fern of deep green or some other contrasting colour in foliage. A half specimen Tree Fern occupies the topmost place of all, with its fronds gracefully overhanging the rocks, while different species of Orchids are suspended from the roof on blocks with one or two fine baskets of Nepenthes Hookerii amongst them.

The foliage plants grown here are mostly of a size suitable for house decoration in winter. Mr. Jamieson adopts a very good plan of covering the surface-soil of such pots with Selaginellas and Panicum variegatum, either of which answers well according to the colour of the foliage. There are Gardenias set with buds by the hundred; Rondeletia speciosa in fine health; and Bougainvillea spectabilis, which is wintered in a cold house, and reintroduced to heat again in the spring. The most noteworthy plants in the collection are fine samples of Dracæna amabilis, Aralia elegantissima, Cocos Weddelliana, Croton Disraeli, Dracæna regina, Croton Weismanni, Pavetta borbonica, Medinilla magnifica, Cyanophyllum magnificum, and Pandanus Veitchii.

Of Orchids there is a large collection, many of them in splendid condition. Dendrobium Farmeri and D. densiflorum with pans of Cœlogyne cristata, over 3 feet in diameter, are perhaps the finest I have seen. Cypripediums, Aerides, Vandas, are grown both in pots and in pans; while Lælia anceps, Dendrobium Parishii (not so good to my mind as the old nobile), Pierardi, Bensoniæ, and Sophronites grandiflora, are thriving nicely on blocks. Anthuriums are grown in large pans, and comprise many fine varieties. There is also a fine stock of the beautiful Adiantum farleyense, together with Cheilanthes elegans and other useful sorts.

Plant stove No. 2 is filled with a large assortment of useful plants in course of preparation for purposes of decoration next winter. The back wall is covered with flowering Begonias, and on the roof are trained good plants of Allamandas, Clerodendrons, and other creepers. I noticed, as a sample of Mr. Jamieson's idea of plants for winter decoration, a rustic basket with a Dracæna terminalis in the centre done round with drooping Ferns. There were others of Ficus Parcellii done round with Selaginella denticulata [Kraussii]. Seedling Gloxinias are of a superior strain, one, a lilac mottled, being especially striking. There was also a collection of Odontoglots at the cool end of the house, and a general assortment of other plants, including Palms, Ferns, &c. The sides of the stages are dressed with mosses and Panicum variegatum arranged alternately.

Leaving this part of the garden we retrace our steps to the fruit and kitchen gardens, which are three in number, and which are well stocked with hardy fruits and vegetables. The gardener's house, which is well appointed in every respect, occupies a commanding site at one entrance to the garden, with a bold walk in front, which leads to a range of offices and sheds away to the right and quietly secluded (as all such working places should be) from the more prominent features of the gardens. On either side of this walk there is a collection of Violas and Pansies which appear to be favourites, and to receive more than passing attention. Parallel with this walk there is a range of span-roofed houses for growing Potatos, French Beans, and Strawberries.

To the east of these are the Pine pits, together with a group of other working pits and frames. The varieties of Pines grown embrace all the best varieties,

Smooth Cayenne and Charlotte Rothschild promising to be especially good. On the west side of this garden is a large span-roofed greenhouse running north and south; it is 80 feet long by 22 feet wide, and contains a fine collection of plants, principally for cutting. The creepers here are what might be called old-fashioned ones, such as Habrothamnus elegans; yellow and white Banksian Roses, with Maréchal Niel grafted on them, but the Maréchal is not satisfactory with the Banksian as a stock. Other portions of the roof are covered with climbers in a thriving condition. Amongst old-fashioned plants there was a specimen of Rollisson's Unique Pelargonium, about 6 feet in diameter, and many other varieties of scented Pelargoniums, all of which are well adapted for keeping the flower-basket well supplied. These Pelargoniums are invaluable for cutting, indeed for any other decorative purpose.

Rhododendrons Veitchii, Duchess of Buccleuch, and Countess of Haddington are acquisitions, and are superior plants for general decoration. The general collection included healthy samples of Ericas, Epacrises, Pimeleas, Genetyllis, Acacias, Lapagerias, with a handsome lot of flowering Pelargoniums and other miscellaneous subjects. Two span-roofed plant-houses run alongside this greenhouse; these are useful houses, and are well filled with flowering and other plants. Abutilon Boule de Neige is planted out, and is a perpetual bloomer. There is a batch of double Primulas, another of Cyclamens, and a third of Bouvardias, which promises in turn to do good service. Carnations, double Petunias, scented Verbenas, Heliotropes, and a variety of other useful subjects, are here by the hundred, and at the end of the season will no doubt worthily fill the place of their summer rivals. The next is a Eucharis-house, span-roofed, and 65 feet long, with a walk up the middle. The plants are always kept in a growing state, or, at least, are not "dried off," as is generally recommended, and flowers are gathered in quantity all the year round. The east wall is occupied with a Strawberry-house on the west side, and is therefore protected from the fearful east winds that are too frequent in our changeable spring climate. The varieties grown are Vicomtesse Héricart de Thury, Sir Charles Napier, Premier, President, and British Queen, and some others are on trial; but the Vicomtesse and Sir Charles are the sorts chiefly depended upon for the main supply. There are over 3000 pots grown, and a constant supply is kept up during the greater part of the year. In a range of pits running east and west in three compartments are excellent crops of Melons and Cucumbers, and a fourth house at the back of this block is devoted to Pelargonium growing. The Melons include Mr. Jamieson's well-known Conqueror of Europe, and Telegraph Cucumber. Novelties are represented in Sonerilas and other delicate subjects grown under bell-glasses—pleasing little plants, that require much attention and care.

Before leaving this part of the garden I must notice a range of Peach-houses the trees in which are carrying fine crops, and are pictures of good health. The trees in the late house were carrying an enormous crop, as were several Figs in pots. The centre house is the early one, and the first fruits of Early Louise were gathered on May 1. This, I learn, is a promising variety for early work, and is destined in time to supersede a good many other sorts. It is considered far ahead of Early Rivers or Early Beatrice by Mr. Jamieson. As an instance in the difference of varieties ripening in the same house I may mention that last year Early Louise Peach was gathered on May 12, and Prince of Wales Nectarine at the end of July. The Prince is a fine Nectarine and a grand variety for exhibition. In the first walled-in kitchen garden the forcing houses are extensive and well adapted to their work. They have been erected under Mr. Jamieson's superintendence. Some are remodelled and some are altogether new. Few men have attained to the high reputation that Mr. Jamieson enjoys as a fruit grower, and very few indeed are held in higher public estimation, I therefore expected to see something good in the fruit line, and was not disappointed. The west wall of this garden is planted with Plum trees, and a portion of it is covered with glass. The trees under glass are bearing good crops, but those on the open walls are but moderate. The south wall is covered from end to end with glass, viz., six vineries and three Peach-houses.

No. 1 is a Hamburgh-house, where the Grapes are ripe early in May; they were beautifully coloured, and an excellent crop. The inside border is heated with hot-water pipes, which are not often used, and when they are the heat is not allowed to rise beyond a very moderate figure. There are also upright pipes communicating with the pipes in the border in case the latter should by any oversight become overheated, so that the surplus heat can escape into the atmosphere of the house. In addition to this advantage, water can be poured into the bottom of the border, and a moist heat substituted for a dry one. The outside border is simply covered with about a foot of dry litter, and covered with shutters.

No. 2 vinery is mainly planted with Madresfield Court; No. 3, Black Hamburgh and Duke of Buccleuch grafted on the Hamburgh. The Duke is a noble Grape, and Mr. Jamieson not only grows it, but exhibits it well. Those who remember the grand examples of this Grape exhibited at Manchester by Mr. Jamieson two years ago will not soon forget the sight, and will be very slow to believe that the Duke is worthless.

No. 4 is a young house of Lady Downe's, Gros Colman, Barbarossa, and Venn's Black Muscat. No. 5, Lady Downe's, Child of Hale, Alicante, and Muscat Hamburgh. No. 6 is all Hamburghs, which are being encouraged on the long-rod principle.

All the Vines are in splendid condition, and with such a formidable arrangement, where all are in full bearing, it ought to be "Vine growing made easy" on an enlarged scale. The Peach-houses are stocked with trees in full bearing mainly for mid-season crops.

The range of houses in the next garden are the most spacious and imposing of the whole. The range is 266 feet long and 18 feet wide, divided into three compartments.

The first is a Peach-house planted with young trees of different varieties. The second is planted with Cherries at the front and Peaches on the back wall. The Cherries are May Duke, Elton, Early Lyons (a grand Cherry), and Bigarreau. The third house is planted with trained Fig trees on the front trellis and Peaches on the back wall. The varieties are arranged to succeed one another, so that a supply is kept up as long as it is possible to have them. The crops of Figs in these houses, both on the trees, planted out, and in pots, are exceedingly fine—in fact, remarkable for size and quantity. There is no doubt that under shrewd management Figs can be made to fruit satisfactorily without so much chopping and pinching as is often recommended, although restriction may be desirable, indeed necessary, in some cases. Castle Kennedy, I noticed, was growing in pots, with other vigorous sorts, but it was also planted out, and with Negro Largo was fruiting as freely as anything else in the house. Nearly every variety of Fig worth growing finds a home at Haigh, but after going over a long list and discussing their qualities *seriatim* Mr. Jamieson concluded that nothing was equal to Brown Turkey for forcing, and the old Brunswick for outdoor culture.

Having now summed up my few scattered notes (which will convey but a very imperfect idea of the thousands of plants grown in an establishment like Haigh Hall, to meet the demands of a year's consumption), I would draw attention to a capital plan of protecting stone fruits on open walls adopted at Haigh. The plan is simple, and is as follows:—A piece of thin wood is made fast on the wall coping, and upright posts are driven into the border along the edge of the walk; wires are then run from the coping to the posts, forming a sort of skeleton framework, over which a net is thrown, which not only protects the fruit on the walls but also the Strawberries in the borders. It takes little more netting to cover the border and wall than it would to cover the wall alone; besides, the net need not be removed from the time it is put on till the crops are gathered. *Visitor.*

PINUS PONDEROSA PENDULA.

In your issue for June 22 you illustrate and describe a Pinus ponderosa as it appears in Colorado, as well as in other parts of the Rocky Mountains, from photographs sent you by Sir Joseph Hooker, and taken during his late trip among these mountains last summer. On his visit to my place in the autumn, on his return from his expedition to the West, Sir Joseph was very much struck by a sport of Pinus ponderosa which I have in my grounds, and a photograph of which I send you enclosed, it having been taken at his request, and which he thought should be called Pinus ponderosa pendula (see p. 237, fig. 42).

This specimen was imported a few inches high (not over three, I think), from Messrs. Waterer & Godfrey, of Woking, in 1851, with half-a-dozen others of the same size. The pendulous variety assumed its character very early in life, the branches weeping more and more as the tree advanced in age, while the other five retain, as you will see by another photograph, the normal condition and character of the tree as found by Sir Joseph in the Rocky Mountains. The growth of both varieties is very rapid, especially the pendula, averaging 2½ to 3 feet a year. *Henry Winthrop Sargent, Wodenethe, Fishkill on Hudson.*

A PEDESTRIAN TRIP ACROSS SOUTH AFRICA.

(*Continued from p.* 210.)

After spending considerable time at the foot of the Drakensberg mountain range, we ascended to the highest elevation, and travelled in a westerly direction toward the Sekukune frontier, after which we turned south and went to the small border town of Leydenberg. The country from this range, west to Sekukune, north to the Oliphant River, and south to Leydenberg, consists entirely of high mountains and deep valleys. It is comparatively a naked country, as, with the exception of a few Proteas, Aloes, Acacias, bulbs and grass, the vegetation is confined to the ravines or kloof. On this tedious journey we passed through the various places where gold has been discovered, and worked for the last four years, but without much success. In our rambles we had good opportunities of testing the mineral wealth of the country, and in several places we discovered gold in small quantities, not sufficient to pay for working; but without a doubt there is a vast amount of gold to the north of this range beyond the Oliphant River—a part which up to now has been debarred from Europeans, and especially gold diggers. Had the late Mr. Baines lived to carry out his life's object, we should now be in possession of a complete knowledge of the productions existing to the north; but since the unfortunate and lamentable death of that able and worthy traveller, nothing has been done in the matter.

On this journey the scenery was splendid, and, as a natural consequence, caves are large and numerous in these mountains, once barriers to the ocean. Often I have wandered for hours without finding an end to them, and rarely failing to come across streams of pure water running along the floors, and suddenly disppearing down what appear to be rents in the earth's crust. One morning we started from Pilgrims' Rest Creek (a tributary of the Blyde River) to explore the valleys in a northerly direction. We took a supply of tarred rope to use as torches. After crossing the creek we toiled for a long time in ascending to the top of a range 6500 feet above the sea level. These mountains consist of horizontal layers of hard metamorphic rocks resting on a bed of decomposed grey granite, often as soft as putty; quartz, ironstone, and flint boulders form a deep conglomerate alluvial in the valleys, and it is in this alluvial that gold is found. The sides of this range were very poor in vegetation; numerous herbaceous plants, Aloes, &c., grow amongst the rocks, with a few Ferns, and the rest is covered with hard, coarse grass. After reaching the top, and skirting the side of another ridge, we commenced to descend a little in the direction of the Blyde River. All at once we came to a clear rippling stream, of a good size, which originated higher up the mountain. Seeing a clump of small trees, &c., towards which the stream was running, we made to it, and to our surprise found that the water disappeared over a precipice into a large deep hole, which was surrounded by these trees and bushes. This aperture was about 60 feet across, of a circular shape, and about half-way up the mountain side. Feeling sure that this stream was a tributary of the Blyde, I determined to find out its egress from the bowels of the earth. We went to the bottom and followed the valley along, until we came to a stream running from the direction of the mysterious aperture. We followed the stream up; it was very picturesque, with numerous little waterfalls in the many narrow gorges through which it struggled. On tracing it up for about 2 miles, we came to some lofty cliffs, with a considerable growth of trees and shrubs at their base; through these trees we traced the stream, and discovered it pouring forth from the mouth of a large cave. How splendid the scene—the lofty entrance, with its jagged outline, the sparkling water, the lichen and moss-covered rocks, the luxuriant

growth of Adianti and Trichomanes, with the Aloe-clad cliffs towering far above, made the place enchanting. After enjoying this beautiful scene, we entered the cave and, finding it very dark, lit our torches, fastened the end of a ball of twine to a rock, so that we could not possibly lose ourselves, and then followed up the stream. The cave was very high and in places we could not discern the ceiling, which was decorated with drooping pinnacles of petrifaction, sides of the hole were covered with moss, Selaginella, Trichomanes, Adianti and Aspleniums, and higher up Gleichenia covered the whole surface. This luxurious growth, sparkling water, with the outline of the cave for a frame, made a most fascinating and sublime picture.

The foregoing is only one of the many delightful scenes we beheld on our way to Leydenburg, at which place we emerged from the mountainous country with claims the greater part of the district, keeps up a large armed force on the borders, and is always threatening, or at war with the settlers. This state of affairs is not only irksome to the immediate colonists, but dangerous to the South African colonies at large, for it breeds and encourages discontent and strife on all our borders. On leaving Leydenburg we travelled in a south-westerly direction for about 100 miles to Middleburg, a small township on the Oliphant River. This is a



Fig. 42.—Pinus ponderosa var. pendula. (see p. 230.)

white as chalk. Making our way from rock to rock for a good distance in this damp, lofty subterraneous passage, the cave took a sudden turn, and then what a sight burst upon us! There we were, in darkness, looking at a brilliant cascade about 50 yards ahead. For a moment we were astounded, as it seemed more like a vision, a fairy tale, or a transformation scene at a London pantomime. The sun at its zenith was pouring its refulgent light into the mysterious hole we previously discovered, forming rainbows out of the spray, and making the water as it was dashing over the precipice sparkle like diamonds. The steep all its caves and waterfalls, into one of a melancholy aspect. When gold was discovered in this district a few years ago this town became of importance, buildings were erected, speculators swarmed into the place, trade became brisk, and land assumed high prices; but now the gold-fields have turned out a complete failure, and the outbreak of Sekukune has reduced the once promising town to a mere nothing. It is in this district that the want of a definite "native policy" is felt—a district that has always been devastated and kept back by frontier wars, and always will be so, unless something definite is done. Sekukune very hot place, and the surrounding country destitute of a bush. Continuing in the same direction for 130 miles, we arrived at Pretoria, the capital of the Transvaal. It is a very scattered place, but pleasantly situated on a large plain, surrounded with stony hills. In the distance the town has a beautiful appearance, owing to large quantities of Eucalypti, planted in all the streets and on the banks of the river; the buildings as a rule are very poor; cultivation is neglected, and, judging from the insignificant botanic gardens, horticulture is a taste yet to be acquired. From Pretoria we

travelled on for about 100 miles to Potchefstroom, on the Mooi River. This town is equal to any in South Africa; it is well laid out, well watered, well built, and well cultivated. After leaving Potchefstroom we followed the Vaal River for over 90 miles, and crossed the Maquassie River into Griqualand.

The Transvaal.

Besides this trip across the Transvaal, we went from south to north a few months previously, and therefore ought to have a correct idea is one of what the country really is. The general aspect is one of vast rolling grassy plains, destitute of trees and presenting a clear horizon as far as the eye can reach. In some places it is broken up into stony ranges of bare mountains, some of which have a scattering of Acacias at their base. The whole country is well watered, and possesses a fair proportion of arable land; the climate is very healthy and exhilarating, except towards the north, where the fever often commits great ravages; and, owing to the nakedness of the country, people are very subject to diseases of the eye. All kinds of temperate and subtropical fruits can be grown; Oranges, Figs, Apricots, and Peaches are the general favourite throughout the settlements, and Tobacco, Wheat, forage, and "mealies" are the usual crops. With minerals the country is tolerably well supplied, but not of that stamp and quantity to justify the late deceptive cry of the "mineral wealth of the Transvaal," which has been used by speculators, &c., to get the country opened up, prospected, and peopled. As the bright side of this colony has usually been held up, I will, apart from prejudice, give the other side. I only recollect seeing one man who did not regret coming into the country—never saw a person who was not disappointed in it. To my knowledge hundreds of men have come into the country with capital and have left it penniless. I have seen dozens of deserted farms, and thousands of settlers struggling for an existence on milk and boorsmeal. Horses, sheep, and cattle are subject to numerous and prevalent cattle diseases; cultivation is uncertain and a risky undertaking, for drought, hailstorms, and locust swarms are common occurrences. The country is almost destitute of fuel, and dried cow-dung is the universal article for cooking purposes; bad roads, no bridges, and the extortionate nature of the merchants, render articles of apparel and consumption very dear, whilst the indolence and ignorance of the Boors, as regards agriculture, cause flour, "mealies," eggs, butter, and poultry to fetch an exorbitant price. Besides all this, the naked melancholy aspect of the whole place renders life a misery to a settler, and subjects him annually to sore eyes. However, by annexing Delagoa Bay, forming a railway, and placing a few enterprising men at the head of affairs, nearly all these drawbacks would be abolished. By forming a "forest department" on a small and economical scale, for the express purpose of propagating and planting suitable trees all over the territory, the climate would eventually be improved, the bleak aspect abolished, timber would be plentiful and cheap, and I firmly believe the majority of diseases, which now keep the land in a backward state, would be exterminated. It is not because suitable trees cannot be found that the Transvaal has not been intersected with timber belts, as Eucalypti flourish here as well as in Australia, and I have seen gigantic trees not eight years planted; besides many other species grow luxuriantly and require very little attention at first and afterwards none.

When once away from the eastern mountains the indigenous vegetation is very poor, and nearly all the magnificent plants occupying these grassy highlands are found in the uplands of Natal, so that in the whole journey across the Transvaal I saw nothing worth collecting or describing. The same may be said of the animal kingdom, for the numerous animals which once existed here have been driven beyond the Limpopo River; the birds are very poor in variety and plumage, except a few varieties of Taniger. As we had been told this route would display a better country than our previous journeys had done, we were greatly disappointed; as there was nothing but flats, flats, grass, grass, day after day, with nothing to relieve the eye (except a few imported Gum trees) or to arouse the mind from that stupor which sameness and bleakness in a hot country throw over it. From the Maquassie River we went on to Bloomof, and there crossed the Vaal River into the Free State, followed the river down to Kimberly at the Diamond Fields, then travelled south to Hopetown, crossed the Orange River, traversed the Roogeveld and the Karroo Desert to Buffalo River, where we took train to Cape Town, making in all a distance of 1360 miles from Delagoa Bay to Cape Town. On leaving the Transvaal we got into a different aspect; instead of the green, grassy plains, we had a stoney, sandy country with a scarcity of water, and covered with numerous species of Mesembyanthemums, Stapelias, Aloes, and Composites. On the banks of the Vaal and Orange River we saw large plants of Salix gariepina, Olea similis, and Rhus pyroides. During the rainy season the Roogeveld and Karroo must swarm with innumerable plants, which only display their foliage and bloom after a shower. Mesembryanthemum campestre is the most common species; M. spinosum, M. croceum, M. arboriforme, are also very common; Lycium tetrandrum is the predominating shrub, and Stœbe Rhinocerotis the predominating herb; Acacia detinens and A. atomiphylla are met with; Alyssum glomeratum, Oxalis lupinifolia, several Gnidias, Senecios, Helichrysum, Polygala, Hebenstreitia integrifolia, Euphorbia tenax, E. mauritiana, Aloe claviflora, Crassulas, Asters, Solanums, Gnaphaliums, Hesperanthus, Gazanias, Malvas, Salvias, Hibiscus cucurbitinus, Mahernia vernicata, Cassia arachnoides, Phlomis, Royena microphylla. Salsola aphylla is very abundant and supplies the animals with food. These are a few plants which I noticed on my hurried journey through that barren, inhospitable, and worthless tract of country, and none but those who have had to traverse it can understand what a vast amount of Cape Colony is useless to the English settler, and only occupied by a few Dutch Boors. *Chris. Mudd.*

NOTES FROM KEW.

Fuchsia corymbiflora, planted out in one of the beds in the Temperate-house, has been for some time in glorious bloom, far surpassing the display usual in pots. Statice rosea, from Natal, in the same house, claims attention for its pleasing colour, unusual in the genus. It has long erect stems with spathulate leaves, and according in habit with Limoniastrum monopetalum of South Europe. The inflorescence is comparable with that of the shrubby hybrids so much valued for pot culture, but having the charm of pretty pink or rose calyces. In No. 4 are fine specimens of Campanula pyramidalis, in white and blue forms, both strikingly effective, the number of stems thickly covered with flowers, varying from eight to fourteen. One specimen in particular with ten stems is quite a floral picture. Passing to the rockwork, among other plants of interest we notice a fine well-berried tuft of Nertera depressa, sometimes absurdly spoken of as the fruiting Duckweed. Senecio pulcher is in good condition, and just expanding its fine flower-heads. Francoa ramosa is extremely pretty, with ample light green foliage; it has slender stems, bearing pink flowers along a considerable length. It is one of the best of rockwork plants, and fortunately is pretty well known. Nardostachys Jatamansi, of great interest as being the Spikenard of the ancients, has recently been in bloom. We have long wished to have this plant in cultivation, and at last the satisfaction arrives by seeds sent from India. The source of this perfume was long unknown, and some doubt has been entertained with regard to this plant, though with full evidence no question now remains. The native women of Nepaul at the present day use oil impregnated with the root for perfuming their hair. It is allied to Patrinia and in habit resembles P. nudicaulis, sometimes found in herbaceous collections. The flowers however are white slightly tinged with pink. Kniphofia Macowani is now charming with two spikes of brightly coloured flowers. Scarcely anything is more showy than Phygelius capensis, both on the Orchid-house wall and in the herbaceous collection. It grows with greater strength in the latter position, where its panicles are of immense size. The flowers are scarlet and tubular. Alstrœmeria psittacina, with red flowers, is now considerably ornamental; it is the only one in flower, having succeeded the beautiful forms of A. aurantiaca. Salvia Grahami deserves a note, continuing to produce its crimson flowers during the whole summer. A short time since we were agreeably surprised to find it growing on the walls of a cottage in a Devonshire village, and it need not be said, with good effect. Salvia farinacea is one to which we draw especial attention. This is the true plant. It has an erect habit and grows 3 feet high; the leaves are glabrous, ovate or lanceolate acuminate and coarsely serrate, on both surfaces numerously pitted when viewed with a lens; the spikes are from 6 to 11 inches long, thickly covered with blue buds and flowers, the latter very brilliant and with two white marks on the lower lip. The spikes, though really distinct, have something the appearance of S. leucantha. Two other plants are about, we believe, doing duty for this. Abromia arenaria and umbellata, with yellow and pink flowers respectively, are extremely pretty trailers in one of the beds. Nepeta macrantha is now in fine condition, and is perhaps the best of its genus. Passing the fine collection of aquatics we notice the new Aponogeton spathaceum still in bloom, Nymphæas candida, odorata, and tuberosa may also receive mention. Escallonia floribunda is flowering profusely on one of the walls, and doubtlessly is one of the most ornamental of the species, though not having the brilliant colour of E. macrantha. Its flowers are pure white, almost like Hawthorn, and with similar perfume, growing in large panicles. Its habit is good, and the leaves neat, with shining surface. It is an Andine species.

Hæmanthus Kalbreyeri, in the Cape house, recently introduced and exhibited by the Messrs. Veitch, is quite unsurpassed for brilliancy of colour. It has lasted in beautiful condition for some time, and now, after showing itself to be a valuable conservatory inmate, is nearly over. Crinum Moorei, of the most noble form and delicate colour, is in the best condition. It has been planted out in quite an exposed position for two or three years, and has attained to great strength, but the flowers are decidedly coarser than when grown in pots. The Victoria regia this year presents a peculiarity not observed in previous years. The flowers, instead of reposing on the water, are considerably elevated above (about 6 inches), and so far, from the time of opening to the time of fading, have not touched the water. The flowers are very fine, and the leaf margins more upturned than usual.

A DRIVE TO DANGSTEIN.

It was a lovely afternoon—just the weather for a drive over the hill and across the wild bit of moorland covered with Gorse and Heather that lies between Hill-brow and the turning which leads to Dangstein Gardens—when a young lady, who desired to interview the head gardener on business (the character of a Sub.), asked me to accompany her. I had often been over these well-known and deservedly-famed gardens, houses, and grounds, but, as I invariably find fresh objects of admiration each time I go there, I was only too pleased to agree to Miss R.'s wish, and, accordingly, we went to Lady Dorothy Nevill's on Wednesday, the 7th. The atmosphere was clear, but there was a sufficient number of light fleecy clouds floating about in the bright blue sky to prevent the sun's rays from becoming too powerful, and they likewise gave a charming diversity of light and shade to the far-away Sussex downs. The heath was a glow of deep rich purple, varied by occasional patches of Bracken, whose fronds were already beginning to assume, in many places, their autumnal tints of brown and yellow; and clumps of tall Fir trees, whose trunks, covered with moss and ivy, afforded a pleasant resting-place for the eye when dazzled by the bright hues of the Heather. On one side of the road there were fields of golden-eared corn—in some the harvest had already began. How those words remind one of Pringle's lines—

> "Around him ply the reaper band
> With lightsome heart and eager hand,
> And mirth and music cheer the toil,
> While sheaves that stud the russet soil,
> And sickles gleaming in the sun,
> Tell jocund harvest is begun."

And inside the hedge stood a belt of Birch trees, whose foliage, quivering in the breeze like so many miniature Aspen leaves, made a deliciously soothing, rustle-like murmur. At length we turned off the highway and into the road leading to the gardens of Dangstein. It would be simply impossible for me to describe the different houses. I do not even know the names of one quarter of the rare plants, Ferns, and flowers I saw in them, but I was struck in the first we entered by a bunch of Bananas in the process of ripening, and the guide told us that some had already been picked for table. The Palms are well represented, so are Ferns, from Tree Ferns

down to the most graceful and newest Maidenhair of this season—a Fern especially pointed out to us for its tiny, exquisitely shaped fronds and slender hair-like stems. One house is entirely devoted to the culture of stove Ferns, cherished natives of tropical climes, which require an amount of heat more than trying to an English constitution, and one lady was obliged to relinquish all further botanical researches. One house was perfumed by Stephanotis blossoms, and another wreathed by the magnificent golden flowers of the Brazilian Allamanda. The Bougainvillea, too, was in full beauty, but the glories of the Orchids were nearly over. We looked at Pitcher-plants more curious than pretty, and pondered over the mystery of insect digesting, as well as catching members of the vegetable kingdom; saw two remarkably fine specimens of the Thorn usually called "Christ's Thorn;" and some magnificent Polyanthes or Tuberoses with creamy white, funnel-shaped, sweet-smelling flowers; and finally went into raptures over some really splendid Cockscombs. I never before saw such brilliant-coloured crests or such broad flattened stems.

There were specimens of all hues, some the old-fashioned crimson colour, others bright canary, various shades of orange and, last of all, an exquisite pale yellow-green—the exact hue of the Lime blossom tint so fashionable, yet so unbecoming, for ladies' dresses last year. Have Cockscombs come into vogue of late? An accident I met with when in town prevented my going to the Botanical *fêtes*, or any other place where there was likely to be a crowd of people, so that I am a very *ignoramus* in respect of all floral fashions.

We saw Grapes and Green Gages, Figs and Peaches of an enormous size, but I invariably hurry away from such temptations, lest I should, not steal, but covet, my neighbour's fruit. I could have lingered long in a fairy-like fernery, where, by the way, there are some white tiles very charmingly decorated by the Lady of Dangstein with paintings of various flowers, and a museum full of different curiosities, some good botanical works, and a book in which all visitors are asked to write their names. Through the gardens we proceeded to the cemetery, where some of Lady Dorothy Nevill's pets are buried. In going to it the guide pointed out a singular tree, which he called "The Maidenhair tree." The foliage was remarkably like in shape to that of the Fern, hence I conclude its English name, but should much like to know its botanical one [Salisburia adiantifolia]. The graves of departed canine friends are beautifully kept. A neat white headstone, on which are engraved tributary lines, marks each resting-place, and I was forcibly reminded of the cemetery at Beacon Lodge, where all the Hon. Grantley Berkeley's favourite hounds, horses, and "dear Gazelle," are placed. I was staying in the neighbourhood of Christchurch some years ago, and the former occupier of Beacon drove me over to see the graves of his once-cherished pets in their burial-ground on the edge of the cliff, overhanging the sea.

These are several Ailantus trees at Dangstein, but I did not see any silk moths: they were cultivated there at one time I know. The green frogs were likewise invisible, but we saw a few very pretty birds. One orange bishop struck me as being remarkably fine, and I am well acquainted with these feathered clericals, for a relative of mine at the Royal Military Hospital, Chelsea, has a family of red and orange bishops in his aviary, but the ecclesiastical dignitary amidst the Sussex downs excels them all. We returned to our quarters at Liss, thoroughly well pleased with our drive to Dangstein. *H. E. W.*

THE STANSTEAD PARK NURSERY.

Few horticulturists have done so much in the way of raising new varieties of some of our hardy plants as the senior partner of this firm, Mr. Laing. I can remember nearly a quarter of a century ago the two types of the Hollyhock—the English variety, small in size but very double, with scarcely any guard petal; the Scotch type, of large size and with an immense guard petal, but the centre not so large as the other. Mr. Laing crossed these two, and obtained an intermediate strain superior to either. Pansies were also grown well, and some good varieties were raised by him at Dysart. But it is at Forest Hill that the greatest amount of work in the way of raising new flowers has been performed. Phloxes and Pentstemons amongst hardy flowers have received considerable attention, and the result has been much improvement in the form and colours of the flowers. At present the Phloxes and Pentstemons are at their best, and very useful they are, either grown in beds or in the mixed borders—any position, in fact, where they can obtain a good depth of rich soil, and do not suffer at any time for want of water at the roots. The Phlox when grown in pots helps to keep the greenhouse gay for a month or six weeks at this season. I grow a number of Phloxes every year in 5 and 6-inch pots. They are raised from cuttings early in March. The cutting-pots are placed in a frame where they can obtain a little bottom-heat, and with a little care they soon make vigorous plants. Our greenhouse at Loxford is now gay with them, and has been so all through the month of August, where they are associated with different species of Lilies, such as L. speciosum, in many distinct varieties; L. auratum, L. tigrinum in variety, of which the tall richly-coloured L. tigrinum splendens is the best.

The Phlox has now arrived at a very high state of perfection, and improvement proceeds but slowly. I fancy the English raised flowers surpass the French in size, and perhaps in form; but the Continental growers have sent out many richly-coloured flowers, and they lack but little in form. I looked carefully over the Forest Hill collection, and noted the names of the best and most distinct in the different shades of colour, and a large proportion are of foreign origin. The following sorts are also distinct from each other:—Norma, white, streaked and curiously marbled with bright red; Retour de la Fortune, pale lilac with white eye; Madame Noiset, pale reddish pink, with deep rosy red centre; Madame Prosper Langier, red, with a dash of purple, crimson centre; Rubens, blush, red centre; White Lady, very pure white; Fairy of the Rhine, white, pale pink centre; Madame Domage, white, rosy red centre; Memnon, light purple, distinct crimson centre; Duc de Montebello, brilliant purplish crimson, shading off to crimson at the centre; Austin Withers, light orange-red, purplish crimson centre; Captain Speke, white, shaded pale purple; Hugh Low, purplish crimson, with crimson centre, large spike; Mons. Quennessen, orange-red, crimson centre; Queen of Whites, large, pure white, some of the flowers dashed with red; Bianca, white, pink centre; Princess of Wales, crimson-scarlet, very bright; Lothair, orange-scarlet, very fine.

I did not notice any of the Pentstemons grown in pots at Forest Hill, but a large bed planted near Mr. Laing's house, and containing all the best and newest of the English and French sorts, was very showy. The Pentstemon is so easily propagated and grown that no garden need be without it. The cuttings should be put in at once, in fine soil, in handlights behind a north wall or any other shady place. Roots are soon formed, and the small plants may then be planted out in a more open space. New varieties are raised from seeds, which may still be sown, and the plants will flower well next year. I went carefully over the bed and noted the best, which were as follows:—Robert White, bright red, with white throat marked with feathery lines; Comedy, crimson-scarlet, with deeper coloured throat; W. P. Laird, pale purple, white throat flaked with purple; W. Rolles Friar, bright red, white throat, streaked reddish crimson; John McPherson, light purple, white throat, streaked with a deeper colour; Egerton Hubbard, rich purple, white throat, purple lines; Lady Coutts Lindsay, pure white; Faust, pale red, distinct white throat; Abel Dennis, reddish purple, rich deep purple throat; Mr. Fenwick, purple, distinct white throat; Mrs. C. Patrick, rich deep purple, streaked purple; Midhat Pacha, purple, broadly-opened white throat; Novelty, rose, base of the throat reddish crimson, upper part blush; Horace Vernet, scarlet, white throat, streaked deep red; Desilles, scarlet, upper part of throat white, base reddish crimson; Riocreux, purple, broadly-opened white throat; Soissons, reddish purple, white throat.

The tuberous Begonias now form a very interesting feature at Stanstead. There are thousands of them, comprising named varieties and seedlings. It will give a good idea of the collection to say that, independently of the new varieties raised by Mr. Laing, there are about 200 other sorts, the largest proportion of them being of foreign origin. A critical examination of the plants shows that nearly all of them have been obtained from B. Veitchii and B. boliviensis, not by selection but by crossing the two species, and the best of Mr. Laing's flowers are four or five generations removed from that cross. The Begonia is very easily propagated from seeds. I sowed seeds early in March, and the plants are now in full flower, and have been so since July. The seeds were sown in heat, and the plants have been grown in a warm house, where the temperature was about 55° or 60° at night. When the flower-buds were formed the plants were placed in a cold pit, with the lights kept rather close for a week or more until the plants were gradually inured to the cooler treatment. Treated in that way, and being potted on as they require it, these Begonias are the easiest grown of plants. They should be potted in good turfy loam about four parts, one part well rotted manure, and one part leaf-mould, with a little silver-sand. Five and 6-inch pots are sufficiently large in which to pot the plants the first year.

The Begonia is also propagated by cuttings, and these strike roots very freely in any close place, with or without a little bottom-heat. In preparing the cuttings it will be necessary to take the cutting or eye at a leaf-bud. The flowers issue from the axils of the leaves, and if the stem is cut at a leaf from which flowers have been removed, the cutting so prepared will root freely, and tubers are readily formed at the base of such cuttings, and they will also grow to a large size, but they are utterly worthless, as no fresh stem will issue from them. To be successful, a leaf that has a growth in the axil must be selected, and the stem must be cut through just under the leaf, and a bulb or corm that is formed there will form the basis of a plant for next season. Many persons have an idea that these Begonias can be propagated at a rapid rate, like Zonal Pelargoniums or the Begonia nitida section, but it is a mistake to suppose so. Some of the very best varieties are the slowest to increase, and they will therefore remain expensive for some time. President Burelle, for instance, the new double crimson-scarlet variety raised by Lemoine, and to which a First-class Certificate was awarded at South Kensington, and which was figured at p. 172, is very slow indeed, merely from the difficulty in obtaining leaves that have no flowers at their axils.

Many of the Continental varieties are very fine; but it is with the Begonias as it is with the Roses—they send out too many. There were quite thirty varieties sent out last year, and as the English growers must purchase the whole of them if they would make sure of getting the best, the expense is a very serious item indeed, either for a trade grower or an amateur. Then their descriptions cannot be depended upon. If you look at a flower, and then read the French description of it, this will be evident to any one who knows anything of colours. One flower is described as "fine golden crimson tinted brilliant carmine," and most of them are either "vivid amaranth, sparkling, fascinating," or "dazzling vermillion." I admit that it is difficult to describe the colours of many of the Begonias, as scarlet and crimson, red, orange, and salmon blend into each other; but there ought to be some bounds to a raiser's enthusiasm.

I went carefully over the collection with Mr. Laing, and selected the following among the older sorts:—W. E. Gumbleton, rich scarlet, the petals obtuse, a large fine flower; Charles Baltet, crimson-scarlet, shaded towards the centre with purple; Purpurea magnifica, crimson-scarlet, veined with purple; Professor Pynaert, bright clear rose, fine large flower; Baynard, orange-scarlet, fine flowers; Massange de Louvrex, orange-red, very large flowers; Baronne Hruby, crimson, suffused with violet at the base of the petals—one of the best; Lucien Peucelle, bright purplish red, large flowers; Vesuvius, orange-red, a fine free-flowering sort; Acme, rosy-red, very distinct; Louis Van Houtte, orange-red, double; President Burelle, one of the best of the doubles; Baronne Léon Leguay, pale rose, distinct and good; Laurent Descours, bright rose, well shaped petals, large flowers; Alexander Lequin, pale orange-red, large flowers; F. Lecointe, bright rose, a most beautiful sort; Adolphe Dubois, creamy white, tinged, yellow at the base of the petals.

Amongst the new seedlings raised this year there are, as has been already stated, many flowers of high-class quality. I noticed the following as the best of them:—Samuel Pope, orange-red, the petals large and well rounded; Rosy Box, fine large flowers, bright rose stained with violet, petals rounded; Francis E. Laing, one of the most brilliant coloured sorts, glowing orange-scarlet; George Thomson, a flower of great substance, the inner petals scarlet, outer rosy-red, a profuse bloomer; Marquis of Salisbury, deep purplish rose, petals beautifully

rounded, free blooming variety; Mrs. Elwes, blush white flowers, freely produced; Thomas Bell, the flowers of this variety are quite round, the petals of great substance; Mrs. Dr. Todd, very bright crimson-scarlet, a most profuse bloomer; Mrs. J. Douglas, bright rose tinged with lake, large, finely shaped flowers. *J. D.*

THE SEQUOIAS.

In the *Gardeners' Chronicle* of August 17 is a notice of the Sequoias, or "big trees." My brother, Mr. Wilfred Marshall, has this summer been on a tour in America, and having paid a visit to these "big trees" has sent me his diary, from which I extract the following notes. *John Marshall, Belmont, Taunton.*

"*Yo Semite Valley and the Groves of Big Trees.*—We were delighted to get so far, as we were so very anxious to see the great Yo Semite Valley, or (translated from the Indian) Valley of the Great Grizzly Bear. There are two ways of reaching the valley from San Francisco: one can either go direct by way of Merced and the Mariposa grove of 'big trees,' or by way of Milton and the Calaveras grove. Though the longer and more tedious of the two ways, on account of the 154 miles staging, we chose the latter, chiefly because it traverses fine forests and fine scenery. We were also spared the plague of American dust, so prevalent everywhere in summer. Both routes enable one to see on the way specimens of those wonderful 'big trees.' Of these there are, I believe, a few 'groves,' five I think. The Calaveras and the Mariposa are the two finest.

"Leaving San Francisco at 4 P.M., at 8 o'clock (distance 92 miles) we found ourselves at Stockton, and put up at the Yo Semite Hotel. The town is chiefly famed for mosquitos; this appears to be their headquarters. Leaving Stockton next morning we arrived at Milton (a collection of a dozen shanties) and took a four-in-hand 'stage' to the Calaveras grove, a distance of 45 miles—the mercury 95° in the shade. When we did arrive there, at 9.30 P.M., it was quite dark, and it was so for the last two hours of our ride. We were thickly surrounded with the apparently interminable Pine forest, trees of enormous size. We could just discern the trunks of two monsters, called the 'Two Sentinels,' as we drove between them and entered the large space that had been cleared away in the forest to make room for the hotel and premises.

"*June* 23, 1878.—It will be impossible in any form of words to convey a true idea of the stupendous grandeur of these great trees. Like, Niagara they cannot be realised unless seen. We have stayed here longer than was our intention; we are tied to the place, in perfect wonder and amazement. The 'grove' lies almost within a stone's-throw of the 'hotel,' and contains between ninety and a hundred 'big' specimens of the Sequoia gigantea, growing out of the thick forest. With few exceptions they stand comparatively near one another, running up as straight as arrows, to the height of some of the highest buildings in the world. Fancy a tree as high as St. Paul's Cathedral, or one reaching to the top of the Duomo at Milan, or as high as Strasbourg's tower or Salisbury's spire! The 'Father of the Forest,' a great prostrate trunk (there are altogether four fallen trees of great size and importance), measures 435 feet in length, and 110 feet in circumference. He must have been much longer when living. Along the inside of the fallen trunk is a tunnel 35 feet long, and in places 8 to 10 feet high. The 'Mother of the Forest,' standing at the further end of the grove, is 327 feet high, and 90 feet in circumference. 'She' stands quite dead and bare, having suffered from the ravages of fire, and is entirely barkless from top to bottom. A great living monster is the 'Pioneer's Cabin,' probably so called from a recess in the lower part of the trunk, big enough to hold a large family party at breakfast. The circumference of this tree 5 feet from the ground is 92 feet by our own measuring. Perhaps the most beautiful of the trees in the grove are three named 'The Three Graces.' They stand only a few feet apart, and with their branches intertwining run up to an almost equal height of 265 feet. The same with the 'Mother and her Sons.' Though they each run up to an equal height, 270 feet, the 'Mother' is 'fat and bulky,' but her 'Sons' by her side are thin and slender. The bark in one of the largest trees in the grove has been removed to the height of 120 feet, and was taken to the Crystal Palace, where it was destroyed in the fire that occurred there some few years ago. Another great tree is called the 'Keystone State,' 325 feet high; its branches begin at 150 feet from the ground. The 'Siamese Twins' are great curiosities. There are two sets of this species of twins in the grove, both sets about 290 feet high, their points of union being a few feet from the ground.

"But perhaps the greatest curiosity is a big fellow, which has been purposely thrown, cut off 6 feet above the ground, and a pavilion built on the standing stump. There is room enough in the pavilion on the top of the stump for a very pretty dance. The surface has been smoothed, and dances do take place thereon. There is space enough for two sets of 'Lancers,' or for sixteen couples to spin round with ease. We measured the dancing space and found the diameter 30 feet less 20 inches; the circumference 85 feet.

"There are many other 'big trees' called by the names of public individuals, such as Richard Cobden, Baroness Burdett-Coutts, Florence Nightingale, John Bright (circumference 80 feet), Sir John Franklin, U. S. Grant, Columbus, George Washington, &c. *Wilfred G. Marshall.*"

THE DOUBLE PINK BRAMBLE.

We give an illustration of this (fig. 44) as one of the very best and most beautiful plants for the wilderness walks, the rootery, or other similar places where free rampant growth, sturdy shoots, effective foliage, and dense masses of beautiful pale rose-pink flowers are likely to be valuable. The double white is hardly less valuable, while of other Brambles of like character we may specify the variegated-leaved Bramble, R. laciniatus, the foliage of which is elegantly cut, and the fruit of which is excellent, and the singular white-stemmed variety known as R. leucodermis, but which is, we believe, more truly R. bifforus. All these are hardy Brambles, requiring literally no cultivation, but in their proper places most effective and beautiful, while R. laciniatus is worth growing for its fruits. For the specimen engraved we are indebted to Mr. Parker, in whose nursery it grows with great freedom.

HERBACEOUS SPIRÆAS.

There are few who do not know our English Meadow-sweet, Spiræa Ulmaria, and all that do know it value it for its beauty and its fragrance. In gardens there is a double form of it, a pink form of it, and a variegated-leaved form of it, but we cannot say that either are improvements on the common wild plant. In gardens, moreover, there are various other Meadow-sweets of great beauty and very confused nomenclature, and the list has been lately added to by the addition of a plant known as Spiræa palmata elegans, concerning which some doubts are expressed. The Spiræas we allude to are S. lobata, S. digitata, S. venusta, S. palmata, and S. palmata elegans, setting aside S. Ulmaria, concerning which there is happily no doubt. We have lately had the opportunity of studying these species afresh in gardens and in herbaria, and we have been kindly furnished with specimens from Kew, from Mr. Parker, of Tooting, and elsewhere. We are, therefore, in a position to be able to clear up at least some portion of the prevalent confusion.

All the species and forms above enumerated are herbaceous perennials and form a distinct section (§ Ulmaria) of the genus Spiræa. All except S. palmata have interruptedly pinnatiseet leaves, that is to say the leaves are very deeply divided in a pinnate fashion, the larger side pieces being arranged in pairs, with numerous pairs of very much smaller leaflets or segments in between. The terminal segment is much larger than all the rest, more or less rounded in general outline, and cut more or less deeply into broad or narrow segments. The upper surface of the leaves is usually glabrous, the lower surface also glabrous, or more or less hairy. In our common S. Ulmaria the under surface is usually white and hoary, though there are glabrous forms of it. In S. palmata there are no side lobes to the leaves or only a few very small ones, but the terminal lobe is large and palmately lobed. Moreover the flowers are of a much deeper crimson hue than is the case with any other species.

As to the foliage of the other species, although it is sometimes perfectly easy to distinguish one from the other by the leaves alone, yet in other cases the forms, as it were, slide so gradually and so completely one into the other that discrimination becomes doubtful or even impossible. In that case, the stipules or small leafy appendages at the base of the leaf-stalk must be looked to as well as the characters presented by the flowers and especially those offered by the seed-vessels. It is very probable that the seeds also differ in the different species as they are known to do elsewhere in the genus, but on this point we have no evidence to offer. Without going into unnecessary detail we may mention the following particulars, which may be useful and serve as a guide or a sketch for others to fill in from their own observations of more complete material than we have at hand.

1. S. Ulmaria, L., is our common English Meadow-sweet, known by its foliage being usually of a white colour underneath, by the terminal lobe less divided than in the others, by its foamy masses of cream-white flowers, and especially by its carpels or seed-pods which are glabrous and spirally twisted when ripe. There is a pink flowered variety, a double-flowered variety, and one with yellow variegated leaves, in cultivation.

2. S. lobata, Murray, *Syst.* 472.—This plant was figured by Jacquin in his *Hortus Vindobonensis*, t. 88 (anno 1770). It is of American origin, being known in the States as the Queen of the Prairies. It is a taller-growing plant than our Ulmaria, with leaves glabrous, or with a few hairs along the nerves on the under-surface, kidney-shaped stipules, loose, many-flowered panicles of pale pink or rose flowers, stamens 36—40, and straight glabrous carpels.

By Linnæus this plant was called S. palmata, but erroneously, as Thunberg's previously named Japanese S. palmata is very different.

The S. venusta of gardens is in our judgment the same plant; if so, the sooner the name venusta is dropped the better. As the reference to the name venusta is not easily found, it may be well to note that the plant was described in Otto and Dietrich's *Garten Zeitung*, No. 32, 1845, and in the *Gardeners' Chronicle* for 1846, p. 23. It was sent out, it appears, from the nurseries of Van Houtte and of Booth. A paler-flowered form is figured in the *Revue de l'Horticulture Belge*, 1877, as S. venusta albicans, and is said to have been a chance seedling from S. venusta, grown in Messrs. Simon-Louis' nursery at Metz.

3. S. digitata, Willd., *Sp. Pl.* ii., p. 1061 (1797), is very similar to the preceding, but the terminal leaf-lobe is rounder, and its segments are more numerous, narrower, and more or less hairy beneath, especially along the nerves. Too much stress must not, however, be laid on the character afforded by the leaves. A better one will be found in the stamens, about twenty in number, and seed-pods, which in S. digitata are somewhat rounded, not spirally twisted, hairy, or even setose. The flowers are pink, or nearly white. The plant is Siberian, and there are two varieties of it, one with glabrous the other with tomentose leaves. This plant, like the preceding, was erroneously referred to S. palmata by Pallas, in his *Flora Rossica*, tab. 27.

The S. kamtschatica, of Pallas (*Flora Rossica*, i., 94, t. 28), is apparently very close to the glabrous form of S. digitata, having setose carpels.

4. S. palmata, of Thunberg (*Bot. Mag.*, t. 5726), differs from all the preceding in the leaves, as before mentioned, in the lanceolate stipules, and in the much deeper pink colour of its flowers. Although it was long uncertain as to what Thunberg's plant really was, as we have seen by the fact that both S. digitata and S. lobata were considered to belong to this species, yet the difference is really so great that now, thanks to Mr. Fortune, the Japanese plant has been introduced, there is no chance of further confusion. S. palmata is the most ornamental of the species now under consideration.

Spiræa palmata elegans, Hort., is a newly introduced form, figured in the *Revue de l'Horticulture Belge* and the *Florist*. It is asserted to be a hybrid between Hoteia japonica and Spiræa palmata. We are bound to believe that the assertion has been made in good faith, but we suspect those who made the assertion have been mistaken. In any case we see no trace of hybrid origin about the plant. The question then arises—what is it? It is not S. Ulmaria, of which it has neither the hoary leaves nor the twisted carpels. It is not S. lobata, inasmuch as it has not the elongate glabrous carpels of that species. There remains S. digitata, of which the present plant has the ventricose hairy carpels. At present, then, we are disposed to refer this newcomer to S. digitata, but we have not yet seen the ripe fruits. If these should in their ripe condition lose their ventricose form and become glabrous, then the resemblance would be greater to S. lobata venusta. Those who have Spiræa venusta need not trouble themselves to grow the form called palmata elegans except for a curiosity, for as an ornamental plant it is greatly inferior to it. All the species should be planted in rather wet soil. On dry ground they do not thrive.

DEVIZES CASTLE AND GROUNDS.

Among the country seats and gardens so graphically described in the *Gardeners' Chronicle*, Devizes Castle, with its Ivy-covered ruins, its grassy moat, and its sloping lawns, has not yet found a place, probably because it lies somewhat out of the track of the usual tourist. Yet this ancient castle, if only from its historical memories, is well worthy of notice, while the grounds and gardens are specially interesting to the



Fig. 43.—The double flowering pink bramble. Nat. size. (See p. 240.)

landscape gardener as showing how much may be done in a comparatively small space. Of the original castle, built by Roger, Bishop of Salisbury in the reign of Henry II., on a conical hill commanding the town only the foundations of the dungeons and banqueting hall of the keep now remain. The old Ivy tower, built probably in the reign of Elizabeth, still stands, and is incorporated with the present picturesque edifice, in the Norman style, built by the owner, R. Valentine Leach, Esq. The drawing-room of the castle is connected by a crescent-shaped stone arcade, hung with basket plants in the intersection of the arches, with an octagonal and dome-roofed conservatory, in the centre of which is a rich group of Mexican and New Zealand Tree Ferns, while around stand Ericas and fine specimens of New Holland plants. A splendid Tacsonia climbs up the north side of the conservatory and covers the roof, its large and rich crimson flowers hanging in profusion over the delicate green of the central foliage.

The garden front of the castle faces to the west, and commands a wide view of richly wooded country. Immediately under the castle to the left lie the ruins of the ancient keep, now thickly overgrown with Ivy and overshadowed by a sloping bank of ornamental shrubs. To the right a fine semicircular lawn occupies the site of the old courtyard of the ancient castle, sloping upwards in graceful curves to the rampart and bastion walks, which are surrounded by low battlemented walls, enclosing the ornamental grounds lying within the moat. Two broad curved flights of steps lead from the archway of the castle terrace to the gateway of the walk overhanging the moat, while a curved flight of steps lead up from the ruins to the bastion which commands them. The lawn itself is bordered along the rampart walk by tall Irish Yews, alternating with golden-headed Yews and other valuable shrubs. Among these a sixteen-year-old Wellingtonia has scarcely its equal in England.

On the upper part of the lawn are six beds of various ornamental designs filled with foliage plants in quaint parterres, while in the hollow of the lawn there is a large bed of trefoil shape of very striking design. The chief plants used in these beds are Alternantheras, Mesembryanthemums, Sempervivums, Pyrethrum Golden Feather, Gnaphalium, Coleus, &c., with Echeverias for the border; their effect is extremely brilliant, being produced thus early in the season by the plants being set thickly in groups instead of singly. The centre of each bed is relieved by a sub-tropical plant, the one in the centre of the trefoil bed being a fine specimen of Yucca aloifolia variegata. This bed alone contains not less than 6000 plants, all of which, as well as those of the other beds, have been reared in the stove-houses of the castle by Mr. King, who has held the post of head gardener with entire control for the last eighteen years.

But the most striking object from the castle is the splendid oblong parterre in the ruined banqueting hall of the ancient castle at the foot of the lawn. Here a space of 73 feet by 23 feet is laid out with a long oblong bed surrounded by a gravel walk. The design of this bed is large vandykes planted with Alternantheras, Pyrethrum, Iresine of various varieties, Coleus, Gnaphalium, Mesembryanthemum, and Echeverias, Dracæna, Ananassa sativa variegata, Phormium Colensoi variegatum, and Palms, and intersected with sub-tropical plants. It contains about 12,000 plants, and the effect of the bed lying in the midst of the Ivy-covered ruins is remarkably fine.

Bishop Rogers' Gateway leads into a shady walk surrounding the castle mound and above the moat, and from this extend many winding and thickly-shaded walks, giving an almost endless variety by means of skilful planting. At the end of one of these walks stands a summer-house, in which Garrick taught Sir Thomas Lawrence, when a boy, to recite scenes from Shakespeare's plays. The kitchen gardens lie on the south slope of the castle mound beyond the inner moat, and are entirely concealed from the castle and pleasure-grounds. The gardens lie on a warm sloping bank, and are laid out in walled terraces covered with fruit trees. Stretching from end to end of these terraces is a range of houses devoted to the growth of fruit, Vines, and flowering plants. The glass is on an extensive scale, measuring on the whole about 10,000 square feet. Four houses are devoted to Vines, some planted within the houses and some without; these last have produced bunches of Black Hamburghs of 7 lb. weight. A Peach-house, 50 feet in length, and an

orchard-house of 100 feet, are this year as usual heavily laden with fruit. For the last fourteen years these houses have carried 1st prizes for "collections of fruit" from various shows. The stove-house is 60 feet long, and is filled with Stephanotis, Ixoras, Rondeletias, Allamandas, and other plants for cut flowers, and among these is to be noticed a splendid specimen of Cocos Weddelliana and Anthurium Scherzerianum. Lastly, there is a large greenhouse, 50 feet long, in which Mr. King grows his Ericas and his splendid Fuchsias, which carried off two 1st prizes and a silver medal in 1874 at the London Horticultural Society.

Notices of Books.

The Plant Lore and Garden-Craft of Shakespeare. By the Rev. H. N. Ellacombe, M.A. 8vo, pp. 303. Printed for the author by William Pollard, Exeter.

Surely no fitter person could have been found to compile such a volume as this than Mr. Ellacombe. In full sympathy with his author he has, what few critics and commentators have, a specially wide and deep knowledge of his subject-matter, plants and garden-craft. It is no wonder, then, that a delightful book has been compiled, and that it is as accurate as it is delightful. Mr. Ellacombe brings to his task, as we have said, full sympathy with Shakespeare, no slight scholarship, and acquaintance with contemporary literature, combined with a knowledge of plants such as few can lay claim to. We are therefore under no slight obligations to Mr. Ellacombe for reprinting his papers from the *Garden*, in which publication they originally appeared. Shakespeare was neither a gardener nor a botanist in the sense of being an expert, but he was both in his sympathies and appreciation, and of all the writers of his time, such as Bacon, Beaumont and Fletcher, Ben Jonson, Spenser, not one possessed so much knowledge of plants and flowers. We are all familiar with certain passages, but we think it will surprise many to find how abundant are the references to plants and to gardens here collected. Mr. Ellacombe has picked out each passage and as it were framed it with an explanatory comment of his own. We are sorely tempted to cite several of his annotations by way of illustration, but we must content ourselves with one, which may suffice to show the author's method of treatment. Speaking of Rue as mentioned by Ophelia, he says :—

"Shakespeare thus gives us the two names for the same plant, Rue and Herb of Grace, and though at first sight there seems to be little or no connection between the two names, yet really they are so closely connected that the one name was derived from or suggested by the other. Rue is the English form of the Greek and Latin Ruta, a word which has never been explained, and in its earlier English form of 'rude' came still nearer to the Latin originals. But 'ruth' was the English word for sorrow and remorse, and to rue was to be sorry for anything, or to have pity. We still say a man will rue a particular action—that, is be sorry for it ; and so it was a natural thing to say that a plant which was so bitter, and had always borne the name Rue or Ruth, must be connected with repentance. It was, therefore, the herb of repentance. This was soon transformed into the Herb of Grace (in 1838 Loudon said, 'It is to this day called Ave Grace in Sussex'), repentance being the chief sign of grace ; and it is not unlikely that this idea was strengthened by the connection of Rue with the bitter herbs of the Bible, though it is only once mentioned, and then in no special remark, except as a tithable garden herb, together with Anise and Cummin."

"The Rue, like Lavender and Rosemary, is a native of the more barren parts of the coasts of the Mediterranean, and has been found on Mount Tabor, but it was one of the earliest occupants of the English herb garden. It is very frequently mentioned in the Saxon leech-books, and entered so largely into their prescriptions that it must have been very extensively grown. Its strong aromatic smell and bitter taste, with the blistering quality of the leaves, soon established its character as almost an heal-all.

> 'Rew bitter a worthy gres [herb],
> Mekyll of myth and vertu is.'

"Even beasts were supposed to have discovered its virtues, so that weasels were gravely said, and this by such men as Pliny, to eat Rue when they were preparing themselves for a fight with rats and serpents. Its especial virtue was as an eye-salve, a use which Milton did not overlook.

> 'To nobler sights
> Michael from Adam's eyes the filme removed,
> Which that false fruit which promised clearer sight
> Had bred ; then purged with Euphrasie and Rue
> The visual nerve, for he had much to see—'

and which was more fully stated in the old lines of the *Schola Salerni* –

> 'Nobilis est Ruta quid lumina reddit acuta ;
> Auxilio Rutæ, vir lippe videbis acute ;
> Cruda comesta, recens oculos caligine purgat ;
> Ruta facit castum, dat lumen et ingerit astum ;
> Cocta facit ruta et de pollicibus loca tuta.'"

After reading this high moral and physical character of the herb, it is rather startling to find that "it is believed that if stolen from a neighbour's garden it would prosper better." As other medicines were introduced, the Rue declined in favour, so that Parkinson spoke of it in qualified praise—"Without doubt it is a most wholesome herb, although bitter and strong. Some do rip up a bead-rowl of the virtues of Rue . . . but beware of the too frequent or over-much use thereof." And Dr. Daubeney says of it :—"It is a powerful stimulant and narcotic, but not much used in modern practice."

The following extract, relating to the oldest of British manufactures, will probably be new to many readers :—"British basket-making is, as far as we know, the oldest national manufacture. It is the manufacture in connection with which we have the earliest record of the value placed on British work. British baskets were exported to Rome, and it would almost seem as if baskets were unknown in Rome until they were introduced from Britain, for with the article of import came the name also, and the British 'basket' became the Latin 'bascauda.'"

We have curious evidence of the high value attached to these baskets. Juvenal describes Catullus, in fear of shipwreck, throwing overboard his most precious treasures—"præcipitare volens etiam pulcherrima," and among these *pulcherrima* he mentions "bascaudas." Martial bears a still higher testimony to the value set on British baskets, reckoning them among the many rich gifts distributed at the Saturnalia :—

> "Barbara de pictis veni bascauda Britannis
> Sed me jam vult dicere Roma suam."

We have one fault to find with this book—"surgit aliquid amari"—it has no index.

Pine Plantations on the Sand Wastes of France. Compiled by J. C. Brown. Oliver & Boyd.

Dr. Brown is truly indefatigable. His object is to lay before the colonists of South Africa, and others similarly situated, the means adopted in various countries of ameliorating the climate, or at least of obviating, so far as possible, the evils effects arising from unfavourable climatic conditions. In this manner we have had from his pen treatises on the water supply of South Africa, on the replanting of disafforested regions in various parts of Europe, on the effects of forests on humidity of climate, on the forest schools of Germany, France, &c., and now we have a work detailing the appearances of the sandy wastes of South-western France, and the mode of planting adopted.

The two Pines principally treated of are the Maritime Pine, or Pinaster, P. maritima, and the Scotch Fir, with its varieties. The culture, mode of extraction of the resin, the diseases and injuries to which they are subject, all receive attention.

A large amount of information is got together—information scattered through a not very accessible class of books. Dr. Brown, therefore, has fairly earned the thanks of those interested in such matters. If, to the table of contents prefixed to his volume he would add an index, the utility would be considerably enhanced.

—— The first volume of the new weekly journal entitled *Brief* has reached us. It forms a condensed history of the times, is well arranged under separate headings, and has the additional advantage of an index so constructed that the references precisely indicate the nature of the matter to which reference is made. The references to occurrences under each heading are in chronological order ; thus indicating the progress of any given event, as well as the current opinion regarding it. To most of the principal events of the period the date of occurrence is appended ; thus an index to the files of all the daily and weekly Press is presented.

The Villa Garden.

Fuchsia Riccartoni.—This is well worthy the attention of the Villa gardener, as a wall or fence plant, or for growing as a bush. It is an old but extremely useful species, with a certain amount of robustness of character that enables it to stand the winter without taking harm. We have just seen a fine plant growing against a west wall in a somewhat damp and sunless spot, where it was planted out about four years ago, and it is now in a full blaze of bloom, flowering with great luxuriance and quite radiant with beauty when the sunlight falls upon the plant. If the blossoms are small in size this is compensated for by the abundance with which they are produced, and it is found most useful for cutting from, as a fair-sized plant will furnish a number of sprays of coral-red blossoms for the decoration of a sitting-room.

Fuchsias are such pretty decorative plants, possessing such a fulness of soft beauty and elegant appearance, that one can but wonder they are so little grown in Villa Gardens. Perhaps it is because attempts have been made which have not answered well. Market plants have been purchased from a costermonger's barrow, and such plants are always pretty well pot-bound when they are sent to market ; these plants are kept in pots for a time till they get shabby (generally the main cause of this is want of water), and then a hole is dug in a border or bed, the plant is turned out of the soil and planted. Plants treated in this way quickly fade and die, and it is not to be wondered at, for, when planted, no friendly and attentive hand loosens the ball of roots which by this time have become hard and matted together, and no more fresh soil is at hand to put in about the loosened roots to give them a start in their new quarters. Were this done, many a plant would be saved for very useful service during the late summer months.

Going back to Fuchsia Riccartoni, it may be remarked that, when once planted out, it grows freely ; and all that is necessary in the way of training when the plant is against a wall is to cut back the young shoots that wither in autumn to the old wood, which will start into growth again as soon as the spring-time arouses the dormant powers of plants into action.

When this Fuchsia is planted against a wall it should alternate or be in proximity to evergreen plants. The Gum Cistus, red Pyracantha, and other evergreens come in well for this purpose, and prove excellent companions to the Fuchsias.

Anemone japonica.—Over against the Fuchsia, and almost forming a foreground to it, is a plant of Anemone japonica alba, or Honorine Jobert, as it is frequently called. The wet spring and summer have suited this fine plant exactly, and it has made a wonderful growth and is now blooming with great freedom. A lady interested in flowers passing along the road a few days ago came upon this plant, and stood like one transfixed with astonishment at surveying for the first time so much delicate beauty in hardy plants. She made eager inquiries as to what it was, and went on her way resolving that it should find a place in her garden. And yet how rarely it does find a place in Villa Gardens. Is it because they are generally furnished in the first place by men having a very restricted stock of plants from which to draw a supply, or a very limited knowledge of the best things to plant ?

This white Anemone is well companioned by the original species with its reddish puce flowers, and the very attractive A. japonica hybrida. We met with these in a country garden a few days ago, growing in an old-fashioned border with remarkable luxuriance, and the mistress of the house said, with great truth, that they were the very best things she could possibly have for cutting from during the summer. After the Roses and Carnations, Picotees, Cloves and Pinks have gone, these hardy Anemones furnish a large supply of blossoms.

Unfortunately there is a little difficulty in getting them sometimes, but nurserymen are beginning to find out that they are the right sort of things to propagate for sale. Never mind if the plants are small so long as they can be got, they will soon grow into size. We have found it best to plant small plants in good soil, and leave them to the tenderness of Nature. In a year or two they establish themselves, and then they take the hearts of plant lovers by storm.

In planting, plant in good stuff. Remember the

importance of a good start. Dig out a good-sized hole to receive the plants, and put at the bottom (if it can be procured) some dried cow-dung, then put in a compost made up of some good yellow loam, leaf-mould, and rotted dung, and also place it about the roots of the plants. By doing this you will ensure the well-being of the plants—you have propitiated Nature, and Nature is never slow to reward the heart that loves and regards her. And when once the plants get well established don't be in a hurry to disturb them. If you want to propagate your stock you will find round about the clumps sundry rootlets thrusting themselves up near to the surface, every one of which will make a plant. Wrench them off and put them into store pots, as one would Pelargonium or Calceolaria cuttings, and in a few days they will begin to grow. Then the grower will have abundance and to spare, and if he be generously disposed, no garden in the neighbourhood need be without these fine perennial Anemones.

Garden Operations.

KITCHEN GARDEN.

The sowing of certain kinds of seeds at precise periods is a matter of concern to those in charge of this department generally, and infinitely so in regard to special subjects, because the ultimate issue materially depends upon this operation being performed at the proper time. In this way two very important spring crops demand attention now, namely, those of Cauliflower and Lettuce; both of these should be sown not later than the 24th inst., and in quantities not only sufficient to meet the ordinary demand for planting out when they are fit, but enough to provide against natural casualties, and to leave a supply of plants in the latter case for pricking out into cold frames or otherwise for transplanting in the spring, should the winter season prove to be destructive. Amongst Cauliflowers we find the Frogmore forcing variety the best for very early work, and therefore these are placed under handlights, or in the most forward positions. The Erfurt and Early London varieties come in next in the order named, the latest kinds used here being Walcheren and Bailey's Selected; the latter, although not yet in commerce, is unquestionably the finest late variety extant. The main point in connection with these tender plants is to keep them sturdy; for this end they should be sown on an open space of ground, and not too thickly, and be transferred to the handlights or frames, as the case may be, immediately the plants can be handled, and after they have taken hold of the soil they should be fully exposed constantly until frost comes, when the plants should be covered. It is an invariable rule with us to provide enough plants for the purpose of planting a border at the base of a south wall, but the planting is, however, not done until after the leaves have fallen from the trees above. As a rule, in ordinary seasons these plants give us some of the best early Cauliflowers we obtain. An adequate supply of Lettuce plants is also prepared for a similar position and planted out identically. In making preparations for winter crops of Lettuce and Endive it should be borne in mind that moisture is the most destructive element to contend with during the winter period; such being the case, means should be taken to counteract the effects as much as possible by having a plane surface so inclined as to pass it away speedily. In very wet places ridges thrown up with slopes at an angle of about 30°, running due east and west, will be found most suitable for this purpose. Autumn-sown Radishes are much esteemed at some places, because the nature of the season renders them more delicate than during the mid-summer months; if so, make a sowing at once of Wood's Early Frame—"a variety still unsurpassed in quality and appearance"—at the base of an east wall, or in a cold frame; so also for salading Mustard and Cress. As occasion requires continue to tie up Lettuce and Endive for blanching. Advanced crops of winter Spinach will by this time need to be thinned out; let this be done before the plants become large, and set them out, firstly, at least 6 inches apart, and, lastly, at about 12 inches, as good individual plants will be found to be more productive than having a few plants massed too closely together. Proceed in pricking out into well enriched places early sown Cabbage plants, and as soon as these are sufficiently advanced transfer them to the appointed places, allowing them at least 18 inches apart every way. Early white-hearted Cabbage is in great request at some places; where it is so much prized special attention should be given to have it in the best possible condition—for this purpose the ground cannot be made too rich. Forward plantings of Celery will require to be earthed up during dry weather; this matter should be seen to now, as in the ordinary course good Celery well blanched should be ready for use next month. The old custom of doing this operation by dribblets is now become almost obsolete, and the more modern and simple method of doing it up almost altogether is supreme. Give frequent attention to the stopping, thinning, and exposing to the sun's influence of out-of-door Tomatos; entirely remove all side-shoots and superfluous growth, and whatever leaves may be necessary for this end. If not already done, the necessary quantity of herbs should be cut, dried, and stored away for winter use. As soon as the crops of Onions are ripe, these should be pulled up, and after a few days' exposure, when they are perfectly dry, they should be stowed away. *G. T. Miles, Wycombe Abbey.*

FRUIT HOUSES.

Ridge Cucumbers I have never known to do better than they have done this season. The sorts we grow are Stockbridge, Rollisson's, and a Telegraph of our own, also a plant of Gherkins, all of which (thirteen) plants, with one or two exceptions, have grown and produced fruit most satisfactorily. I may here remark that during heavy storms (we have had a few) we protected the crowns of the plants against the heavy rains by putting on the top-lights or lids, and thereby probably saved them from canker; and be it understood too that the soil runs slopingly from the base of each plant. The plants should be looked over occasionally and all decayed foliage removed, and the shoots stopped and thinned out where necessary, and all full-grown fruits should be cut regularly and not allowed to remain unnecessarily long on the plants, which I believe is often the cause of the plants "going off," as it is generally called, and in which case the causes are generally "unaccountable," or otherwise attributed to a wrong cause or some mysterious disease: of course it is only the uninitiated in Cucumber growing who reason thus. See that the house in which winter-bearing Cucumbers are to be planted is thoroughly cleansed before the plants are introduced therein. The woodwork should be washed with soft-soap and warm water, the glass with clean water only, and the brickwork and plaster should be scraped if green and limewashed with hot lime, thus making the whole perfectly sweet for the reception of the plants. *H. W. Ward, Longford Castle.*

Melons.—Judgment must be exercised in the application of water either to the roots or otherwise, now that the stage of growth at which most of the plants have arrived, in connection with the state of the weather, will render its application less frequent. Plants in frames, which are swelling their fruit, will need pushing on with all possible despatch, and as the chance of success in ripening this crop satisfactorily depends almost entirely upon the condition of the weather, every opportunity available should be embraced, with the object of achieving a satisfactory; result therefore entrap the sun by shutting up every afternoon, and damping the plants lightly at the same time, and see that the linings are attended to by adding some fresh fermenting material to that already there, and put some mats over the frames at night. Those frames in which fruit are ripe, and approaching maturity, will of course require being ventilated freely during favourable weather, and a dry atmostphere should be maintained to insure highly-flavoured fruits. Stopping, thinning, tying, &c., will, as a matter of course, be duly attended to. *H. W. Ward.*

HARDY FRUIT GARDEN.

Disappointing on the whole as the fruit crops have been this season, the prospects, so far as can at present be judged, are most encouraging for next—the heavy rainfall during the early part of the summer having induced plenty of growth, coupled with a most active condition of the roots. This is not only the case with fruit trees, but applies equally to every other, as must be patent to the most casual observer, the dense and ample foliage, with its luxuriant dark green appearance, being a striking feature just now in the landscape. This healthy condition, in contrast with the languishing appearance vegetation presented a year or two back, shows unmistakably how much the subsoil required the soaking it has recently had, and points forcibly to the necessity of giving fruit trees more water than they generally receive, especially such as are growing in raised borders trained to walls where the sun beats down with such force and robs the soil of its moisture. The Peach and Nectarine of all others are the first to suffer, and more particularly is this the case at the present season if they happen to have a crop of fruit to carry, the finishing off of which is a great tax on their energies, unless the requisite assistance is afforded. Weak sewage or liquid manure renders this in a form the most readily available, but it should not be given to those about ripening, as at that late stage it is apt to affect their flavour injuriously. Those coming in, however, about the end of September and October will be greatly benefited by its use, as will also the trees themselves, this being just the time they are forming their buds, and on the full development of these at this season much of next year's success depends. This being the case, no effort should be spared in helping them on, both in the manner already adverted to, and by copious syringing both morning and evenings on fine dry days, the effect of which is not only very refreshing and conducive to health, but is the best antidote against that worst of all pests to Peaches, the red-spider, an insect which in some gardens is particularly troublesome. Cold water, however, and plenty of it at both root and top, will always keep it in abeyance, and if applied in time will eradicate it altogether.

It often occurs that Apricots and such varieties as the Royal George Peach, and one or two others, become infested with mildew when making their growth, and this parasite, if left to itself, soon cripples the trees to such an extent that they rarely recover. There is no known remedy equal to dry flowers of sulphur dusted on while the leaves are moist with dew, and after it has been on for a few days the best way is to wash it thoroughly off by means of a well-directed stream from the garden-engine, which will cleanse the wood and foliage of the crust of dead spores and dust, and afford a fair chance of their breathing again and getting back into a healthy condition.

Except the plague of blackbirds, that are eating into all kinds of early Pears and Apples, with a voracity that I have never seen equalled before, the most difficult thing the fruit gardener has now to contend with are wasps, that appear to have sprung into existence all at once, and are making up for their previous absence by the most vigorous onslaughts on everything in the fruit way they come near. As a protection against these there is nothing equal to Haythorn's hexagon net, which, with care in use and during the time of storage in winter, will last for many years. It is handiest in pieces of about 12 or 15 feet long by 8 or 10 feet wide, in which sizes it may readily be tacked over a tree, and removed from one to the other as the fruit is gathered, and thus made to do good service during the whole of the fruit season. Pieces of coarse, cheap, damaged muslin that may often be got at large drapery establishments answer likewise; but even with these aids time is profitably employed in tracing out their nests, and destroying them in their homes. To do this there is perhaps no more effectual or expeditious way than soaking a piece of cotton-wool in turps or carbolic acid, and thrusting it tightly into the entrance, and then covering it all up with dry earth so as to exclude air, when they soon become stifled and die. The carbolic acid is, however, a dangerous liquid to handle, and requires care, for if allowed to get on the skin it causes blisters and sores, and the turps is therefore the more preferable of the two. Where these insects are very troublesome trapping should also be resorted to, indeed this is one of the best means of keeping them down, as during the autumn the young queens get out, and are easily seduced into bottles filled with a tempting bait of sugar and beer, in which their fate is soon sealed. Seltzer or common soda water-bottles do admirably for the purpose, and these can be hung about where the wasps frequent, and as soon as they get well stocked emptied, and the liquor used again to lure others in, adding, as an additional enticement, a little more sugar or treacle.

Filberts are now getting to that stage of forwardness when they require the closest watching in order to keep them safe from the pilfering propensities of squirrels, which, if there are any in the neighbourhood, are sure to find them out and carry them off in a very short time. Unfortunately these active little raiders are not to be intimidated, and there is no help for it but to shoot them, for not content with a visit or two, they think of the morrow, and lay by a plentiful store for the winter, thus showing their wisdom and teaching us a lesson. *J. Sheppard, Woolverstone.*

Gardening in Bedford.—A stranger visiting Bedford for the first time cannot but be struck with the pretty character of the town, as trees flourish in all directions. It is a most delightful mixing up together of town and country, to the great advantage of the former. The charming gardens attached to the Swan Hotel deserve especial mention. A broad strip of nicely trimmed grass plat, with many flower-beds scattered about it, runs parallel with the River Ouse for a space of some 300 yards, affording a pleasant lounging place in the cool of the evening, while cross walks lead to the large kitchen and flower gardens, which are also open to the company staying at the hotel. It is sometimes charged against hotel keepers that they pay attention only to indoor attractions, so as to encourage the consumption of drinks; but in the case of the Swan Hotel there is every inducement to come out-of-doors to enjoy a well-kept and deliciously cool garden. If such gardens in connection with places of public entertainment could be extended it would prove a great boon to the community.

THE

Gardeners' Chronicle.

SATURDAY, AUGUST 24, 1878.

APPOINTMENTS FOR THE ENSUING WEEK

MONDAY,	Aug. 26	Last Tower Hamlets Floricultural Society's Show. Mile End and Stepney Floricultural Society's Show (two days). Poplar, Bromley and Limehouse Amateur Floricultural Society's Show (three days).
TUESDAY,	Aug. 27	South of Ireland Horticultural Society's Autumn Show. Banbury Horticultural Society's Show. Pamber and Tadley Horticultural Society's Show.
WEDNESDAY,	Aug. 28	Isle of Thanet Horticultural Society's Show. Beckett Horticultural Society's Show. Sherborne Horticultural Society's Show. Thornton Heath Horticultural Society's Show. Mellington Hall Floral and Horticultural Society's Show. Tynemouth Horticultural Society's Show (two days). Sale of Dutch Bulbs at Stevens' Rooms.
THURSDAY,	Aug. 29	Maidenhead Horticultural Society's Show. Hornby and District Horticultural Society's Show. Wantage Horticultural Society's Show. Sale of Orchids and Bulbs at Stevens' Rooms.
FRIDAY,	Aug. 30	Bishop Auckland Floral and Horticultural Society's Show. Sandy and District Horticultural Society's Show. Montrose Horticultural Society's Show (two days).
SATURDAY,	Aug. 31	Wakefield Horticultural Society's Show.

THE time has now come when, as it appears to us, it is desirable to ascertain definitely what amount of mischief the PHYLLOXERA or Grape-louse has done in the vineries in this country, or, at least, to estimate the probable amount of damage that may be expected from it. Hitherto, following the advice given by such very competent authorities as Messrs. DUNN and DAVID THOMSON, we have, in all the numerous cases that have come under our notice, advocated a "bag and baggage policy," and counselled the destruction of the affected Vines, the removal of the infected borders, a general process of disinfection and cleansing, and a fresh start in the quickest and most efficient manner. Lately, some circumstances have arisen which have suggested the idea that possibly a less heroic remedy might suffice. Where expense is no object the stamping-out system must necessarily be the best, and even in point of time radical measures may prove the best; but there are cases, and those not few, where half measures and a temporising policy may, however objectionable in the abstract, yet in practice be worthy of adoption.

In the first place we would ask, have the effects of the Grape-louse been as disastrous as was once feared? Many of our readers are in a better position to answer this question than we are. We have seen numerous instances of the disease during the last few years, probably more than any others in this country, but naturally our experience has been rather with specimens sent us by other people than with Vines under our own observation. The consequence of this is that in many cases we have no information as to the fate of the Vines. We have testified to the appearance of the louse on the root or on the leaves, and we have given our advice in conformity with the appearance presented; but it is in comparatively few instances that we have heard of the results. For the general good it would be very desirable if those who have suffered from this pest would give us the benefit of their observations. We are led to make this suggestion by the fact that a few days since a bunch of Black Hamburgh Grapes was sent to us as perfect in flavour and appearance as need be. This bunch was grown upon a Vine which we had condemned last year, because affected with Phylloxera, but which had not been destroyed. We have no further history of this case, and know nothing of the circumstances; but we trust careful observation will be made. In another case, where during the greater part of one whole season we had the Vines under our own personal observation, and where every time we visited the vineries we ascertained without doubt the presence of Phylloxera on the roots, we have since ascertained that the crop was so poor and the Grapes were so unripened that they were valueless except for kitchen purposes, and have since been entirely removed.

This case is the more noteworthy inasmuch as, contrary to our recommendations, the Vines were not destroyed in the first instance, but were retained for experimental purposes; and, moreover, the border was periodically soaked, by the advice of a noted Grape grower, with some petroleum-like fluid, with a view of killing the louse. We are bound to say that we found the Phylloxera a few days after the application on more than one occasion, so that the fluid clearly did not reach all the enemies. But in any case there is a great disproportion between the number of specimens that have been sent us of the Phylloxera and the complaints that have reached us. Either the "bag and baggage policy" has been most effectual, or the mischief done by the insect is less than was at first anticipated. We believe that where the roots have access to an outside border the mischief is less, for hitherto we have never seen a root from an outside border affected with Phylloxera, hence we incline to think that the temperature is not sufficient to allow of the development of the insect. Another point on which we are desirous of fuller information is as to whether the insects are ever found on the roots and on the leaves at the same time. This is a point of interest to the entomologist, for, as is known to those of our readers who have suffered from the plague, the root-louse and the leaf-louse are somewhat different in aspect and magnitude. The stages through which the insect passes have been attentively studied by LICHTENSTEIN, BALBIANI, and PLANCHON in France, and by RILEY in America, so that great advances in our knowledge have been made from the time when WESTWOOD first described the insect from specimens sent to him at our instigation from a London nursery.

We are now concerned, however, chiefly with the practical aspects of the case, and in view of its importance we venture to ask those of our readers who have suffered from the pest to communicate the results of their experience, and to specify what they did when they had ascertained the presence of the insect, and what has been the result.

—— NIGHT BLOOMING CACTUS.—The singular and beautiful white night-blooming Cactus, Cereus grandiflorus, as well as the smaller yellow and white C. Macdonaldiæ, flower regularly each summer at Arnos Grove, Southgate, the seat of JOHN WALKER, Esq., which by the way is one of the finest old places about London. The latter species blooms earliest. This season it had as many as thirteen of its singularly perfumed flowers open at once. C. grandiflorus on one evening had three immense blooms expanded, the largest of which when fully open was just 12 inches across. It is somewhat strange that these curious plants are not more usually grown, but the fact may be attributed to their not flowering freely as generally treated; yet there are frequently corners in many plant stoves where the conditions necessary for the production of bloom in these plants exist, and where they might be introduced, especially as where they will flower the generality of blooming subjects would scarcely exist at all. A short account of the conditions under which the Arnos Grove plants succeed will give an idea of what they require. The stove, standing ends east and west, is a wide span-roofed structure; in the eastern corner there is for a few feet a high wall separating it from the shed in which the boiler is placed, and up to this wall, which receives warmth from the chimney-shaft, Mr. GRAVER, the successful gardener here, knowing the natural requirements of the plants, trained them. They are growing in pots some 13 or 14 inches in diameter, standing on a low shelf, but their roots are by no means confined to the pots, as they hang down right to the floor in masses almost as large as a birch-broom, where they imbibe the moisture. They also emit roots freely from the stems above the pots. The flowers are borne at the top, where the plants have reached close up to the roof glass, where it is in summer very hot, and they get the roasting all on through the time their growth is being made essential to the production of bloom. In plant stoves, where such a position as this exists, few more desirable subjects than these could be found.

—— DE CANDOLLE'S "MONOGRAPHIÆ PHANEROGAMARUM."—The first volume of this work has reached us. It is in some respects a continuation of the well-known *Prodromus*, but the orders will not appear in natural sequence, and some of those imperfectly treated in the latter work will be republished in a revised form. The present volume contains the Smilaceæ, elaborated by M. ALPHONSE DE CANDOLLE; the Restiaceæ, by Dr. M. T. MASTERS; and the Meliaceæ, by M. CASIMIR DE CANDOLLE. We shall have occasion to refer to this work again, meanwhile we may mention that it is written on a wholly different and more convenient model than even the later volumes of the *Prodromus*, and it contains nine plates illustrating the floral structure of the orders elaborated.

—— THE PARKS.—Now that the London season is over, and the House wherein unpleasant questions may be asked is no longer sitting, it may be as well to warn those interested to keep a watchful eye over the proceedings of the Chief Commissioner and his subordinates in Hyde Park and Kensington Garden. The condition of the trees is in many cases disgraceful; still more the fact that little or nothing is done, in spite of repeated remonstrance, to preserve the sylvan character of the Park. Over and over again the class journals have pointed out the need for immediate measures, and indicated what they should be—over and over again the columns of the *Times* and other journals have been occupied with indignant protests and sometimes with good suggestions, and yet no good comes of it all. The worst and most audacious maltreatment took place under the auspices of Mr. AYRTON, who diverted walks in a perfectly reckless manner. Some competent landscape gardener and forester should at once be appointed to take the necessary steps to preserve the trees and make new plantations where the old are exhausted. It is perfectly intolerable that our noblest public park should be so grievously neglected and maltreated.

—— THE NEW ZEALAND FLAX.—By the side of the carriage-drive in Messrs. GARAWAY'S nursery at Bristol may be seen growing a very fine example of the New Zealand Flax, Phormium tenax, some 10 feet through. In situations where this plant will thrive it is one of the most desirable subjects that can be introduced—its broad, somewhat erect, spear-shaped foliage, differing in both form and colour from everything else, rendering it a very suitable plant either for a prominent position in the front of shrubs, or as a specimen in grass, or in combinations of mixed fine-leaved plants, especially such as are of a spreading character, to which it would afford a striking contrast.

—— THE HISTORY OF POTHOS CANNÆFOLIA, afterwards named Spathiphyllum cannæfolium by SCHOTT, as a cultivated plant, is an instance of the ups and downs experienced by some members of the vegetable kingdom. It appears to have been first introduced into this country in 1789 by Mr. ALEXANDER ANDERSON, at that time superintendent of the botanic garden in the island of St. Vincent. It flowered at Kew in 1790, as appears from a specimen preserved in the Banksian Herbarium. In 1803 it was figured in the *Botanical Magazine* (t. 603), and it is there praised on account of its ornamental character, and the agreeable fragrance of its flowers. How long it retained a place in our gardens we cannot tell, though it would seem to have been unknown or forgotten by some of the foremost of the present generation of gardeners, for last year it was figured in the *Illustration Horticole*, tab. 269, under the name of Anthurium Dechardi. This year it met with a still greater distinction at Ghent, where it was awarded the 1st prize for a new plant in flower. M. ANDRÉ, who described it in the *Illustration Horticole*, had

some inkling that his plant was a Spathiphyllum, but it was Mr. Brown, of Kew Herbarium, who recognised it as an old plant under a new name, or as a variety of an old species; for while the old Pothos cannæfolia had the spathes green on the under-surface, A. Dechardi is white on both sides. One spathe, however, on a plant exhibited this year was green on the outer side, all the others being white. Moreover, the older plant is a native of the West Indies, the newer one of the forests of New Granada.

—— Apogamous Ferns.—It will be remembered by some of our readers that Dr. Farlow published (*Quarterly Journal of Microscopical Science*, 1874, p. 266) an account of an asexual growth from the prothallus of Pteris cretica. As Dr. Farlow was unable to continue his researches, Professor De Bary took up the subject, and is now publishing the results of his studies in the *Botanische Zeitung*, under the title of "Apogamous Ferns and the Phenomenon of Apogamy in general." De Bary's experience is that Pteris cretica (both typical and the variety albo-lineata) never forms perfect archegonia, or female organs, on the prothallus, or so-called seedling Fern, and is invariably reproduced by budding of the prothallus. Aspidium Filix-mas cristatum and A. falcatum exhibited the same peculiarity in several series of experiments. On the other hand, a large number of species and varieties, including typical Aspidium Filix-mas, &c., always developed archegonia on the prothallus, and were reproduced from an impregnated embryo. Contrary to what we should have expected, garden varieties, which are reproduced almost constantly from spores, are sexually propagated. A variety of Scolopendrium occasionally showed a reversion to the common form, likewise three or four plants out of about 300 seedlings of Asplenium Filix-fœmina Frizelliæ. Spores of ordinary Scolopendrium vulgare, or of any of its varieties, showed a great tendency to variation in their development.

—— Garden Winter Crops.—Though slightly hindering to the progress of the harvest, the recent fine rains have been most welcome to the market gardener, as it has greatly facilitated thr getting out of all the later Broccoli and other winter plants, and put the soil in the best possible condition for the reception of Onion, Spinach, Turnip, and other autumn seeds. The general appearance of the green crops at present indicate an immense abundance of all kinds in the winter, the breadth of Brussels Sprouts especially being very robust and healthy. Last winter the growers had to deplore one of the worst winters known for green produce, as crops were large, and the returns simply wretched. Either there was too much grown, or there was a lack of means amongst the poorer classes, or the tastes of the great masses of the metropolitan residents are changing for the worse. Certainly plenty did not last winter mean profit.

—— Canadian Plants.—Mr. Macoun has prepared a useful addition to the botanical literature of North America in the form of a catalogue of the Phænogamous and Cryptogamous plants of the Dominion of Canada, south of the Arctic circle. We have not seen it yet, but Dr. Asa Gray notices it in *Silliman's Journal*. The range takes in British Columbia. The total number of species enumerated (including lichens) is 3081, whereof 2271 are flowering plants. Upwards of 2900 of the species have been collected in their native habitats by the editor himself. Dr. Gray observes that the remarkable accession to the North American flora which this catalogue records is that of Littorella lacustris.

—— Royal Tree Planting.—In accordance with what is now a common, and certainly a very pretty custom, the Prince and Princess of Wales presided at the planting of a fine specimen Thujopsis dolabrata in the Deanery grounds on the occasion of their recent visit to Southampton, as a lasting memorial of the very interesting event they had been there to take part in. The tree was supplied by Mr. Wm. Rogers, of the Red Lodge Nursery, who superintended the planting. It is to be hoped that this tree will obtain a better fate than appears to have befallen some other Royal memorial trees in Southampton.

—— Heckfield Place Gardens.—It may interest some of our non-professional readers who have not yet seen these charming gardens to learn that Viscount Eversley, with his customary kindness and good spirit, has arranged to throw them open to the public during the whole of the first week in September—that is from the 2d to the 7th inclusive—and applications for tickets of admission should be made to Mr. Wildsmith at the gardens. The nearest



Fig. 44.—The Gardens at Devizes Castle. (see p. 240.)

railway stations are Winchfield, Wokingham, and Reading, and the drive to and from either place is a delightful one. The gardens are just now in the height of beauty, and the bedding perfect. Many novelties of arrangement have been introduced, and even to those who have made many previous visits to the place there are not wanting features of interest, and renewed attraction. Lord EVERSLEY's liberality in this respect might well be more generally followed, to the gratification of the gardeners, and for the benefit of the public.

—— A PRETTY AND EFFECTIVE COMBINATION.—It was a standard plant of Acer Negundo variegatum standing in the forecourt of a villa garden with a tiny circular bed about the roots, and in this bed had been planted a climbing Tropæolum of the Lobbianum section bearing crimson flowers. This had gradually twined itself round the stem of the Acer, and mounted among the branches, mingling its bright-coloured blossoms with the charming creamy variegation of the leaves. The tree, having become well established, did not suffer in the least from the presence of the Tropæolum, and the latter was not in the least starved by contact with the former. This is how it should be. Any plants, such as standard Roses, &c., planted on grass-plats, should be permitted to establish themselves thoroughly before other plants are placed near the roots for the purpose of clothing the stems. It is a common practice to place free-growing plants near them before the trees are thoroughly rooted, and the plants frequently dwindle away and die.

—— THE RAINFALL IN GERMANY. — PETERMANN'S *Geographische Mittheilungen* for July contains a map showing the distribution of rain in Germany for each of the four quarters of the year. The author distinguishes three sharply defined regions of rain :—

1. *A region of prevailing autumn rains.*—This is limited to the west coast, which is under the influence of the North Sea and the eastern coast of the Baltic.

2. *A region of prevailing winter rains.* Restricted to the higher parts of Alsace. Winter rains are also considerable in Lorraine and the Rhine Palatinate.

3. *A region of prevailing summer rains.* This region includes all the rest of Germany, and summer rains are more prevalent, generally speaking, the more we recede west to east and from north to south.

—— PARIS UNIVERSAL EXHIBITION.—One of our correspondents in Paris, writing with reference to the fortnightly show, which commenced on August 16, says : —

"This is without doubt one of the best of the season. The two large sheds built for the purpose were nearly filled, which is a great improvement. Gladioli were plentiful. In the collection exhibited by MM. Souillard & Brunet, nurserymen, of Fontainebleau, I noticed the following very good varieties :—James Veitch, pale red ; Zampa, white striated with pink ; Beatrice, white with a violet border ; Titania, salmon ; Vesuvius, bright red ; Astrée, white, striated dark pink ; Octavie, pale pink, striated darker pink ; Camille, pink, striated light violet ; La Perle, light violet, striated with a darker violet ; Christophe Colomb, pink, striated darker pink ; and last, but not least, La Fiancée, fine pure white, Messrs. Kelway & Co., of Langport, were the only English exhibitors, and their collection consisted of above 120 spikes, comprising many good varieties. Their method of showing them is better than the one adopted here, which merely consists in sticking the spikes in ordinary wine bottles full of water. Messrs. Kelway's method is well known to most of your readers, and needs not to be detailed. Amongst the other exhibitors of Gladiolus I may mention M. Picquenot and M. Torcy-Vannier. The last-named had also a lot of Asters (cut flowers), Zinnias, and Dahlias. M. Chaté showed a collection of Pelargoniums ; M. Crousse, Begonias and Gladioli ; M. A. Berger, Gladioli ; M. V. Durand, fruit ; Lévêque et fils, Dahlias and Phloxes ; and Legendre-Garrian, Balsams. The show of fruit and vegetables was also very fair ; Figs in quantity, and very fine too, came from Argenteuil ; and from Montreuil, Peaches and Nectarines. From Argenteuil, Messrs. Dingremont, Louis Cottard, and Louis L'hérault, sent good collections of Figs, as gathered fruits and as pot trees. Messrs. Croux et fils sent also a fair collection of Plums. M. Chevalier, of Montreuil, staged some very fair Peaches, Nectarines, &c. From Turin came a lot of Italian Grapes, sent by M. François Cirio. Grapes were not plentiful, there being only two exhibitors —M. Rose Charmeux and Mons. Margottin fils. The former showed cut bunches of St. Albans and Foster's Seedling—nothing very remarkable. These were shown in the French way, in bottles. M. Margottin fils showed by the way in which he had grown his Grapes, and also by the way in which he exhibited them, that he has been in England. His Grapes were very fair, and shown also to advantage in the English fashion. The following were the varieties exhibited by him :—Black Alicante, Frankenthal, Bowood Muscat, Madresfield Court Muscat, Black Prince, Muscat of Alexandria, Royal Ascot, Mrs. Pince's Black Muscat, and also a fine plant of Foster's Seedling in a pot, with plenty of fruit on it. There were also some Roses, but these were very badly shown, and presented nothing worth looking at to any one who has seen the English Rose shows. The exhibitors of cut Roses were André Leroy, Margottin fils, Lévesque fils, and Charles Verdier.

"I have at last been able to get into the house in which M. Alfred Bleu exhibits his collection of Caladiums and Begonias. I cannot understand why (the exhibition being open to the public from 10 A.M.) the committee allow an exhibitor to close the house he exhibits in. What would the French say if an English exhibitor was to do so? Amongst the newest kinds of Caladiums staged I noticed M. Linden, an improvement on Perle du Brésil—it has larger leaves, and the ribs, middle and lateral, are pink instead of green ; Mr. Hardy, white ground, dark red ribs, leaves bordered green ; Baronne James de Rothschild, white ground, scarlet veins ; Ibis, rose, a most charming plant, having the same pleasant colour as the bird after which it is named, leaves bordered green ; Eucharis, pink ground, large green border ; Reine Marie de Portugal, centre pink, red veins, border green ; Souvenir du Dr. Bleu, red ground and ribs ; Verdi, red ground, with large green border, leaves undulated — amongst the old variety, Madame Alfred Bleu, Perle du Brésil, Jules Duplessis, Duc de Ratibar, Rameau. In the types of the Begonia Rex, Le Shah, dark green ground, with small white sport ; Varsovie, same as above, but lighter ground ; Louise Chrétien, fine red, quite distinct ; Perle de Paris, white ; Voie lactée, white centre and border green.

"THE INTERNATIONAL CONGRESS OF HORTICULTURE AND BOTANY was opened on the 16th by a gentleman delegated by the Ministry of Agriculture. The attendance was very fair. The first meeting was only a formal one, and did not last more than half an hour. The names of the Vice-Presidents and Secretaries were read, and the proceedings terminated. In the evening the Société d'Horticulture received the members of the Congress at their mansion, 84, Rue de Grenelle, when a very pleasant musical evening was spent. The Préfet of the Seine honoured the company with his presence. On Saturday the first meeting took place at 3 P.M., in the Trocadéro, but the attendance was poor, and the gentlemen who had given in their names to speak on the subjects fixed for discussion were all of them absent. But thanks to Messrs. Chatin, Duchartre, and Edward Morren, we had an interesting discussion on the question, 'Des circumstances qui déterminent la production des plantes à fleurs doubles," without, however, coming to any definite conclusion. On Thursday next (Aug. 22) there will be a banquet, and on Saturday, the 24th, the meeting of the Congress will be closed with a visit to the horticultural exhibition at Versailles, which promises to be of unusual importance.

—— A NEW IRIS.—A coloured figure of a very beautiful new Iris (Xiphion) is given in a recent number of REGEL'S *Gartenflora*, plate 939. It is closely allied to Iris (Xiphion) reticulata, from which it is at once distinguished by having only one sheath around the base of the leaves instead of several. In brilliancy of colours its flowers equal, if not surpass, those of I. reticulata, differing mainly from the variety figured in the *Botanical Magazine* (t. 5577) by the "falls" being tipped with reddish purple instead of deep violet. Indeed there is generally more of the red element in the flowers of I. Kolpakowskiana, as REGEL has named this novelty. This fine species is a native of eastern Turkestan, and is perfectly hardy, producing its flowers in early spring.

—— THE NATIVE GRASSES OF NEW ZEALAND.—Mr. JOHN BUCHANAN, F.L.S., is editing a large illustrated work on *The Indigenous Grasses of New Zealand* for the Colonial Museum of New Zealand. The whole of the illustrations have been drawn from Nature by the editor ; but to insure accuracy of form, so it is stated in the preface, the specimens of the various grasses were lightly inked and faintly impressed on the prepared surface of the lithographic stones. The details were then filled in by hand, together with the enlarged drawings, showing the "anatomical [structural] characters of the inflorescence in each species, all of which are from original microscopic dissections." Parts I. and II., containing twenty-five plates, are before us ; and the work is certainly a very handsome and useful one. Its large size is against it for practical use, but fortunately an octavo edition will be published. It is proposed to reduce the plates by photo-lithography to octavo size. The plates of the present (folio) edition are, to all intents and purposes, nature-printed, and on toned paper. The complete work will contain fifty-five plates. From a cursory examination the dissections appear good, though this is a point of little importance to practical farmers, for whose benefit the work was undertaken. We may mention that the genus Isachne is described as triandrous, whilst I. australis is figured as diandrous, which we find it to be.

—— DEHERAINIA SMARAGDINA.—A very singular plant was lately figured in the *Botanical Magazine* (t. 6373), a plant worth calling attention to in this place. Its chief peculiarity is that it has flat green flowers, which are nearly 2 inches in diameter. The Laurel-like leaves are crowded at the ends of the branches, and the flowers, which look downwards, are clustered immediately beneath them, so that they are scarcely visible from above. This plant has been named Deherainia smaragdina. It is a native of the tropical zone of Southern Mexico, and was introduced into European gardens by Mr. LINDEN'S agents.

—— BEDDING PANSIES IN THE DURDHAM DOWNS NURSERY.—A short time ago we had an opportunity of seeing at the Durdham Downs Nursery, Bristol (Messrs. GARAWAY), a border of some 7 feet wide and of considerable length planted with bedding Pansies that fully exemplified the telling effect which can be produced by the use of these profuse flowering plants when employed alone, even where a large surface has to be covered. They were planted as follows—a broad band at the back some 2½ feet wide, of Waverley, deep blue ; then a row of about a foot in width of Snowflake, white ; next a similar row of Lady Diana, purple ; and in front another broad band of Sovereign, yellow. The burning weather experienced in the West of England, as elsewhere, has put these moisture-loving plants to a severe test this summer, and well they have stood it where the soil was of such a nature as to suit their requirements. Ordinary bedding plants were affected by the almost continuous rainfall and cold state of the ground during May, that so far chilled and stagnated them that they made little progress for some time, and then all at once the intense heat commencing forced many things into a sheet of flower before corresponding growth had been made. In this way much more of the soil is to be met with in an uncovered state than is agreeable to the eye, but the Pansies were not affected in like manner.

—— PLANT NOMENCLATURE.—The attempts to give to plants in flower-show reports in the local press their correct technical names has at all times furnished a fund of amusement for professional readers, matters being considerably mixed when clerical and typographical errors are combined. A recent instance of an attempt to render a name correctly in a provincial paper is amusing for the reason that the reporter seemed imbued with the idea that simplicity of construction must be inexact, and that, drawing from the depths of his own profundity, he would naturally arrive near to the mark. The plant in question was a Cycas, and this the provincialist learnedly converted into Psychus.

—— THE CLEMATIS.—Since the Messrs. JACKMAN introduced their grand kinds of this hardy climber it has become one of the most popular plants of the day, and few indeed are the gardens in which at least × C. Jackmanni is not found. So much has been written about the Clematis that it is difficult to say anything new in reference to it, were it not that now and then, either through the development of some novel idea, or through accident, features of interest in relation to it are brought out. Thus in recently passing through a village in West Middlesex we were struck with the fine effect produced by the training of Clematis Jackmanni over the tops of gate and wall pillars ; the usual prominent excresences of brick or stone being covered with a perfect garland of the rich purple flowers. Hitherto a sparse growth of Ivy has adorned these pillars, and this gave them all through the year a vernal covering, but the addition of the Clematis for the summer months has been a great success, and calls for much admiration. Another excellent

mode of covering a wall with the growth of this fine plant is to grow the plants on one side and carry the strong and latest growth down over the other: in this way, if the plant be grown on the south side and carried over on the north side, the blooming period is greatly prolonged. Another pretty effect is found in a practice, seen about Hampton, of training the Virginian Creeper along the top of a wall, and then allowing its summer growth to fall down on both sides, spurring back in the winter. The Clematis would do well served in the same way, and would look none the less effective if its fine flowers were intermingled with the green leaves of the other creepers.

—— The Bedding-out at Lambton Castle this year, as usual, is very effective. Much less rain fell in the neighbourhood during the months of June and July than in the southern part of the kingdom, and the ground about the middle of the latter month was exceedingly dry and open in large cracks in a way not seen this summer in the southern counties, consequently some things had not made so much growth as in moister summers. In seasons like the present the effects of spring bedding (at this place some 70,000 spring flowering plants occupy the different positions devoted to flower gardening) are apparent, by many of the summer bedders being necessarily later planted. Amongst bedding Pansies, the Tory, deep plum colour; Alpha, bluish purple, and Sovereign, yellow, were flowering in the dry soil profusely. Lobelia St. Martin's Blue, moderately close and compact, is one of the bronzy-coloured leaved kinds, and on that account not so effective when in close contact with other plants as the green-leaved varieties; but, as used here, it was very telling. Harrison's new Musk, as seen at Lambton, is evidently going to turn out an acquisition; as a yellow bedder it was quite as floriferous and effective as any of the freest flowerers of the yellow Pansies. Of Pelargoniums the old crimson variety, Robert Fish, is vastly superior to most of the newer kinds; leaves and truss small, but a profuse bloomer. Mr. Hunter has found the hardy Valeriana Phu to be one of the best coloured leaved plants for spring bedding, during which time the leaves are bright pale yellow. It gets green later in the season.

—— A New Japanese Veronica. We lately saw an exceedingly fine Veronica, grown by Mr. Ware, of the Tottenham Nurseries. It is a native of Japan, and is named Veronica longifolia var. subsessilis. Like the type, it is a robust herbaceous plant, but the specimen we saw was very vigorous, with large, nearly sessile leaves and long dense spikes of deep blue flowers of great beauty.

—— Campanula turbinata Grevei. — Of several dwarf growing Campanulas of the C. turbinata type to be seen at Chiswick, the one named above tops all the white varieties. Plants of it growing in the open ground were strong, remarkably free, and covered with large pure white flowers. It was one of the dwarfest growing of the whole batch. What capital things this and some others are for pot purposes, and also for growing on rockwork, if they are not starved, which too often happens. These dwarf Campanulas merit far more attention than they receive, but it takes a long time for certain plants to make headway. Mr. Barron is doing good service in bringing before the notice of the public many plants of decided value.

—— The Flora of British India.—The fifth part of the *Flora of British India* has appeared. It contains the remainder of the Leguminosæ, the whole of the Rosaceæ, by Sir Joseph Hooker, and carries it on to nearly the end of the Myrtaceæ, which are worked up by Dr. Duthel. We have reasons for believing that succeeding parts will speedily follow, Mr. C. B. Clarke having devoted much time to the elaboration of several orders.

—— The Ivy Green.—Universally known and freely admitted as are the merits of the commoner varieties of Ivy as wall plants, it is singular that the many distinct and beautiful kinds in cultivation are not more generally employed. The strongest growing sorts, such as Hedera canariensis, are no doubt the best for use where a large space has to be covered quickly, as also for giving contrast where several sorts are used. At Wimbledon House there is a wall of moderate height inclosing the frame-ground, pits, and garden offices, covered with several of the best varieties of Ivy; the plain and variegated leaved, stronger and weaker growing kinds, planted alternately. Nothing in its way could look better winter and summer than this wall so clothed, from the variety in colour and form, some clinging close to the bricks, others with longer petioles, bearing their larger leaves further from the surface—the broad-foliaged sorts contrasting admirably with the laciniate forms.

—— Commutation of Tithes.—On Saturday last an Act passed on the 8th inst. to amend and further to extend the Acts for the Commutation of Tithes in England and Wales, was issued. In all cases where land charged with rent-charge in lieu of tithes is taken for the building of a church, chapel, or other place of public worship, the making of a cemetery, the erection of a school under the Elementary Education Act, the erection of a town-hall, court of assize, lunatic asylum, hospital, or any other building used for public purposes, or in carrying out any improvements under the Artisans' Dwellings Act, 1875, the formation of any sewage farm under the provisions of the Sanitary Acts, or the construction of any sewers or sewage works, or gas or water works, the persons to carry out such works are, so soon as they are in possession of the land and before the land is applied to any of the purposes mentioned, to apply to the Tithe Commissioners to order the redemption of the rent-charge for a sum of money equal to twenty-five times the amount thereof, to be paid within the time to be fixed by the Commissioners. The existing powers in the recited Acts from the 7 Will. IV. are to apply to the present statute; and with reference to the exchange of glebe lands for other lands the provisions are to be deemed to authorise any spiritual person (clergyman) to exchange for lands or for tithe rent-charge any annual payment or augmentations belonging to him in right of his benefice, and charged upon or payable out of any lands or tithe rent-charge.

—— The Crab Apple.—Just now, when the Crabs are to be found in fruit in the hedgerows, it may be of interest to note the characteristics of the fruit, and to compare them with the cultivated varieties. Though completely naturalised, it is doubtful whether the Crab is truly wild in Britain. In some cases, we doubt not, it is a degenerate form of some garden variety, the seeds of which have been dropped by birds. In this manner the numerous variations that are met with in foliage, flower, and fruit, may probably be accounted for. We subjoin ths characters of a form common near Harrow. The tree rarely attains 20 feet, and is of bushy habit, with long, slender, ascending branches. The leaves on vigorous shoots measure about 2½ by 2 inches, are glabrous on both surfaces, oblong, abruptly and shortly acuminate, wedge-shaped at the base, and crenate-serrate at the margins. The petiole is slender, about 1¼ inch long. The fruit peduncles are borne on short "spurs," and are erect, spreading, scarcely drooping, each rather more than half an inch long. The fruit is about 1¼ inch in diameter, sub-globose, deeply indented at the base, greenish yellow, thinly speckled with small white spots, and somewhat russety near the insertion of the stalk. The "eye" is prominent, the calyx-segments glabrous (connivent), meeting in the centre, rarely divergent. The calyx-tube is shallow, inversely conical, and the stamens marginal. The carpels or cells of the core are closed, the seeds two in each cell, collateral — oo, or not unfrequently antero-posterior — ⁘. It will thus be seen that the fruit falls into Group A, stamens marginal, of Dr. Hogg's classification. The "eye" is generally closed, but sometimes open, in specimens now before us gathered from the same tree. The position of the seeds is curious. We imagine that in the first instance the seeds are always collateral—oo, but that in process of growth one has slipped behind the other—⁘.

—— Agricultural Returns of Great Britain.—From a summary of the Agricultural Returns of Great Britain for 1878, issued by the Statistical Department of the Board of Trade on Tuesday last, we learn that the acreage of land under Wheat is 3,218,579; Barley, 2,469,694; Oats, 2,699,077; Potatos, 508,451; and Hops, 71,791; showing an increase over 1877 in the case of Wheat of 50,039 acres; of Barley, 52,106; and of Hops, 552; and a decrease in the cultivation of Oats to the extent of 55,102 acres, and of Potatos 4020; though the acreage under the latter crop is still 5732 more than in 1876. The total number of live stock in Great Britain is given as:—Cattle, 5,738,476; sheep, 23,397,274; and pigs, 2,483,437. Of cattle there is an increase over 1877 of 40,543; and of sheep, 236,110; while of pigs there is a decrease to the extent of 15,291. The returns were collected on June 25 in the year 1876, and on June 4 in the years 1877 and 1878.

—— A Large American Aloe.—Visitors to Torquay have an opportunity of seeing one of the finest specimens of Agave americana just coming in flower that has perhaps been met with. The plant in question has been in its present position about twenty-five years, and was put out when quite small. It now measures 10 feet in diameter; the flower-spike at the present time is 30 feet high, and 32 inches in circumference at the base of the spike, with forty flower-branches or panicles, and will doubtless have more. The plant is growing in the gardens of G. Burden, Esq., Marina, quite close to the town, and Mr. Devane, the gardener, will be pleased to show it to any one desirous of seeing this noble example of the vegetable world.

—— Mr. Mechi's Epitaph!—Mr. Mechi tells us (*Agricultural Gazette*) that he has already chosen words to be inscribed on his tombstone. Long may it be ere we read them there:—

2 Chronicles, ch. xxvi., v. 10.
"He loved Husbandry."

They were suggested by an anonymous correspondent.

—— Gardening Appointments.—Mr. Lane is leaving Pyrgo Park, Romford, Essex, to take charge of the gardens of Sir E. Kerrison, Bart., at Oakley Park, where his attention will be chiefly devoted to the cultivation of fruits and vegetables.

THE DOUBLE PETUNIAS.

Only since the advent of the double varieties have Petunias made good their claim to be reckoned sweet-scented plants. The flowers of most of these have been more or less fragrant, but the sap of the plant has been so pungent, and withal so glutinous, that the Petunia was about the last plant any one thought to cut for room decoration, or vase or basket-work. The plants were seldom or never employed for room decoration for similar reasons, and also for the additional one that the flower in shady or confined places proved fugitive. When well grown, however, the single Petunia was always a showy plant, either for the conservatory or in the open air. Such pretty pink varieties as Shrubland Pet, a soft pink, with a white throat and centre, formed fine specimens grown either in bush form or trained over a flat or a semi-spherical trellises. But the single Petunias can never be said to have become popular as greenhouse plants, though the white, pink, mottled, and red varieties were a good deal used for beds and borders. On rather poor soils and in warm situations few plants grow into a finer blaze of beauty than the single Petunia.

The double varieties came in under serious disadvantages; most of them were white or pale in colour, and lanky in habit. I remember the first double Petunias that came under my notice, and my remark upon them—that they were Petunias spoilt. Instead of the bushy habit and moderate growth of my favourite old variety—Shrubland Pet—they had long stems, larger leaves, and a few coarse, monstrous, rather than double, flowers on the top of the plants.

But horticulturists, above all other people, should never despise the day of small things. These monstrous scarecrows were doubtless the direct progenitors of the compact, sweet, beautiful double Petunias that are finding a place to-day in every garden. Sweet as a Clove, and beautifully flaked and mottled as Carnation or a Balsam, is no exaggerated description of the finer types of double Petunias. Their fragrance is one of their most valuable characteristics. Comparatively few greenhouse plants are really very sweet, and yet the desire for perfume in flowers is universal. Every one by instinct instantly applies flowers to the nose, unless experiment has previously informed him that they are scentless. This proves beyond dispute how highly the satisfaction of the sense of smell is prized. Scarcely any plant grown, not even excluding the Heliotrope and the Rose, is

more delightfully fragrant than the finer strains of double Petunias.

Their beauty is also very striking, covering the whole range of colours from pure white to crimson, through all the most delicate and soft shades of lilac, purple, and rose. The petals are also much laciniated and deeply fringed, and the colours mixed and distributed in a mingled and irregular manner. No doubt the latter quality forms a fault in the eyes of many. Excepting in the case of well-established selfs you are never sure what any particular Petunia bud may develope into. It may come like the other, it may revert to some primitive Petunia type, or advance into some new form. Their vagaries and endless varieties of colour but add to the beauty of the flowers and plants for decorative purposes. No doubt they are provoking to those who may be attempting—and this attempt is likely ultimately to succeed—to raise the Petunia to the stability and symmetry of a florists' flower. That, however, is still a matter for the future. At present the Petunia is as sweet as a Clove, and almost as richly marked as a mottled Balsam.

The flowers are also large and massive. There seems a rich prodigality of petals piled on over or beside each other, as if the plant were at a loss where to stow away its excess of floral beauty; and the result is flowers of great size, and in continuous succession throughout the season. The habit of the plant has also been vastly improved, though it must be confessed the latter is very much a matter of culture. Still no skill in cultivation or training could have moulded the old lanky Petunias into the dwarf dense masses becoming common in the gardens of to-day. Perhaps the best form for these plants is that of dense bushes on the model of fancy Pelargoniums, or bulbous-rooted Begonias, when well done. Such varieties of the latter, for example, as Vesuvius, boliviensis, and intermedia, from 2 feet to a yard through and as much or more high—almost covering the pots—are among the richest and most brilliant of all decorative plants. Well, double Petunias may be moulded into similar specimens, and become equally beautiful though not so brilliant.

The great point is to select young short-jointed wood for cuttings; small side shoots, if such can be found, are the best. Put these in a cold close frame near to the glass any time during the summer or early in the autumn. If in summer, grow the plants right in the sun or the open air as soon as rooted. Stop at every joint until a dense squat mass of a dozen or so shoots is obtained. Winter near the glass in a temperature of 45°, giving little water and guarding against damp on the leaves or around the collar of the plants. These plants may be shifted into the flowering pots early in January or February, and placed in a temperature of 50° or 55°. They will thus grow very rapidly and flower in April or May if wanted, and prove invaluable at that early season. As to soil and size of pots, two parts loam, one of leaf-mould, and one of two-years-old cow-dung well decomposed, with a sprinkling of sharp sand, suits Petunias well, and 8 or 10-inch pots should never be exceeded.

Autumn-rooted cuttings should be wintered on shelves near to the glass, and will come in for succession. Cuttings should also be put in in the spring, and again in the summer, so that several sets of flowering plants may be had in the year. The early plants may, indeed, be cut back and forced to flower again late in the autumn. But on the whole young plants full of new life and vigour are to be preferred, as the collar of the old plants is apt to rot off or give way just when a break-down is least desirable. For the same reason no one should ever attempt to winter old Petunias, double or single.

Not only are specimen double Petunias most useful in the greenhouse, conservatory, or window garden, but their flowers are among the most valuable and durable for cutting. They are admirable for centres of bouquets, and some of the smaller ones for filling up or finishing the same. Though rather large they have also a rich and pleasing effect in glasses for each guest at the dinner-table. In flat baskets, vases, glass dishes, &c., double Petunias are admirable. Petunia leaves are used to go with the flowers. Ferns, Lycopods, small Caladiums such as Argyrites, Gymnostachyums, Tradescantias, &c., form admirable foliage for the flowers of double Petunias. The flowers are well-nigh imperishable, and will keep fresh a week, a fortnight, or more, if the water is changed and the flower-stems cut afresh daily; but it is seldom desirable to pursue a floral arrangement beyond a few days, or at most a week, as one of the chief merits of cut flowers and plants in pots is the facilities their portability affords for the frequent change of arrangement and disposition of beauty.

The plants under careful culture also continue long in health and beauty in pots. The pots should he well drained, as, though Petunias are greedy of water in a growing state, yet stagnation at the roots is almost immediate dropsy or decomposition to the stem, and consequent death to the plants.

Petunias enjoy guano or sewage water when growing and flowering freely. Greenfly are rather fond of these plants, and the moment one appears it should be picked or brushed off, or the plants fumigated; for once it gets a footing it spreads rapidly, and speedily disfigures, disables, or destroys the plants, but under favourable conditions few plants continue more free from insect pests than double Petunias, while none respond more quickly to skilful treatment, nor yield a richer reward at less cost. *D. T. Fish.*

THE ROYAL HOSPITAL, CHELSEA.

How few there are in the country—ay, even in the borough of Chelsea—who know anything of the beautiful gardens attached to the Royal Military Hospital

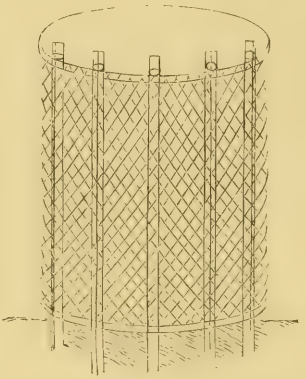


FIG. 45.—A COLUMNAR BED OF PELARGONIUMS.

—that noble refuge for aged warriors; and yet flower gardening is carried out there in a style that is really remarkable for its excellence—position and climate being taken into consideration. The terrace garden is one of the most remarkable and extensive that we know of, and the bedding-out is well deserving of



FIG. 46.—A CARPET BED: "THE BRUNSWICK STAR."

honourable mention in the *Gardeners' Chronicle*. This terrace garden is 280 yards long, and faces the officers' quarters—on the south front a broad expanse of grass with two slopes running the entire length, divided into four parts by a broad walk in the centre and two narrower ones at about a third of the distance from each end, with a straight boundary line, composed of a border of mixed trees and shrubs forming the background.

By the side of a gravel path running parallel with the edifice are a number of ornamental vases filled with different varieties of Zonal Pelargoniums, then come two broad stretches of well-kept grass, the slopes connecting them being intersected by stone steps. The floral embellishments then commence on the lower level, and consist of a series of sixteen beds disposed in a line, at equal distances apart, the entire length of the lawn. Six of these beds are oblong in form, two of them oval, and eight round, and all are planted in pairs, almost similar in detail, so that only the contents of one set of eight need be particularised. The first bed from the east end is a circular one (measuring, as do all the others, 17 feet 6 inches over), containing broad lines of Veronica incana, Golden Feather Pyrethrum, and Pelargonium Waltham Seedling, the innermost one enclosing six sharply pointed ovals, converging on the centre, of Perilla nankinensis, with Centaurea candidissima for a groundwork. Then follows a small oblong, with Roses in the centre, and bordered with an outer line of Stellaria graminea aurea, and inward ones in the order given of Lobelia Blue King, Pelargonium Lady Plymouth and P. Amaranth. Next in order comes another circle—a sub-tropical bed with several plants of Acacia lophantha, Abutilon Boule de Neige, and A. brasiliense in the centre, and then lines, counting outwards, of Abutilon niveum aureum maculatum, Pelargonium Serena, Pink Veronica Andersoni variegata, and Echeveria secunda glauca; the whole being dotted with Amaranthus melancholicus ruber and Gladiolus brenchleyensis. The character of this composition may be described in two words, "exceedingly effective."

A gravel path divides the lawn at this point, and the next section contains five beds, the central one of which is an oval, flanked on either side by a circle and an oblong. The oval bed contains Roses surrounded with rows, counting inwardly, of Cerastium tomentosum, Tagetes aurea floribunda, Pelargonium Christine and P. Cybister. The two oblongs also contain Roses, with an outer border composed of lines of Stellaria graminea aurea (outer), Pelargonium Manglesii, Calceolaria Prince of Orange, and P. Madame Vaucher.

Of the two circles one may be described as a novelty, and the other as a perfect example of carpet-bedding. The novelty consists of a perfectly clothed tower or columnar bed of Pelargonium Daybreak, 7 feet high and 3 feet 6 inches in diameter, surrounded at the base with Pelargonium Bonfire, scolloped with Pelargonium Creed's Seedling enclosed with a line of Ageratum Countess of Stair, and an outer formed of two rows of Echeveria secunda glauca, set in a carpeting of Sedum glaucum. Fig. 45 shows a section of the tower before being planted. There are eight posts in all, firmly driven into the ground, at equal distances apart, around which wire netting is fastened, partly to keep the posts perpendicular, and partly to form an embankment for the compost, the most turfy parts of which are placed outside. When the planting is being done, the wires are placed where necessary, and pulled outwards to admit of the plants being placed in position, and are afterwards pressed back again into their place. Five hundred plants of the white variegated Pelargonium Daybreak were used; and the column is surmounted by a medium-sized Yucca surrounded with the Paris Daisy, Chrysanthemum pinnatum. There are two of these towers on the lawn, aud they are certainly very appropriate and very effective.

The panel carpet bed (see fig. 46) is somewhat similar in design to the Brunswick Cross, a famous military decoration, and is composed of six different plants—1, Echeveria secunda glauca, set in a dense carpet of Sedum glaucum; 2, Alternanthera magnifica; 3, Pyrethrum Golden Feather; 4, Alternanthera amœna; 5, Mentha Pulegium gibraltaricum; and 6, Kleinia repens.

In front of the shrubbery which divides the private from the public garden there is a broad border which runs the entire length (280 yards), and this has been furnished with flowering plants in a bold and very effective style. The first line is a broad one of Cerastium tomentosum, then one of equal width of Lobelia speciosa. The back line is composed of Pelargonium Lucius, the space between being filled with half circles of such plants as Pelargoniums Amaranth and Bonfire, Calceolaria Gaines' Yellow, Dell's Crimson Beet, &c., with a continuous scolloped line in front of Pelargonium Crystal Palace Gem, and sections filled in with Pelargonium Daybreak.

There are one or two other features of interest in the grounds of the Royal Hospital, thanks to the encouraging support which all and everything connected with the garden receives from Major-General Hutt, the executive representative of the Hospital Commissioners, and to the excellent management of the gardener, Mr. William Gibson, but these we must defer to another occasion.

Home Correspondence.

Violas in Wet Seasons and in Dry Ones.—The total failure of Violas in many districts this season where they did well last year is a misfortune to gardeners, and a source of disappointment to their employers. To such an extent indeed is this the case, that one almost feels concerned for the future of Violas, notwithstanding their undoubted popularity as flower garden plants; certain it is that, however decimated they may have been by disease and drought (the former, no doubt, the result of the latter accompanied by intense heat), their other accommodating qualities and characteristics are too well known to admit of their being discarded in any appreciable degree from the position they still deservedly occupy. Writing from the wettest county in England, it is open to comment whether, if they do not succeed in Lancashire, where else they could reasonably be expected to thrive? This would be very fair comment if there were no other features to be taken into consideration. I am, however, convinced that the nature of the soil, and the situation they occupy, has as much to do with their success or failure as anything else. Last season Violas were good everywhere, because there were no periods of dry weather long enough to impede their growth till they had become established and furnished the necessary shade to their roots, which they so much enjoy. They delight in comparative shade and atmospheric humidity. Planted in a rich, open soil, in a moist situation, with drizzling showers at intervening periods, they are pleasingly beautiful; whilst the absence of any one of these elements has the contrary effect in proportion to its intensity. Thus we learn by careful observation how far it is prudent to depend on any class of plants that is not adapted to particular soils and situations. With regard to our climate, which does not enjoy an enviable notoriety, I may say that it is, generally speaking, favourable to the growth of Violas; but our soil (I mean in the garden here) is both sandy and porous, and consequently evaporation takes place much more rapidly than in soils of a more retentive nature. In addition to this the rainfall is heavy during the spring months, and vegetation is so soft that it cannot withstand sudden extremes of weather like that made under more favourable conditions of soil and climate. The present season has been an exceptional one; let us not therefore discard old friends because of one misfortune, but try to find consolation in the lesson which is so obviously patent to any one who cares to study and derive benefit from providential visitations. These things never occur without leaving people wiser for the future, and the remedy in this case is clear indeed, in the selection of soil, situation, and routine treatment. All our Violas that were not specially cared for disappeared during the hot weather, but those that were planted in a preparation of leaf-mould and soil, and were protected by walls or trees from the fierce rays of the sun, are now in a vigorous growing state and flowering profusely. *W. Hinds, Otterspool.*

Shading.—It has been stated in this controversy that many Orchids require sunlight, and are found growing in the full blaze of the sun, and not under shade. Now it does not follow that because they are found growing in the full sun that that position is the best suited to them. My experience in Jamaica is altogether to the contrary, for I find that here, although many are found growing fully exposed to the sun, that myriads are found under deep shade. Compare the two together, samples of each; for instance, I have before me now pieces of Broughtonia sanguinea, one of which has been exposed to full sun, the other in deep shade. The difference is this: the one growing in the sun is healthy in every respect, but the pseudobulbs are small, light coloured, and shrivelled, which aspect is not altered only for a short time during the rainy season, when the bulbs assume a fuller appearance. The flower-spike is short, the flowers opening by ones and twos, and then dropping off. The one growing in the shade has its pseudobulbs of full appearance, of a deep green colour extending to the leaves, flower-spikes twice the length of those exposed, flowers larger and more open at one time. This is not a single case. In searching for Orchids here where do we find them in the best condition? In the ravines and gullies, on the sides facing the North, by the river sides, where the water, dashing from rock to rock, produces a spray which is continually bathing them with moisture, and where the sun only reaches them for a short time during the day, and then through a thicket of overhanging branches. It must not be supposed that from this description they require no light, for light and shade in Orchid growing are the two great essentials. Give them as much light as possible, but let not one direct ray of the sun touch leaf or blossom. This is effected here by reflected light, and an imitation of this will probably be the nearest approach to perfect success in Orchid growing in England. *J. H.*

Berberis vulgaris.—I notice that Mrs. Watney, in her remarks on Berberis, mentions that a prejudice exists among farmers against growing what they call "the Pepperidge bush," through its being supposed to have introduced or generated the rust on Wheat, but it would be a pity if such a notion were to stand in the way of a more extended cultivation of such an ornamental plant as Berberis Darwinii, which would do much to brighten up many a hedgerow and farmhouse garden. In the eastern part of England, too, Berberis vulgaris is known under the name of Pepperidge, and is in great request among knowing dames and quack doctors as a certain cure for jaundice and other liver complaints. Judging from the intense bitter of its bark it may have valuable medicinal properties that would make it worth growing, but with so many other vegetable febrifuges now used, such as Cinchona, Quassia, Sassafras, Gentian, &c., so easily attainable, it is not likely to take a place in the dispensary at present. *J. S.*

The Olive Tree Hardy in England.—It may perhaps be new to many of your readers, as it certainly was to myself, to learn that such is the case. Those who are interested in the subject may be referred to Mr. Ellacombe's charming book on *Shakespeare's Plant Lore*, which should be in the hands of every admirer of the poet and lover of plants. They will there find many curious and instructive remarks relating to this tree, with evidence that it has been cultivated in the open air in this country for more than two centuries. *G., Bath.* [A fruit was produced in the late Mr. D. Hanbury's garden at Clapham a few years ago. Eds.]

Fumigators.—I have tried most of the fumigators now in use, including Tebbs', Appleby's, and the fumigating bellows, but up to the present time I have not seen anything that can match the "Chatsworth Evaporising Fumigator." It is perhaps rather more expensive than the above, but I find that it consumes less tobacco-paper, and does its work much more effectually than any other apparatus I have previously used; it is also exceedingly well made, put together with the best material, and consequently not liable to get out of order or wear out for years. I find it easy to kindle, and there is no need for the presence of the operator, as it is entirely self-acting, and can be used either in dry or damp weather with safety. *Operator.*

—— I have found a fumigating pan sold by Messrs. James Dickson & Sons, Newton Nurseries, Chester, to be a really good, cheap and a most efficient one. *Robt. Milne, Vale Royal Gardens, Northwich, Aug.* 14.

The Manhattan Potato.—In my report on the Potato crops, which appeared in your issue of August 3, I mentioned two new sorts that were looking well. I lifted both the other day, and I must say that the one named Manhattan has far surpassed my expectations as to quantity and quality. One tuber that I cut up and planted produced 130 fine large Potatos. In shape it is oblong, and in colour something like Fortyfold. I am inclined to think that it will rank amongst the best second early Potatos in cultivation, and, so far as my experience goes, it will be invaluable as an exhibition variety, being so distinct in appearance from any sort that I am acquainted with. *James Dickson, Arkleton, Langholm.*

Scurvy of the Sea.—I thought that the "Scurvy of the Sea" mentioned by "Guernsey" had been pronounced to be the Glaux maritima, sometimes locally called "Black Saltwort" and "Sea Milkwort," whose small fleshy leaves are often pickled, otherwise I would have forwarded a short account of the virtues of the Scurvy-grass, which, as "J. M., Dublin," truly says, grows abundantly on the seashore as well as in alpine districts far inland. Gerard used to call this plant "Spoonwort" (its generic name comes from *cochlear*, a spoon). It is a singular fact that Scurvy-grass grows most plentifully in places where this terrible disease is rife. Foster mentions having found an abundance of it in the South Sea Islands, but the natives did not know its virtues until the English navigators showed them how to use it. Herbalists were wont at one period to cultivate the plant. They used to sow the seeds in the summer in drills, and prepare the expressed juice in the following spring. It formerly ranked very high as an antiscorbutic, and the inhabitants of Iceland make a great many different kinds of dishes of it. They use it with acidulated milk, and pickle it in various forms with layers of salt and aromatics. I am told that our English medical men always prescribed it to sailors after a long sea-voyage mixed with the juices of Woodsorrel and Watercress, or a Lemon in former days; but now medical science has advanced, and herbs are going out of fashion; though, as a writer in *Cassell's Magazine* remarked a few weeks ago, few are aware of the really valuable qualities to be found in some of our much-neglected native plants, and I for one think that there should be a "doctor's corner" in every garden. *Helen E. Watney, Berry Grove, Liss, Hants.*

Araucaria imbricata.—There is a fine specimen of this tree in the grounds here, bearing on the top twenty-seven large cones, which are now quite ripe. I gathered one of them the other day, thinking we should be favoured with a good batch of seed, but I am sorry to say we found all bad. *John Sowray, gr. to T. Gambier Parry, Esq., Highnam Court, Gloucester.*

Peaches and Nectarines Growing on the Same Branch.—On a Peach tree here which is ripening off about twenty dozen of good fruit there is growing on one of the branches a perfect fruit of a Nectarine and two Peaches, about 6 inches apart. I believe this is a very uncommon occurrence, and should be glad if any of your readers would explain the cause of its appearance there. Can the bees have had anything to do with it? *John Sowray, gr. to T. Gambier Parry, Esq., Highnam Court, Gloucester.*

Another Good Yield of Potatos.—On August 19 I lifted a crop of Sutton's Magnum Bonum Potatos off 52 square yards, and had 9½ bushels of good sound tubers without a single one diseased. Such a crop has not been lifted here for nearly twenty years. We have over twenty different varieties, but I think this is the best and heaviest cropping one. *A. J. Oxford, Rushton Park, Battle, Sussex.*

Peristeria elata and Cattleya crispa.—These two Orchids are now amongst the most useful flowering plants of a choice kind which we have. Every year about this time they seem sure to flower, and though they are both beautiful and interesting, more especially perhaps the former, they are here more worthy of being mentioned, as this is comparatively a very dull season for flowering plants in the stove. Of the Peristeria we have seven good spikes, the best of which have about two dozen flowers and buds, and by the time they are in flower at their tops we shall have had the plants in flower a full month if not more. Cattleya crispa is a first-rate plant for a stove, whether an Orchid-house be at command or not, and if choice cut flowers be highly prized every one of this plant will be found useful, as it will do for almost any purpose. We have only one plant of this Cattleya, and it has just flowered, having had about a score of flowers on, all of which we have found valuablef or bouquets, glasses, &c. I send a flower or two, which may be acceptable to you. *R. M.*

Monarda didyma.—It is true this plant likes plenty of sun, but it must have plenty of moisture too. On this hot, dry, chalky soil, it as a rule refuses to grow, but this summer, having had copious showers and plenty of sun, it has done well. I never saw a white variety of M. didyma. I have several times had a white-flowered species, but totally distinct from M. didyma. *H. Harpur-Crewe.*

The Gardener's Difficulties.—"Hope springs eternal in the human breast" is your most apposite comment on our meagre fruit crop. And it is well it is so, else would all fruit growers hie away to Bedlam or Cyprus at once. Only look at the vicissitudes of this season alone. December in April and a dash of it mixed at intervals with our summer ever since. A long cold spell of dull weather suddenly interrupted by a month's outburst of tropical sunshine and drought; this again succeeded by cold, floods, and tempest in various places. The drought and the scarcity maddened the birds into a kind of ravenous frenzy. Nothing was safe within their reach, from fruit to greener vegetable; luscious Strawberries and Cherries were varied with a full diet of green Gooseberries and Currants, and when the latter failed a full feed of sweet green Peas. No sooner did the Apricots begin to swell, or Plums, or Apples, or Pears to show colour or other signs of maturity than the birds were down upon them with bills preternaturally sharpened and alarmingly numerous. Just as the rains, the traps, nets, and guns, somewhat weakened our feathered foes or lured them off to other pastures, out have swarmed countless hosts of the most ill-favoured, ill-mannered wasps that ever were seen. These are, it is to be hoped, the last, as they are by far the worst plague of a season that has been full of plagues to cultivators. The old-fashioned wasps were quite respectable and harmlesss compared to those of this season. These literally fight with one for their prey, our fruit. In gathering Apricots the other day, there were wasps in front of us, wasps to the right of us, wasps to the left of us, and wasps to the back of us. Plums are equally infested; a few of these being ripe, the wasps amuse themselves with a tasting bout, which threatens

to ruin the crop. Ripe Grapes and Peaches under glass are also held to be the lawful prey or prize of the wasps. They eat their way through canvas, fine nets, cheese-cloths, &c., and indulge in the most noisy and determined warfare to hold and consume the choicest fruits in the presence and against all the efforts of the cultivator. Possibly the general scarcity of the fruit drives the wasps to desperation; certain it is that they are far more troublesome, though perhaps not more numerous than usual. We are vigilantly hunting for nests in all directions, and tarring-in these golden enemies as soon as found. I have spoken of wasps as the last enemies of the season, but no doubt the blue-bottles will come on the heels of the wasps, and as the fields are being cleared of corn, hordes of rats mostly find their way into the garden. A short time ago the rats had an Apricot feast, the next evening they preferred a change of dessert, and scooped out a huge Queen Emma Melon, leaving nothing but the rind upstanding like an empty shell; on the the third night they tried the Grapes. But all these have paid the just penalty of their misdeeds with their lives. But one trembles to think of the way the endless succession of these thieving rogues, trooping into gardens in dozens and dozens from the bare fields, bent upon undermining our fruit and root stores, and living on their all too scanty contents, if possible, all the winter. There ought to be a general law to enforce the destruction of such vermin. In nine cases out of ten, where game is preserved, so also are rats and mice; and the latter not seldom to such an extent as not only to render the lives of gardeners in private places well nigh intolerable, but also to inflict most serious loss on whole districts and large communities. It is hardly possible to exaggerate the extent of the evil that is worked in gardens so unfortunate as to be placed near to a farm on an estate overrun by vermin. *D. T. Fish.*

The Potato Fungus on the Tomato.—I regret to have noticed here already abundant evidence of the action of the Peronospora infestans on the outdoor Tomatos; on many of the plants the leaves are greatly spotted, in some cases the stems are partially blackened, and in others it has got so far as to have already rotted young green fruit. In the latter instance the fungus penetrates the rind of the fruit direct from the outside and not through the stems, as is seen usually in the Potato. Although this development on the Tomato is nothing new it is interesting to note it inasmuch as it affords the most conclusive proof that the fungus is atmospherically propagated, and that all kinds of root treatment, as so often prescribed for the Potato tuber, are valueless. It would be absurd to assume that the fungus is inherent in the seed of the Tomato; if it were, it would develope itself under glass. As with the Potato it is only when weather adapted for its propagation takes place that we find it affecting the plants. Tomatos, I fear, are not likely to be abundant this autumn. *A. D.*

Hyacinthus candicans and Gladiolus.—Noticing the remarks at p. 86 by Messrs. Krelage & Son, Haarlem, on the above, I was reminded of a very effective and good contrast I had with Gladiolus brenchleyensis and white Sweet Peas when I was gardener to the Earl of Harrington at Elvaston. These were here and there along a mixed border in the kitchen garden; the Peas a mass of white to look from the end of the border, and the brilliant red of the Gladiolus in front of the Peas made two very bold features. White Sweet Peas, as well as being showy, as here noted, are very useful for cutting. In Messrs. Clibran & Son's stand of plants at the Cheadle show were a few plants of the above-named Hyacinth. Arranged as they were, just their tops—somewhat like Tuberoses—seen over the other plants, they were very elegant. Single flowers of the pretty white bells would be very useful for bouquets, a few of which should be had for some considerable time from the first flowering of the spike till it has flowered out. *Robert Mackellar.*

Law Notes.

Exchanges among Gardeners.—A case which has lately been tried before the magistrates at Greenock is of interest to masters and gardeners in general, and therefore we subjoin a brief statement, condensed from a local paper. Many witnesses were called to prove that the system of exchange between gardeners is a common practice, and it is one which we should decidedly consider advantageous to all parties, but not only should there be no concealment about it, but the express sanction of the master should be obtained, and then these unpleasant circumstances would not arise. In the present case the accused was liberated on a verdict of "not proven."

"At the Greenock Police Court, before Bailie Erskine a gardener was charged with having stolen five Geranium plants in pots, and five Fuchsia plants in pots, from his employer.

"Detective John Campbell deponed that he went to the gardener, who at once admitted that he had given Paterson, a greengrocer, the flowers. He did not say why he had given away the flowers. He said that they were in the habit of exchanging flowers. There was no attempt at concealment. He told them where he got the plants, and from whom he got them. The accused also told him quite frankly that he had given Paterson the plants.

"Mr. Cowan, of Stoneleigh, said the accused had been in his employment since November, 1875. He had no authority whatever from him to give away flowers, neither for sale nor for any other purpose. He could not identify the flowers produced as his. He never gave any of his gardeners authority to give away flowers in pots without his consent. The gardener had no authority from him to exchange plants. Witness did not wish plants in that way. He couldn't tell that he had plants in his garden that had been got in exchange. The gardener had taken upon himself to order seed, and witness could not say but that he would have yet to pay for seeds got. Witness was cross-examined at some length as to various plants and fruits he had in his garden, which it was contended had been got through the give-and-take custom amongst gardeners. He had no wish to get plants or flowers in this way. On one occasion witness had warned his gardener that he was not to give away any flowers.

"Mr. Butler, examined for the defence, was aware of a custom amongst gardeners of giving and getting flowers in exchange. Some masters knew about their gardeners giving away flowers in this way, and others did not. He did not know of any gentlemen who objected to their gardeners giving away flowers. This give-and-take system had been the custom since ever he remembered. Witness would rather that there was no such custom. It would be better for him. He was aware of the custom amongst gentlemen's gardeners of exchanging flowers. It was a common practice, though he could not say it was common to give flowers to greengrocers.

"Thomas Paterson, examined by Mr. Shearer, deponed that he had a garden in Gourock, and had a small greengrocer's shop. He knew of the custom of giving and taking flowers amongst gardeners. Last September he gave the accused some three or four dozen Pansy plants. There were some white Pansies amongst them, which the accused had had a particular desire to get, and which he put in his master's place. The gardener paid no money for the Pansies, and witness asked for none. He treated the gardener as a brother in the trade. When he went to Stoneleigh he didn't go for the purpose of committing a felony. He went up quite openly. He had the hamper with him, into which he was going to put some Parsley which the gardener had asked him to come and get. It would be about 9 o'clock when he got up to the accused's house. Witness did not get any Grapes, but he got some Geraniums and Fuchsias. He paid nothing for the plants. He would not have taken the plants if he had thought he was doing anything wrong. The plants were of very little value to witness. When the accused gave him the flowers he said the pots were of more value than the flowers, and asked him to return them, and he promised to do so.

"The flowers were given to ornament his shop. They were not for selling at all. No one saw witness giving the accused the Pansies. Nothing was said about the flowers until he was in the garden. He was going to sell the Parsley, which would be worth about 6*d.* altogether. He was disappointed with the quantity of Parsley that he got. He expected far more. The accused said the flowers were of no use to him, and that witness could get them if he wanted them. He did not go up to get flowers. He went up for the Parsley. The flowers were not intended to make up for his disappointment about the quantity of Parsley.

"By the Assessor: Witness had no intention of selling the flowers. He was to give the gardener nothing in return.

"Mrs. Paterson deponed that about three weeks ago the accused was down in her shop about some black Currants. When he was leaving the shop he remarked that the window was very bare, and said that he would make her a present of some flowers to ornament it. She thanked him, and he left. Her husband did not go up specially for the plants on Friday night. He went for the Parsley, and he took the first hamper that he saw in the shop, which happened to be the only empty one. She understood that the plants were to be given as a present.

"The Bailie said that the case had been fully argued, and that the police had only done their duty in bringing up the case. He (the Bailie) would not like to do anything that would prevent this system among gardeners, because he thought it was for the benefit of the masters. The present case was not exactly in accordance with the usual custom, because it had been proved that Paterson was a market gardener, and in that way it was different. There was an amount of suspicion in the case, but under the whole circumstances he thought that he was bound to give a verdict of 'Not proven.' The accused was accordingly dismissed."

Reports of Societies.

Royal Horticultural: *Aug.* 20.

Floral Committee.—Dr. Denny in the chair. The labours of the committee were very light on this occasion, but few subjects being brought forward for adjudication. Mr. B. S. Williams contributed a small group of new plants, and received a First-class Certificate for Croton Williamsii, a noble-leaved and handsomely-variegated plant, of which he staged a large and well-grown specimen; as also of another strikingly effective golden-variegated form, named Henryanus. Messrs. James Veitch & Sons exhibited their new hybrid Cattleya, described last week, which has been named Veitchiana, and which to-day gained a First-class Certificate. Another highly interesting hybrid Orchid was exhibited by Mr. Mitchell, gr. to Dr. Ainsworth, Lower Broughton, Manchester. This was × Cattleya Mitchelli, described by Professor Reichenbach at p. 386, vol. vi., 1876—the result of a cross between C. quadricolor (Eldorado) and C. guttata Leopoldi. It was awarded a First-class Certificate. Mr. H. J. Clayton, Grimston Park Gardens, Tadcaster, showed a curious seedling Fern, Blechnum interruptum, and received a Botanical Commendation. Mr. Turner, Slough, exhibited several new Dahlias, to two of which First-class Certificates were awarded. These were Helen Macgregor, a beautifully shaped flower, with pink petals tipped with maroon; and Prince Bismarck, a very large-petalled, deep maroon coloured flower, that we considered coarse. Messrs. John Laing & Co. sent the new seedling Begonia, Mrs. Elwes, a fine white flower, with a pale lemon centre; and from Mr. B. Johnson, gr. to T. T. Clarke, Esq., Swakeleys, Uxbridge, came two remarkably well-grown and bloomed plants of Vallota purpurea, or what was stated to be a seedling from that plant, and which were awarded a Cultural Commendation. Sir Trevor Lawrence, M.P. (Mr. Spyers, gr.), showed a fine variety of Dendrobium McCarthiæ, and also a plant with a fine spike of flowers of Odontoglossum Reichenheimi. Mr. Cannell again sent a very fine contribution of cut blooms of Verbenas, some thirty-six varieties in all, and the best in cultivation. G. F. Wilson, Esq., exhibited a cut bloom of the true Lilium speciosum rubrum, a magnificently coloured flower, not often met with; and a flower of what was supposed to be L. Lishmanni, a kind of Tiger-Lily, with scarlet flowers spotted with black. Mr. R. S. Yates, of Sale, sent a very large head of bloom of Lilium auratum on a fasciated stem; and Mr. Green, gr. to Sir G. Macleay, contributed cut blooms of tuberous Begonias grown in the open air; of Gladiolus dracocephalus, the pink Nymphæa Eugénie; and the striking Carica caulifiora. From Chiswick came a well-bloomed lot of Abutilons.

Fruit Committee.—Wr. William Paul in the chair. Mr. F. N. Dancer, Little Sutton, Turnham Green, showed a fine dish of Denyer's Victoria Plums; and also one of the new variety named Sultan, sent out by Messrs. Rivers & Son last year. It is a round, dark coloured culinary variety of excellent quality, and generally considered a valuable introduction to supersede the Prince of Wales, which, though its fruits always realise the highest prices for preserving, cannot be depended upon, as a tree, to continue healthy for any length of time; hence the accession of a variety of the same stamp, but which is believed to be free from the mysterious disease which so suddenly kills the trees of the Prince of Wales, is welcomed by the market growers. A First-class Certificate was awarded to it. Nine seedling Melons were placed before the committee, but there was not a good flavoured one amongst them, and therefore they need not be further alluded to. Messrs. William Paul & Son, Waltham Cross, contributed fruits of fourteen varieties of early Apples; and from the Society's gardens at Chiswick came a number of Russian varieties, which, however, proved of no value. From Chiswick also came a dish of fruit of the Early Silver Peach, one of Mr. Rivers' seedlings, which comes in immediately after Acton Scott. Mr. Hinds, gr. to Sir Thomas Edwards-Moss, Bart., Otterspool, near Liverpool, sent a bunch of the Golden Champion Grape, which had suffered severely in transit, and so did not present the handsome appearance which it had when we saw it on the Vine a few weeks ago. Mr. Maurice Young, the Milford Nurseries, Godalming, sent a sample of preserve made of the fruit of Eleagnus edulis.

Cheadle Horticultural: *Aug.* 9 *and* 10.—Taken as a whole, this show was decidedly the best the Society has yet held. Four tents were used for the purpose—one for fruit, 100 feet by 27; another for nurserymen, 86 by 27; the plant tent 200 feet by 50, and one 100 by 27 for plants which were arranged for effect. For the best ten stove and greenhouse plants (open class) Messrs. Cole & Sons, Withington, had the 1st place with two fine Ericas æmula and Holfordi; Cycas revoluta, a fine specimen; Ixora

coccinea, with fine heads; Allamanda Hendersoni, and two good Crotons. The 2d prize in this class was awarded to E. Bowden, Esq. (H. Corfield, gr.) For the best ten stove and greenhouse plants (amateurs) the 1st prize went to a large and fine ornamental group belonging to J. Rylands, Esq. (G. Smith, gr.), In this stand was a splendid pot of Alocasia Lowii, a plant not so often met with now as it used to be. The 2d prize in this class went to H. Samson, Esq. (Wm. Lingard, gr.): his best plant was a very large and finely-coloured Crotum variegatus; Dipladenia Brearleyana was also fine; Bougainvillea glabra and Allamanda grandiflora were well flowered. For six stove and greenhouse plants, J. Rylands, Esq., was again 1st; his plants were Erica Jacksoni, Allamanda grandiflora, &c. E. Rogerson, Esq., was 2d. For the best six exotic Ferns (open), Messrs. Cole & Sons had 1st, the 2d going to Mrs. Sykes, Edgley (George Kemp, gr). In six fine-foliage plants, J. Rylands, Esq., was 1st, though the place was well contested for by E. Bowden, Esq. For four Fuchsias the 1st prize went to T. H. Sykes, Esq., with well-bloomed plants of the older varieties. With four Liliums, Mrs. Sykes was 1st with average pots. In the class for nosegay Pelargoniums, for the best four, the prize went to D. Adamson, Esq. (J. Brierley, gr.). His plants were well bloomed. For four Zonals (not nosegays), Mr. Brierley had again 1st place, with similar well flowered plants. For four Adiantums, J. Rylands, Esq., was 1st with a very fine lot. Achimenes, three pots: the 1st prize went to D. Adamson, Esq. For four Dracænas, E. Bowden, Esq., was 1st with D. Youngii, D. pulchella, D. Shepherdii, and D. albicans. For six pots Caladiums, D. Adamson, Esq., was 1st. For four pans Lycopods, 1st, Dr. Massiah; 2d, G. W. Mould, Esq. For specimen Fuchsia, T. H. Sykes was 1st. For three single Petunias, specimen Petunia, Balsam and Verbena, P. Tambaci, Esq., was 1st. In specimen Cockscomb Mr. Sykes had the best. In model gardens there have been more competitors, but no exhibits have been better than the 1st prize one on this occasion, by Mr. A. Lumbers. It is the same design which he showed at the Carnation show at Old Trafford a week before, only since it has been there it has been improved upon.

A tent was almost entirely devoted to the competitions for two prizes, twenty plants growing in 10-inch pots, arranged for effect, and twenty bedding-out plants in 6-inch pots. Sloping tables, about 2 yards wide, were fixed from the centre of the tent, and on these the plants were arranged. For the best twenty in 10-inch pots, D. Adamson, Esq., and H. Wilson, Esq. (F. Thomson, gr.) had equal 1sts; Dr. Massiah, with a very good lot, had 3d; other two 4th prizes were awarded in this class. In the twenty bedding plants in 6-inch pots, P. Tambaci, Esq. (G. Wilkes, gr.), was 1st; and H. Wilson, Esq., was 2d. G. W. Mould, Esq., had the 1st prize for eight British Ferns. Cottagers' produce was not so largely represented this year as on former occasions, but so far as it went it was of average quality.

In the fruit collection of six dishes, J. Rylands, Esq. was 1st, with a good Queen Pine, Muscat of Alexandria, and Lady Downe's Grapes, hybrid Melon, &c.; D. Adamson, Esq., was 2d, who had in his collection some fine Madresfield Court Grapes, and Grosse Mignonne Peaches. For the best Pine in pot, uncut, J. Rylands was 1st. For two bunches black Grapes there were about a dozen competitors, and the successful exhibitor was R. Gammon, with two bunches of Madresfield Court; 2d going to P. Tambaci, Esq. For two bunches of white, H. Samson, Esq., was 1st with Muscat of Alexandria. In culinary Apples, for the best dish there were about a dozen and a half competitors, and the fruit was very good. J. Rylands, Esq., was 1st, with Lord Suffield; G. W. Mould, Esq., 2d. Some very good Melons were shown in both green and scarlet flesh. In small fruits there were but few competitors, through the late dry hot weather the small fruit season has passed over very rapidly this year. In Tomatos J. Rylands, Esq., was 1st, W. J. Legh, Esq., M.P., 2d. There were about a dozen and a half competitors for a brace of Cucumbers; A. Fallows was 1st, and J. Rylands, Esq., 2d. Twelve bunches of stove and greenhouse cut flowers: Messrs. Cole & Sons were 1st. Along the centre of the fruit table plants for table decoration, hand bouquets, and stands of cut flowers for table decoration were placed, giving the table a fine effect. Stands for table decoration were well contested, the 1st prize going to P. Tambaci, Esq., and the 2d to D. Adamson, Esq.

Vegetables in some cases were particularly good, especially the 1st prize Cauliflower, the 1st prize Onions, the 1st prize kidney Potatos, and the 1st collection of vegetables, which were exhibited by P. Tambaci, Esq. A tent was allotted to the nurserymen, which in itself made a very nice little show. The exhibitors here were Messrs. Clibran & Son, Bowdon; Mr. Hooley, Stockport; and Mr. Gleave, Heaton Norris. There was a great variety of choice small plants exhibited in this tent, and very effectively arranged. The success of the show there can be no doubt is in the greatest degree due to the untiring efforts of the honorary secretary, E. D. Stone, Esq. (*From a Correspondent.*)

The Birmingham Botanic Gardens Exhibition.—The annual exhibition took place on the 9th and 10th inst., and there was a good display of stove and greenhouse plants, the 1st prizes for twelve and six being awarded to Mr. Walter Jones, gr. to Mr. Councillor C. E. Matthews. In these collections were well-grown and flowered specimens of Statice profusa, Dipladenia Brearleyana, in fine colour; Clerodendron Balfourianum, very fine; and Abutilon Boule de Neige in fine character and dwarf and bushy. Mr. A. J. Elkington's gr. (Mr. Hurst) and Mr. T. W. Webley's gr. (Mr. Dyer) also staged some good collections of stove and greenhouse plants.

Fuchsias are invariably shown well here, and it was so again this season, every plant being a model of good culture and well flowered. The leading honours fell to Mr. Willis, gr. to Mr. Henry Heaton, and Mr. Caldecott, gr. ro Mr. W. Mathews.

Two superb sixes of exotic Ferns, which took the 1st and 2d prizes, the former from Mr. T. W. Webley, contained grand plants of Davallia Mooreana and Adiantum farleyense, and the second lot was staged by Mr. W. Matthews.

Six Cockscombs exhibited by Mr. Dennings, gr. to Mr. J. Fenton, were as fine as it is possible to grow the plant, and some good Zonal Pelargoniums were exhibited, especially those of the pyramidal form of training, which were very effective. The Gloxinias were very good. In the collection of plants exhibited by Mr. Hurst, gr. to Mr. A. J. Elkington, were a few examples of Tabernæmontana coronaria florepleno, and Dracæna Baptistii in very fine colour and health. Some wonderfully well-grown Caladiums were exhibited, especially the 1st prize lot exhibited by Mr. Dyer. Several good examples of the bulbous rooted Begonias were exhibited, and they are really striking objects and very attractive, and being easy of cultivation, and of rich and pleasing shades of colour, they ought to be very generally grown. Some groups of Dracænas from Mr. Dyer, and Mr. Jinks, gr. to Mr. J. E. Wilson, consisting chiefly of the newer kinds, exceedingly well grown, were much admired. Mr. R. W. Vertegans sent (not for competition) a group of plants, amongst which were Hyacinthus candicans, Begonias Earl of Beaconsfield and Marquis of Salisbury, and Tuberose Pearl, a really fine variety.

The arrangement of the large plant tent here is as the Regent's Park Botanical Gardens, and Mr. Latham, the curator, produced an effect which pleased every one. A large tent was also used for cut flowers and fruit, of which there was a fair display. *W.*

Shepton Mallet Horticultural: *Aug.* 13.—Any one in the habit of visiting horticultural shows in the country cannot fail to be struck with the admirable culture shown in the plants exhibited at Shepton Mallet and other West of England exhibitions. They may not be superior to those seen elsewhere, but they are a long way ahead of what is generally staged by cottagers. At Shepton Mallet the Fuchsias shown by cottagers shamed the productions of many gardeners with ample glass accommodation. They were shown in threes, and one trio consisted of Wiltshire Lass, Rose of Castile, and Souvenir de Chiswick, 3 feet in height, of pyramidal shape, and finely bloomed. Large and small plants alike were well grown, and this was equally true of the subjects staged in the class for a single specimen. Here Albo-coccinea, Annie, and Souvenir de Chiswick were the best; the former is a charming free-blooming exhibition and decorative variety. One specimen was a standard growing in an old slop-pail; the stem of the plant had been covered with moss up to the branches, a height of 2½ feet, which made it resemble the stem of a Tree Fern. A circle of Mignonette was growing in the soil about the roots. Cottagers' Pelargoniums (nearly all Zonal varieties) were remarkably good, especially some of the specimens of doubles. The single varieties were well grown also. They were shown in threes and also in single specimens. The class for any other flowering plant comprised Agapanthus umbellatus, Petunias (very finely grown), very good Balsams, &c.; showing that the culture of plants is well understood by this class.

In the cottagers' classes vegetables and hardy fruits of all kinds were finely shown, and in the class for an ornamental device of garden flowers was a variety of designs showing careful and elaborate execution.

The other departments of the large show were exceedingly well filled, altogether 13,000 entries had been received. One large tent was set apart for classes open to all, the leading prizes being for nine varieties of stove and greenhouse plants in bloom. Not less than five groups competed, the best coming from Mr. James Cypher, who had nice fresh and evenly balanced specimens. Fuchsias were very finely shown, the best six coming from Mr. J. F. Mould, who had superbly grown specimens of Doil's Favourite, Marginata, Arabella, Excellent, Blue Sky, and Puritana; these averaged 5 to 6 feet in height, were finely and symmetrically grown, and profusely flowered. 2d, Mr. W. J. Mould, nurseryman, Bristol, who had Arabella, Hon. Mrs. Hay, Conspicua, Rose of Castile, Elegance and Queen Victoria. Two other good collections were staged, the worst plants being much in advance of those to which first prizes have been awarded at country shows.

The best collection of twelve ornamental foliage plants were staged by Messrs. Bryant & Hoskins, Bristol, and contained some excellent subjects, such as Cocos Weddelliana, with flower-spikes and fruit; Pandanus Veitchii, very fine; Ficus Parcelli, Alocasia metallica, A. Lowi, a fine piece of Maranta Makoyana, M. rosea picta, Dræmonoropes palembanicus, and Croton Weismanni. 2d, Mr. W. C. Drummond, nurseryman, Bath, with an uneven lot, containing some nicely grown specimens promising well for the future. The best group of eight Ferns and Club-mosses came also from Messrs. Bryant & Hoskins, and there was a spirited competition in this class; Mr. E. Burge, gr. to F. Berryman, Esq., being 2d. Three other collections were exhibited. The best six Lycopods came from Mr. R. Williams, and were grown in ornamental terra cotta pans, which appeared to suit the plants well. They were a remarkably fine lot, the sorts being S. circinalis, viticulosa, Karsteniana, Martensii variegata, involvens, and Poulteri.

The best twenty-four Dahlias—superb for this early period of the year—came from Messrs. J. Keynes & Co., Salisbury, and included Royal Queen, J. W. Lord, Louisa Neate, Flag of Truce, Michael Saunders, W. P. Laird, Harriet Tetterell, Vice-President, Mons. Chauviere, Burgundy, Drake Lewis, The Countess, John Bennett, Herbert Turner, Mr. Stancomb, Henry Walton, Chris. Ridley, Henry Bond, Earl of Radnor, John Wyatt, Cremorne, &c.; 2d, S. Dobree, Esq., Wellington. The best twelve fancies also came from Messrs. Keynes & Co., and included Hercules, J. B. M. Camm, Lucy Fawcett, Mrs. Saunders, Fanny Sturt, Henry Glasscock, &c.; 2d, S. Dobree, Esq. Hollyhocks were somewhat poorly shown, the season having been against them.

One large tent was entirely devoted to fruit, vegetables, table decorations, and devices. None of the exhibitors names were on their products up to 2 o'clock, and no return of the prize-winners could be obtained up to that hour. Apples, particulary culinary varieties, were remarkably fine. Lord Suffield took the lead, with Monster Pippin, Hawthornden, Keswick Codlin, Excelsior Pippin and Sauce Apple, both of which appear to be identical with Glory of the West, were finely shown. The best dessert Apples were Bath Seedling, Quarrenden, Stubbard's Nonpareil, Red Astrachan, and the Irish Peach. Dessert Pears were represented by Jargonelle, Beurré Giffard, and Duchesse d'Orleans. Apricots were both numerous and fine. Peaches and Nectarines were very good; and Plums, both purple and green, very fine. Black Hamburgh and white Muscat Grapes were tolerably well shown, and in a collection of six dishes of fruit, Crawford's Early Peach was very attractive.

Vegetables were wonderfully fine in all the classes, and Potatos were especially numerous. (*From a Correspondent.*)

Moor Park Flower Show, Rickmansworth: *Aug.* 14.—Moor Park, the scene of the show of the Rickmansworth Cottagers' Horticultural Society, is of historic interest, it having been in days long gone by the property of Cardinal Wolsey, who while he resided there received a visit from King Henry VIII. and his unfortunate Queen, Anne Boleyn, and who no doubt reclined under some of the noble old trees still standing in the vicinity of the mansion.

The visitors to the show were permitted to view by ticket the Italian gardens in front of the mansion, which were looking very beautiful, in spite of the heavy rains that had fallen.

Mr. Mundell, gr. to Lord Ebury; Mr. Myers, gr. to the Earl of Clarendon; and Mr. Smith, gr. to D. Carnegie, Esq., exhibited magnificent groups, unnamed—Mr. Mundell having pretty little groups on each side of the entrance of the large marquee. Mr. Marsden, gr. to the Earl of Essex, had a very beautiful group, amongst them being Croton variegatus and majesticus, Cyanophyllum magnificum, Pandanus Veitchii, Alocasia metallica, Panicum sulcatum, Maranta Veitchii, Cyperus laxus, and many others. Mr. Herrin, gr. to J. N. Hibbert, Esq., of Chalfont Park, Slough, had a very choice group; Mr. T. Bailey, gr. to W. McMurray, Esq., exhibited a fine collection, amongst them being several splendid Fuchsias, as shown by him here for several years past. In the tent appropriated to wild flowers, honey, &c., Mr. Smith, gr. to W. Jones Loyd, Esq., exhibited a really grand group of plants, the principal being fine specimens of Pandanus Veitchii, Croton variegatus and angustifolius, Phormium tenax, &c. Mr. Try, gr. to L. J. Baker, Esq., of Haydon Hall, exhibited in the tent appropriated to table decoration two pretty groups. Another small tent contained a pretty collection by Mr. Mundell. Mr. Goddard, of Stone Grove Nur-

series, showed a choice and valuable group of plants. Mr. Brush, gr. to Lady Hume Campbell, exhibited two boxes of choice Roses and one of Asters. Mr. T. Hutchings, of the Nurseries, Rickmansworth, showed a box of grand Dahlias, three boxes of choice Roses, one box of Phlox, &c. The most charming feature of the show was furnished by Mr. Donaldson, gr. to Lord Chesham. It was a design about 10 feet long and 5 feet wide, having a ground of moss, with a border of choice and well-grown Asters, the centre having designs in Asters, between which were eight baskets of Grapes, Waltham Cross, Black Morocco, Alicante, Muscat of Alexandria, Trebbiano, Abercairney Seedling, Black Hamburgh, Duke of Buccleuch, and Foster's Seedling. In the centre there was raised above the rest a basket of red Currants, and the handles of the baskets were covered with moss. Mr. G. Reeves, gr. to Mrs. Connop, exhibited a nice basket of fruit, Cucumbers, and vases of Ferns, also four very prettily arranged bouquets of flowers. The centre table not being sufficiently large to hold the gardeners' plants, some were distributed into smaller tents, perhaps to the advantage of the plants, as their beauty was much more readily seen.

The cottagers' exhibits, especially the Potatos and baskets of vegetables, were very good, but the entries were not so numerous as might be expected from the size of the district. There was but very little fruit shown by them, nor, indeed, flowers, which is to be regretted.

An interesting feature was introduced by the Rev. Herbert Peel, of Hemel Hempstead, hon. sec. of the British Beekeepers' Association. A tent was erected on the lawn, in which Mr. S. J. Baldwin, of the Apiary, Alexandra Palace, had a hive of bees, and showed his audience how to transfer bees from fixed comb to movable comb hives, &c.

Ramsgate and St. Lawrence Horticultural and Cottage Garden: *Aug.* 14.—The first exhibition of this Society was held in the grounds of Townley Castle, a most beautiful and well-adapted place for the purpose, easy of access, and the surroundings such as to add much to the general effect of the show, which in itself was of a character that augurs well for the prospects of the Society. If in a place teeming with visitors as Ramsgate is at this season of the year the people can at the first attempt be induced to visit the exhibition in such numbers as they did on this occasion, the first, and one of the principal elements of success, is secured. So far as the productions collectively went, without containing anything of an extraordinary character, they were very creditable. There was an absence of any very large specimen plants that are the work of years to grow, but the greater portion bore evidence of careful attention in their cultivation, and we have no doubt but that ere long the Society will be able to command a sufficiency of plants of larger growth to give variety and relief to the smaller subjects, which, in themselves more generally useful for ordinary decorative purposes, are nevertheless, either on the exhibition or home stage, improved by the presence of a moderate number of large fully-developed specimens.

The leading open class was for a group of plants effectively arranged, occupying a medium space, not too large, as in these competitions sometimes required, the result of which is that the exhibitors are compelled either to use an unreasonable number of plants or to stage them thinly, which latter alternative is destructive generally of the finish essential to effective arrangement. The 1st prize group was very nicely set up, and suitable for the purpose. Those which took the 2d were nearly equal, only rather too even on the surface. In the 3d prize lot the old blue Agapanthus umbellatus, with single stems of flower borne by small plants well elevated above the general level of those immediately around them, produced a good effect.

Stove and greenhouse plants, in or out of flower, were shown in nice condition, the greater portion being foliage subjects. Ferns also were creditably done, consisting of the smaller growing species, many of which it is refreshing to meet with on the exhibition stage, having been supplanted by larger but often less elegant or beautiful kinds, which is somewhat to be regretted.

Fuchsias were well flowered, but some of the plants old, and wanting in the appearance possessed by younger specimens.

Coleus were produced in very nice condition, with no more sticks or training than necessary to support them.

Zonal Pelargoniums were very fairly done, not large, but well furnished with flowers and healthy foliage, the latter an essential that cultivators of these plants would now-a-days appear to think not necessary.

Gloxinias, for so far on in the season, were forthcoming in good condition, and quite equal to anything present on the occasion, full of flowers, supported by stout healthy foliage.

In cut flowers Dahlias and Asters were especially well shown, as also Roses.

Fruit was exhibited in moderate quantity and nice condition—black Grapes particularly.

Mr. J. W. Chapman had, not for competition, a group of flowering plants, Ferns and Dracænas, which were Highly Commended, as also were Gladioli and a collection of Clematis from Messrs. Bunyard & Sons, of Ashford; and Roses—good for the time—from Messrs. Kinmont & Kidd, Canterbury. (*From a Correspondent.*)

Taunton Dean Horticultural: *Aug.* 15.—This flourishing Society, which holds a prominent place amongst those in the West of England, which of late years have contributed in no small degree to make well-grown plants, fruits, and culinary vegetables in this part of the kingdom more the rule than the exception, held its eleventh annual exhibition in Vivary Park, a well chosen and beautiful place for the purpose. To those who have an opportunity of seeing flower show arrangements in different places there are two things strikingly apparent at Taunton—the assiduity of the promoters, and the hearty support accorded to them by the townspeople, who are not sparing either in trouble or expense to give the place a thoroughly festive appearance. To such an extent is this carried here that it at once sets us wondering how it is that in some places the inhabitants seem to enter heartily into and second the efforts of the committee to provide a treat for all, from the highest to the lowest, who can be induced to come and see it, while in other places nothing but listless indifference is evinced by the majority not absolutely engaged in the pursuit. One is almost inclined sometimes to think that climate has some influence upon the people in this respect, as it has upon the plants, until we recollect how the denizens of some of the great centres of trade and manufacture throng the tents and admire their contents. Anyhow the Taunton committee and the Taunton people go hand in hand, making their show a success. There was a very large attendance, £329 being taken at the gates during the afternoon; and over 6000 people paid for admission to see the fireworks in the evening. In the open class for twelve plants, all flowering, or flowering and fine-foliage combined, at the option of the exhibitors, Mr. Cypher, Cheltenham, was a good 1st, showing all blooming specimens, fresh and well-flowered; amongst them were very fine examples of Ixora Fraseri, and I. regina, Dipladenia amabilis; a grand Eucharis amazonica, large and beautifully bloomed; Erica æmula, Allamanda nobilis and A. Hendersoni. Mr. Tudgey, gr. to T. F. G. Williams, Esq., Henwick Grange, Worcester, 2d, showed a combination of flowering and fine-leaved plants, consisting of Palms and Crotons, intermixed with blooming specimens, amongst which was a large and finely flowered example of the seldom seen Erica Eweriana superba, a handsome high-coloured variety; and a well-bloomed Dipladenia Brearleyana. Mr. Drummond was 3d. For eight fine-leaved and variegated plants Mr. Cypher was a long way in front. In his exhibit was a splendid example of the handsomest of all Cycads—Cycas Normanbyana. Mr. Drummond was 2d, with smaller plants.

For eight exotic Ferns Mr. Tudgey was 1st, having an immense bush of Gleichenia hecistophylla, several handsome Tree Ferns, Adiantums, and smaller examples of Gleichenia Mendelii and G. rupestris. Mr. Cypher was 2d, with less plants, but a nice even lot, in which was a beautiful pendent example of Goniophlebium subauriculatum, with fronds 7 feet long; when so managed it is one of the finest and most distinct of Ferns.

In the class for six Orchids Mr. J. W. Wills was the only exhibitor, showing very nicely done plants of Odontoglossum hastilabium, Cattleya marginata, Mesospinidium vulcanicum, Cypripedium caudatum, Epidendrum prismatocarpum, and Oncidium aurosum.

Mr. Drummond was 1st for six Fuchsias, with well bloomed but old plants, and, as such usually are, not equal in general appearance to younger examples. We almost despair of again seeing these most useful, easily grown decorative subjects grown as they once were, through the determined way in which cultivators retain old worn-out plants.

Zonal Pelargoniums at this advanced season help to give colour to the mass of green and variegated leaved subjects that otherwise would look somewhat sombre. For eight Zonals Mr. W. S. Mould was 1st, with well-flowered, nicely grown examples, closely followed by Mr. H. J. Penny. For eight nosegay varieties Mr. Mould was also 1st, showing in his lot the glowing crimson Douglas Pearson and the bright pink Rose of Allendale—two very effective varieties; Mr. Penny was 2d. For four double Pelargoniums Mr. Mould was again 1st; his plants collectively were not subjected to the close, over-trained manipulation which is destructive of the natural habit of these useful subjects.

In the amateurs' divisions for twelve stove and greenhouse plants a valuable silver cup was offered, which was easily won by Mr. J. Marshall with a well-matched group, containing a nice specimen of the old, but still one of the best, Ixora salicifolia, a well-flowered Clerodendron Balfourianum, and a finely-coloured Croton majesticus. Mr. Miles, who was 2d, had in his dozen a neat example of the glowing Erica vestita coccinea. Six foliage plants.—1st, Mr. Marshall, who had a very effective medium-sized plant of Croton McArthurii, which, if it maintains the character of growth and colour it had here, will be one amongst a very few of the most select kinds; the foliage is drooping, much handsomer in colour than C. Weismanni, and very much longer, the yellow and green mingling in a very telling way. With it was a nice example of Nepenthes Chelsoni—a handsome kind.

The prize for a single greenhouse plant went to Mrs. Greenslade, for a very well-flowered Plumbago capensis; and that for a single stove plant to Mr. Miles, who had a nice specimen of Anthurium Scherzerianum.

Dinner-table decorations.—These are made a particular feature here, a tent of considerable size being devoted to them. For a fully furnished table, 4 feet by 8 feet, competed for by ladies only, Miss Cypher was 1st in a very good competition, with fruit and flowers combined, extremely well arranged; Miss Coker's (2d) also well done.

Cut flowers.—Roses were here again unusually well shown. For forty-eight single blooms Mr. Prince of Oxford was easily 1st with these, as likewise in the class for twenty-four in threes. If Mr. Prince could not quite "go the pace" with some of the other leading growers early in the season, he apparently can outstay his opponents, as evidenced by the grand flowers he has been showing lately for so far on. Mr. Cooling took 2d in each class.

Fruit was well represented, except Grapes, which collectively were deficient in finish. For ten dishes the five-guinea silver cup was, in a close competition, won by Earl Fortescue with, amongst others, a really good Pine, Peaches, Nectarines and Figs; Mr. J. Austen 2d, Mr. Foote extra. Six dishes: Mr. Foote 1st, Earl Fortescue and Mr. Hallett equal 2d.

Pine-apple: 1st, Earl Fortescue, who also received an extra prize for a collection of extremely fine Pines.

Three bunches Black Hamburghs: 1st, Mr. Hallett; 2d, Mr. R. O. Backwell. Three bunches black Grapes, not Hamburghs: 1st, Mr. Hallett. Three bunches white Muscats: 1st, Mr. Hallet; 2d, Mr. R. C. Davis. Three bunches white Grapes, not Muscats: 1st, Mr. Hallett; 2d, the Rev. C. M. Miles. (*From a Correspondent.*)

East London Amateur Floricultural: *Aug.* 19, 20, *and* 21.—The thirteenth annual show of this Society was held in the grounds adjoining Bancroft's Schools, Mile End Road, a space well suited to the purpose. The show was a very neat one, many fair specimens being exhibited. Among the exhibitors Mr. H. Hare gained prominent distinction at the hands of the judges. First prizes were awarded him for an epergne tastefully filled with blooms, for a group of handsome Begonias, for three Fuchsias of this year's cuttings, for a general collection of plants, for a set of three Ferns, and for a similar number of Coleus. Several prizes also fell to the lot of Mr. C. Parker, to whom 1st honours were awarded for a basketful of flowers, for three Fuchsias of any age, for a collection of different plants, and for a group of twelve Pelargoniums. Mr. J. R. Roberts obtained a 1st prize for twelve beautiful bunches of cut flowers, and for twelve Dahlia blooms. Mrs. C. Smith was accorded high commendation. The other competitors who were fortunate enough to carry off 1st prizes were Mr. J. R. Roberts, for a neat dwarf Lilium auratum; Mr. C. J. Dance, for three Pelargoniums; Mrs. A. Pilkington, for three Fuchsias and for an equal number of Petunias; Mr. T. Boggis, for a collection of plants in bloom; Mr. T. Yule, for an assortment of Apples and Grapes; and Mr. Charles Smith, for a collection of vegetables, which included Potatos, Onions, dwarf Beans, and other esculents. The show of vegetables and fruit was not extensive. Mr. T. Kiddle showed a wonderfully pretty combination of aquarium, aviary, and fernery, which must have taken a considerable amount of time and patience to have completed so neatly. This was highly commended, as also was the effective group of plants from Victoria Park, which filled one end of the tent; and the model garden of Mr. Wender, which contained not only the stereotyped fountain and flower-beds, but also a pretty summer-house and greenhouse, &c.

Natural History.

Are Squirrels Carnivorous?—In answer to the inquiry by "W. K." as to squirrels being carnivorous, I may say that I have repeatedly seen them attack the nests of blackbirds and thrushes, and in spite of the efforts of the old birds to defend the young ones they have succeeded in carrying off one of their prey into a neighbouring tree, where they would eat them up as voraciously as a cat eats a mouse. They will also suck their eggs as well when they get a chance. *A. Willis, The Gardens, Calwich Abbey, Ashbourne, Derbyshire.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, August 21, 1878.

Month and Day.	Barometer: Mean Reading at 9 A.M. corrected for 32° Fahr.	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest	Lowest	Range	Mean for Day	Departure of Mean from Average of 18 years	Dew Point: Mean for Day	Degree of Humidity. Sat. = 100	Wind: Average Direction.	Rainfall
Aug.	In.	In.	°	°	°	°	°	°			In.
15	29.41	−0.36	75.0	57.2	17.8	66.4	+ 0.7	55.0	77	S.W.	0.00
16	29.28	−0.50	70.0	54.1	15.9	58.4	− 3.0	57.6	98	S. S.S.W.	0.56
17	29.77	−0.02	69.8	49.8	20.0	56.8	− 2.0	46.4	65	S.S.E. S.S.W. WSW	0.00
18	29.83	+0.04	74.0	54.5	19.5	62.8	+ 1.8	54.0	71	S.W. S.S.W.	0.00
19	29.69	−0.11	73.0	55.8	18.1	62.4	+ 1.5	56.1	80	S.S.E. S.E.	0.00
20	29.80	−0.01	66.4	53.0	13.4	58.0	− 1.9	50.2	73	E.S.E.	0.00
21	29.86	+0.05	69.1	51.9	17.2	58.5	− 1.8	51.8	78	E. E.S.E. E.N.E.	0.00
Mean	29.60	−0.13	71.2	53.8	17.4	60.2	− 0.8	53.0	78	S.W. : sum E.	0.56

Aug. 15.—A fine day, partially cloudy. Bright.
— 16.—Generally dull, cloudy, and showery. Fine at times. Distant thunder heard at 1.45 P.M. Heavy rain fell in early morning.
— 17.—A fine bright day. Cloudless at night.
— 18.—A fine bright day, partially cloudy.
— 19.—A very fine day. Clear at night.
— 20.—Fine, but dull and cloudy. Cool.
— 21.—Fine, but dull and cloudy. Sunshine at intervals. Cool.

LONDON: *Barometer.*—During the week ending Saturday, August 17, in the vicinity of London the reading of the barometer at the level of the sea increased from 29.66 inches at the beginning of the week to 29.85 inches by the morning of the 11th, decreased to 29.58 inches by the morning of the 12th, increased to 29.71 inches by noon on the 13th, decreased to 29.37 inches by the morning of the 14th, increased to 29.65 inches by the morning of the 15th, decreased to 29.41 inches by noon on the 16th, and increased to 30.02 inches by the end of the week. The mean reading for the week at sea level was 29.65 inches, being 0.22 inch below that of the preceding week, and 0.30 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 75° on the 15th to 67½° on the 13th; the mean value for the week was 71¾°. The lowest temperatures of the air observed by night varied from 49¾° on the 17th to 57¼° on the 15th; the mean value for the week was 54⅜°. The mean daily range of temperature in the week was 17½°, the greatest range in the day was 20°, on the 17th, and the least 13½°, on the 13th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—11th, 62.6, + 0°.4; 12th, 60°.4, — 1°.8; 13th, 59°.5, — 2°.7; 14th, 64°, + 2°; 15th, 62°.4, + 0°.7; 16th, 58°.4, — 3°; 17th, 58°.3, — 2°.9. The mean temperature of the air for the week was 60°.8, being 1° below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in full rays of sun, were 148¾° on the 11th, 145° on the 15th, and 137° on the 17th; on the 13th the reading did not rise above 99°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 46½° on the 17th and 48° on the 11th; the mean of the seven low readings was 50¾°.

Wind.—The direction of the wind was S.W., and its strength moderately brisk.

The weather during the week was fine, but frequently dull and showery; the sky was cloudy, and *thunder* was heard on the 12th and 16th.

Rain fell on four days during the week; the amount collected was 1.08 inch.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 79° at Sunderland, 77° at Cambridge, 75° at Blackheath, and 74° at Nottingham, the highest temperature of the air at Liverpool was 67¾°, and at Bradford 69½°; the mean value from all stations was 72½°. The lowest temperatures of the air observed by night were 46° at Eccles, 47½° at Wolverhampton, 48¼° at Nottingham, and 49¾° at Blackheath: the lowest temperature of the air at Liverpool was 54°, and at Plymouth, Leeds, and Sunderland was 52°; the mean from all stations was 50¾°. The range of temperature in the week was the greatest at Sunderland, 27°, and the least at Liverpool, 13¾°; the mean range of temperature from all stations was 22°.

The mean of the seven high day temperatures was the highest at Cambridge, 73½°; Blackheath, Nottingham and Sunderland all 71¾°, and Bristol, 71°, and the lowest at Liverpool, 65½°, and Bradford, 67½°; the general mean from all stations was 69¼°. The mean of the seven low night temperatures was the lowest at Eccles, 51°, Nottingham 52½°, and Wolverhampton 53°, and the highest at Plymouth, 57¼°, and Liverpool 56½°; the mean from all stations was 54¾°. The mean daily range of temperature in the week was the greatest at Nottingham, 19°, and the least at Liverpool, 9°; the mean daily range from all stations was 14¾°.

The mean temperature of the air for the week from all stations was 60¼°, being ¾° lower than the value for the corresponding week in 1877. The highest were 62¾° at Cambridge, and 61½° at Brighton, Bristol, and Sunderland, and the lowest were 58° at Eccles, and 58¾° at Wolverhampton.

Rain fell on every day in the week at some places, and on six days at most other places. The falls varied in amount from 2.85 inches at Bradford, 2.43 inches at Plymouth, and 2.21 inches at Bristol to 0.97 inch at Sunderland; and 1.08 inch at Blackheath; at no station was the fall less than 1 inch. The average fall over the coautry was 1.58 inch.

The weather during the week was generally dull, cool, and wet; the sky was always cloudy, and frequent *thunder* was heard.

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 74° at Dundee to 68¾° at Leith; the mean value from all stations was 71°. The lowest temperatures of the air varied from 43½° at Edinburgh to 48° at Aberdeen; the mean from all stations was 45½°. The mean range of temperature in the week from all stations was 25½°.

The mean temperature of the air for the week from all stations was 57¼°, being 1½° lower than the value for the corresponding week in 1877. The highest was 60° at Dundee, and the lowest 52° at Aberdeen.

Rain.—The heaviest falls of rain were at Aberdeen, 2 inches, and Greenock, 1.43 inch, and the least falls of rain were at Edinburgh, 1.07 inch, and Leith, 1.05 inch; the average fall over the country was 1.32 inch.

DUBLIN.—The highest temperature was 75°, the lowest 45½°, the range 29½°, the mean 60¼°, and the fall of rain 1.31 inch.

JAMES GLAISHER.

Variorum.

HERBACEOUS PLANTS AT KEW. — Among herbaceous plants worthy of notice at Kew we may mention the following, taking them, without order, just as they occur in our notes:—

ANDROSACE LANUGINOSA.—A plant of creeping habit, with ovate hairy leaves and tufts of pale lilac flowers, very suitable for rockeries.

ERODIUM REICHARDI.—A neat habited low-growing plant, with small, oblong, cordate, crenate, hairy-stalked leaves and small white starry flowers, ½ inch across, suitable for the front of the herbaceous border in a sheltered place.

FRANKENIA LÆVIS.—A neat growing prostrate plant, with minute linear leaves, just the thing for a carpet in the front of the herbaceous border.

LINARIA TRIORNITHOPHORA.—An old friend, with stems some 2 feet high bearing whorls of lanceolate leaves and clusters of long spurred violet flowers 1 inch or more in length.

CALANDRINIA UMBELLATA AND PORTULACA THELLUSONI.—Gorgeous succulents. Their rich magenta flowers are almost dazzling. They require a warm border and full sunlight.

ANEMONE JAPONICA should be grown in every garden; the Cardoon and the Artichoke also, where room can be found for them. Nothing can be more stately than these plants.

ERIGERON MUCRONATUM is the pretty little foreground plant, erroneously called Vittadinia triloba. Its starry, Daisy-like flower-heads, with their varying colours, are very charming.

ECHINOPS RUTHENICUS is the best of the Globe Thistles, its flower-heads being of a rich blue colour.

CENTAUREA ATROPURPUREA is a tall-growing Centaury, with very handsome flowers of a rich maroon colour, suitable for the centre or back rows of the herbaceous border.

ASTER LINDLEYANUS.—One of the last of its class, of middle height, with cordate-ovate leaves and pale lavender flowers.

A. SERICEUS has silky lanceolate leaves and purple flowers. It is one of the most distinct of its race.

EUPATORIUM PURPUREUM is showy when in bloom from its masses of brownish pink flowers. Its towering height demands a place quite at the back of the border.

SILPHIUM INTEGRIFOLIUM, S. PERFOLIATUM, and RUDBECKIA LACINIATA are tall yellow-flowered Composites also suited for the rear ranks, their showy flowers overtopping plants of lower stature.

HELIANTHUS ORGYALIS should be grown where its elegant drooping linear leaves can be well seen. It is a most effective plant.

ACHILLEA FILIPENDULACA, A. AQUATICA, A. EUPATORIUM should find a place in the back border on account of their dense masses of rich yellow flowers.

ECHIIUM FASTUOSUM is amply worthy of notice from its bold Yucca-like habit. Its lanceolate leaves are covered with silky down.

MONARDA DIDYMA with scarlet flowers—M. PURPUREA, and M. FISTULOSA, with whorls of lilac flowers, should not be omitted from the herbaceous border, wherein theymay take middle rank as to size.

LINARIA PELORIA, now in flower at Kew, is remarkable as presenting a flower made regular by very excess of irregularity. Instead of one spur it has five, and so the symmetry is restored.

ABRONIA UMBELLATA with pink, and A. ARENARIA with yellow flowers, are fit for rockworks or the edge of herbaceous borders, owing to their prostrate habit; and the same may be said of ACÆNA MICROPHYLLA, with its neat foliage and pink spiky flower-heads.

Obituary.

WE regret to have to announce the death of JOHN NICOLAS HAAGE, of Erfurt, on the 9th inst. Mr. Haage was botanising in the neighbourhood of Mürren in Switzerland, when he fell down a steep precipice. The deceased was the founder and head of the well-known firm of Haage & Schmidt.

Enquiries.

He that questioneth much shall learn much.—BACON.

FLOWERS NEAR EASTBOURNE. — Can any of your readers who are well acquainted with this watering-place inform me of the name of a beautiful white flower that grows abundantly in cottage gardens there, and especially at Pevensey? It is evidently some sort of Pea, or Vetch, like a white Astragalus, as tall and thick through as a well-grown autumn Phlox. The leaves are elegantly cut, in form like those of Jasmine. It is most ornamental, and evidently at home in the chalky soil of Sussex. In the churchyard at Hurstmonceux there is a very pretty little tree planted on the grave of the late "Maria Hare," interesting to all readers of that beautiful book, *Memorials of a Quiet Life* (and they are numerous). The tree resembles a Sensitive-plant, and is apparently an Acacia. I have enclosed a tiny sprig from the tree, in the hope that it may be identified. *H. M. E.* [Our correspondent should send a specimen. The "tiny sprig" is probably a Gleditschia, but the specimen is insufficient. EDS.]

PRESERVING THE COLOUR OF REEDS. — Can you kindly inform me if there is any mode of preserving in a green state the foliage and flower-stems of the large Reed called here the "Polka Reed," so that they will keep a green appearance after they should naturally have decayed? They are used here in tall glass vases. *A Subscriber, Leicester.* [We do not know any plant called the "Polka Reed." Please send us a specimen. The Pole Rush is Typha; the Pole Reed is Arundo phragmites. EDS.]

THE INTRODUCTION OF THE POTATO.—Where was the Potato first cultivated in England? Was it at Formby in Lancashire? *B.* [It is stated that the Potato was first grown on Sir Walter Raleigh's estate at Youghal, near Cork, and that from Ireland it was introduced into Lancashire. EDS.]

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

APPLE DUMELOW'S SEEDLING: *W. D.* It was raised at Shakerstone, a village in Leicestershire, by a person named Dumeller (pronounced Dumelow), and appears to have been brought to London, when the synonym of Wellington was given to it, about 1820.

APRICOTS: *Vigilo.* A glass coping such as you suggest would probably be effective, but the seasons vary, and this might be supplemented by netting sometimes with advantage.

BOOKS: *F.* We should advise Thomson's *Gardeners Assistant*, published by Blackie & Co.—*H. Mills.* Burbidge's *The Art of Botanical Drawing* (Winsor & Newton).

DECIDUOUS SPRING-FLOWERING SHRUBS: *C. B. E.* Will you give me the names of two of these, about 3 feet, of roundish compact growth, for the edge of shrubbery. I want them to harmonise with Hydrangea and Weigelia (exposed to west wind). [Forsythia viridissima and Lonicera fragrantissima, a delightfully fragrant plant in spring. EDS.]

EVERGREEN FOR DWELLING-HOUSE: *Vigilo.* Cratægus Pyracantha.

GRAPES: *W. S., Exmouth.* 1, Buckland Sweetwater; 2, White Tokay, or some other hard-fleshed Grape of that class—we cannot be certain from the examination of a single berry.—*Warwickshire.* The berries were smashed into pulp when they reached us. It is useless to send such things through the post in cardboard boxes.

HYDRANGEA: *T. P.* 1, Yes, we should think so; 2, a good rich soil of any kind will do; the plant is not very particular in its requirements.

MARKET CROP: *Enquirer.* Probably Tomatos.

MUMMY PEA: *W. M.* This is the well-known fasciated variety of the common Pea, Pisum sativum. Its proper name is the Crown Pea. See our volume for 1873, p. 45. The mummy business is a fallacy, and, if

you care to have a few seeds, we can supply them for less than sixpence a piece.

PARASITE ON APPLE LEAVES: *H. Henderson.* The "strange-looking parasite" is no other than the eggs of the lacewing-fly, Chrysopa vulgaris (see fig 47).



FIG. 47.—CHRYSOPA VULGARIS.

The eggs, instead of being laid directly on the leaves, are fixed to the end of slender footstalks, about half an inch in length, which are formed from a viscous matter secreted by the female.

NAMES OF FRUITS: *Lydia.* The Plum is the old Orleans. The numbers belonging to the Apples got mixed with the wool packing, and were not observed until after the Apples were unpacked, their identity being thus lost. The three smaller ones are all Hawthornden, the large coloured one Mére de Ménage, and the other we are not quite sure of.—*William Potten.* Devonshire Quarrenden we should say.—*H.* The Apple is unripe, and we do not recognise it.—*G. B.* 1, rotten; 2, Prince of Wales; 3, Orleans; 4, Coe's Golden Drop.

NAMES OF PLANTS: *W. W. A.* Sarcanthus pallidus. —*H. M. K.* Xeropera Loddigesii. —*C. F.* 1, Magnolia tripetala probably; 2, Kleinia repens; 3, Juniperus virginiana var. Leeana. —*Ignoramus.* Polygonum cuspidatum, judging from the leaf only.—*Cranston & Co.* Equisetum arvense.—*J. Leman.* 1, Phytolacca decandra; 2, next week. 3, Thomasia solanacea. —*G. M.* 1, Spiræa Douglasii; 2, apparently the common Dead Nettle, Lamium album — specimen wretched; 3, Ammobium alatum; 4, Sanguisorba officinalis; 5, Eupatorium sp.—specimen miserable. —*P. N. F.* Polypodium suspensum; we have not seen cultivated plants.—*W. A. G.* 1, Lastrea patens; 2, Pteris longifolia; 3, Adiantum hispidulum; 4, Selaginella; 5, some Davallia—imperfect; 6, Pteris cretica.—*Miss Stackhouse.* 1, Campanula pusilla; 2, Sedum Sieboldii variegatum; 3, Sedum spurium; 4, Muhlenbeckia complexa.—*H. M. E.* Chelone Lyoni. —*O.* Francoa sonchifolia.—*G. B.* 5, Hæmanthus puniceus; 6, indeterminable without flowers. —*M. T. M.* Morinda citrifolia.—*G. H. P.* One of the numerous varieties of Salix cinerea.—*A. B.* 1, 2, 3, and 6, Geranium sylvaticum; 5, G. collinum; 4, 7, and 8, G. ibericum.—*G. S.* 1, too young to name; 2, Chamærops Martiana; 3, Begonia Ingrami. —*T. R.* Viburnum Awafurka.—*W. D.* Mimulus cardinalis.—*W. E. H.* Myrica Gale.

ONIONS: *J. G. Mitchinson.* Some of the bulbs are, no doubt, white Spanish, but they appear to be of an inferior sample. The question of liability for loss is a legal one, which we cannot undertake to decide.

PHLOX DRUMMONDII: *R. J. W.* There are many much handsomer varieties in cultivation, though yours appears to be distinct.

THISTLE GALL: *T. B.* The Fig-like gall on the

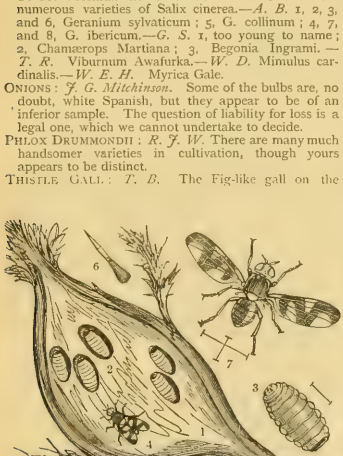


FIG. 48.—TEPHRITES CARDUI.

Thistle is the work of a two-winged fly, Tephrites Cardui (fig. 48), whose grubs may be seen in the gall.

POTATOS FLOWERING: *T. H. H.* Early May and the Ashleaf Kidney Potatos so rarely flower that they are practically regarded as flowerless kinds. This same feature, however, characterises nearly all first early sorts, owing probably to the early maturation of their tubers precluding a growth sufficiently robust to produce flowers. In the case of the true Ashleafs it has been found necessary, when wanted to produce flowers for crossing purposes, to grow them in pots under glass, and then not always with the required results. It may be taken as certain that any assumed stocks of the above-named Potatos, if flowering sufficiently to attract notice, cannot be true.

RHUBARB: *F. H. S.* Mitchell's Royal Albert or Dancer's Early Scarlet. Light is not necessary.

VEGETABLE MARROW PRESERVE: *Subscriber.* The recipe was given in our number for October 6, 1877, which may be obtained from the Publisher.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors,*" and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

ERRATUM.—In the report of the Fruit Crops at Belvoir (p. 208), instead of saying *all* my Apple trees lost their fruit, it should have been "many of them." I have still trees with good crops. *W. I.*

CATALOGUES RECEIVED.—Messrs. Dickson & Robinson (12, Old Millgate, Manchester), Descriptive Catalogue of Hyacinths and other Bulbs, Roses, Clematis, Decorative Plants, &c.—B. S. Williams (Victoria and Paradise Nurseries, Upper Holloway, London, N.), General Bulb Catalogue, also Fruit Trees, New Plants, Roses, &c.—A. M. C. Jongkindt Coninck (Tottenham Nurseries, Dedemsvaart, Zwolle, Holland), Price List of Hardy Perennials, &c. — Messrs. Wm. Cutbush & Son (Highgate, London, N.), Descriptive Catalogue of Hyacinths, Tulips, and other Bulbs.—Louis de Smet (Ledeberg-lez-Gand, Belgium), Supplementary Catalogue of New Plants, &c.—Messrs. Kerr & Fotheringham (Dumfries), List of Potatos; also Catalogue of Dutch Flower Roots, &c.—Messrs. Carter & Co. (High Holborn, London, W.C.), Catalogue of French imported Dutch Flower Roots. Roses, &c. — Messrs. Sutton & Sons (Seedsmen, Reading), Catalogue of Bulbs, Seeds, Plants, &c.

COMMUNICATIONS RECEIVED: C. & R. Salvia. J. H.—O. J. O.—W. I.—A. R. (next week).—W. E.—C. Y. M.

Markets.

COVENT GARDEN, August 22.

The same remarks as last week apply to this, except that Filberts and Cobs have met with a more ready sale. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 0- 4 0		Oranges, per 100	6 0-12 0	
Figs, per dozen	1 6- 4 0		Peaches, per dozen	4 0-12 0	
Filberts, per lb.	0 6- 0 9		Pears, per doz.	1 0- 3 0	
Grapes, per lb.	0 6- 4 0		Pine-apples, per lb.	2 0- 8 0	
Lemons, per 100	4 0-12 0		Plums, ½-sieve	2 6- 5 0	
Melons, each	3 0- 8 0				

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0- 4 0		Herbs, per bunch	0 2- 0 4	
Aubergines, p. doz.	3 0-		Horse Radish, p. bun.	4 0-	
Beans, French, lb.	0 4- 0 6		Lettuces, Cos, Eng., per score	1 6- 2 6	
— runners, p. bush.	4 0- 6 0		Mint, green bunch	0 4- 0 6	
— broad, per bush.	3 0-		Onions, young, bun.	0 4- 0 6	
Beet, per doz.	0 2- 0 0		Parsley, per bunch	0 4-	
Cabbages, per doz.	1 0- 2 0		Peas, green, per qr.	2 6- 3 0	
Carrots, per bunch	0 4- 0 6		Radishes, per bunch	0 1- 0 3	
Cauliflowers, per doz.	4 0- 6 0		— Spanish, doz.	1 0-	
Celery, per bundle	1 6- 2 0		— New Jersey, doz.	2 0-	
Chilis, per 100	5 0-		Shallots, per lb.	0 6-	
Cucumbers, each	0 4- 1 6		Spinach, per bushel	2 6- 3 0	
Custard Mar., doz.	3 0-		Tomatos, per dozen	2 6- 3 0	
Endive, Batav. dozen	1 6-		Turnips, new, p. bun.	0 6-	
Garlic, per lb.	0 6-		Vegt. Marrows, doz.	2 0-	

Potatos are very plentiful, and in some places much diseased. Prices range:—Myatt's, 12*s.* to 16*s.*; Regents, 10*s.* to 13*s.*; Early Rose, 11*s.* to 12*s.* per ton.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	4 0-12 0		Fuchsias, per dozen	4 0-18 0	
Bouvardias, do	12 0-24 0		Hydrangeas, per doz.	12 0-18 0	
Calceolarias, p. doz.	4 0-12 0		Mignonette, per doz.	3 0- 9 0	
Campanula, per doz.	6 0-12 0		Musk, per dozen	2 0- 6 0	
Coleus, per dozen	3 0- 9 0		Myrtles, per doz.	6 0-12 0	
Cyperus, do.	6 0-12 0		Palms in variety, each	2 6-21 0	
Dracæna terminalis	30 0- 0 0		Pelargoniums, per dozen	6 0-24 0	
— viridis, per doz.	18 0-24 0		— scarlets, zonal, per dozen	2 6- 9 0	
Euonymus, var., doz.	6 0-24 0		Petunias, per dozen	4 0-12 0	
Ferns, in var., doz.	4 0-18 0		— Fairy, per doz.	9 0-12 0	
Ficus elastica, each	2 6-15 0				

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6- 1 0		Mignonette, 12 bun.	2 0- 6 0	
Asters, 12 bunches	3 0- 9 0		Myosotis, 12 bun.	3 0- 6 0	
Bouvardias, per bun.	1 0- 4 0		Pelargoniums, 12 spr.	0 9- 1 6	
Calceolaria, 12 bun.	6 0-12 0		— zonal, 12 sprays	0 4- 1 0	
Carnations, 12 bunch.	4 0-12 0		Phlox, 12 bunches	6 0-12 0	
Cornflower, 12 bun.	2 0- 6 0		Primula, double, per bunch	1 0- 2 0	
Dahlias, 12 bunch.	3 0- 9 0		Pyrethrum, 12 bun.	3 0- 6 0	
Delphinium, 12 bun.	6 0-12 0		Roses (indoor), doz.	1 6-12 0	
Eschscholtzia, 12 bun.	2 0- 6 0		— (outdoor), 12 bun.	3 0-12 0	
Eucharis, per doz.	4 0-12 0		Stephanotis, 12 sp.	3 0- 9 0	
Gardenias, 12 blms.	3 0- 9 0		Stocks, 12 bunches	4 0- 9 0	
Gladioli, various, 12 spikes	1 0- 4 0		Sweet Peas, 12 bun.	2 0- 6 0	
Heliotropes, 12 sp.	0 6- 1 0		Sweet Sultan, 12 bun.	6 0- 9 0	
Jasmine, 12 bunches	4 0- 9 0		Tropæolum, 12 bun.	1 0- 4 0	

SEEDS.

LONDON: *Aug.* 21.—For the time of year, and for the season, a fair amount of activity is now observable on the seed market. The articles most in request, and which are needed for immediate use, are Trifolium incarnatum, Mustard, and Rape seed: as the land gets cleared the demand for all three varieties will increase. The weather having latterly been unfavourable for harvest operations, and the country, moreover, being unusually well supplied with feed, there is less inquiry than is ordinarily the case for autumn-sowing seeds. Trifolium moves off at late rates; the quantity coming forward is very small. A few samples of white Mustard of the 1878 crop have been shown, but the condition of most of them is unsatisfactory. There is no change in the value of Rape seed. Winter Tares are not as yet in large supply, consequently the moderate prices at which they opened have been well maintained. The same can be said of the new English Rye. With respect to red Clover seed there is no fresh feature; the plentiful surplus which it is expected America will have to send us will probably keep quotations at a reasonable level. Trefoils now offer freely, but the prices asked are too high to encourage business. Less favourable reports are now to hand of the American Timothy crop. Canary seed keeps firm at the late advance: in Holland a further considerable rise has been established. Linseed is steady. There is no alteration in the price of Marrowfat Peas: the crop proves disappointing in all parts of England. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the market wore a steady appearance, the prices of last week being well supported, and in some instances rather exceeded. The supply of new English Wheat on sale was unimportant, and quotations were as previously noted, the very finest samples being worth perhaps 54*s.* per quarter. English Wheat of last year's growth attracted little or no attention, the quality and condition being very poor. Foreign produce was held for an occasional advance of 1*s.* per quarter upon the rates of Monday se'nnight. Barley was quiet on former terms, as also were malt and Maize. Oats were rather better in price—say 3*d.* per quarter, and a firm market prevailed for Beans and Peas. Flour was quiet, but well held.—Trade on Wednesday was very quiet and prices not very well supported. The weather the previous few days had been propitious for the ingathering of the crops, and reports speak well of the character of those of Wheat. New English Wheat may be quoted steady, but as regards foreign there was no distinct change, business being quite unimportant. Barley was dull. Malt was nominally the same, and in the case of Oats, Maize, and other kinds of produce, the small amount of business concluded was at about the rates of Monday.—Average prices of corn for the week ending August 17:—Wheat, 42*s.* 2*d.*; Barley, 33*s.* 3*d.*; Oats, 26*s.* 1*d.* For the corresponding period last year:—Wheat, 64*s.* 9*d.*; Barley, 32*s.* 9*d.*; Oats, 27*s.* 10*d.*

CATTLE.

At Copenhagen Fields on Monday there was a large supply of beasts, including about 1300 Americans, and trade was active. Late prices were generally well maintained. The number of sheep was larger than of late, there being about 2000 from America. There was an active demand for choice qualities at a slight advance in price. The lamb season is now far advanced, and trade was consequently dull. Choice calves were readily disposed of. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 8*d.*; lambs, 6*s.* 8*d.* to 7*s.* 6*d.*; pigs, 4*s.* to 4*s.* 8*d.* — On Thursday beasts sold slowly, but without change from Monday. Sheep were in demand, and were disposed of on higher terms. Lambs sold at late rates, and calves were quiet and unaltered in value.

HAY.

Tuesday's Whitechapel report states that there was a moderate supply, and trade was rather better at firm prices. Prime old Clover was quoted at 120*s.* to 135*s.*; new, 100*s.* to 115*s.*; inferior, 80*s.* to 90*s.*; prime old meadow hay, 90*s.* to 100*s.*; new, 80*s.* to 85*s.*; and straw, 43*s.* to 53*s.* per load.—On Thursday there was a moderate supply of hay and straw on sale. The trade was steady for fine sorts, at full prices. Other kinds quiet. Cumberland Market quotations:—Superior old hay, 90*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; superior old Clover, 126*s.* to 135*s.*; inferior, 100*s.* to 110*s.*; new, 80*s.* to 105*s.*; and straw, 52*s.* to 56*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that the supplies of Potatos were moderate, but disease was very prevalent amongst them. Trade was steady. Regents, 80*s.* to 120*s.* per ton; Shaws, 50*s.* to 65*s.*; kidneys, 100*s.* to 130*s.*; Victorias, 100*s.* to 120*s.*; English Rose, 110*s.* to 140*s.*—During last week the imports into London were confined to 611 bags from Bremen, 201 Dunkirk, and 498 Hamburgh.

COALS.

The demand on Monday for best descriptions was dull at previous prices, but seconds advanced 6*d.* per ton. The quotations of Wednesday were as follows:—East Wylam, 16*s.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 16*s.* 3*d.*; Hawthorns, 16*s.* 3*d.*; Lambton, 17*s.*; Original Hartlepool, 17*s.* 6*d.*; Tunstall, 16*s.* 3*d.*; Chilton Trees, 16*s.* 9*d.*; Thornley, 16*s.* 6*d.*; Hetton, 17*s.*

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 22s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5s. 6d.; 5 bags, 25s.; 12 bags, 50s.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE.

As supplied by H. G. Smyth to the Queen, Prince of Wales, Emperor of Germany, Messrs. Carter & Co., Veitch & Sons, Wills, Bull, Daniels, Ewing, &c.

3½ per bush.; 100 for 20s.; truck (loose, 250 bush.), 30s.
4 bushel bags 4d. each.

LIGHT BROWN FIBROUS PEAT.—5s. 6d. per sack, 5 sacks 25s., 12 for 45s., and 36s. per ton.
BLACK FIBROUS PEAT.—5s. per sack, 5 sacks 22s., 12 for 40s. and 34s. per ton. Sacks 4d. each.
COARSE SILVER SAND.—1s. 9d. per bushel, 15s. half ton, 28s. per ton, in 1 cwt. bags 4d. each.
YELLOW FIBROUS LOAM.—1s. per bushel, 13s. half ton, 23s. per ton.
PEAT MOULD.—1s. per bushel, 15s. half ton, 28s. per ton, bags 4d. each.
SPHAGNUM MOSS, 8s. 6d. per sack. All kinds of MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH and PAPER, and every GARDEN REQUISITE.

Write for free PRICE LIST. Goods free to rail.
Post-office Orders payable at King Street, Covent Garden, W.C. Cheques crossed London and County Bank, Covent Garden, W.C.

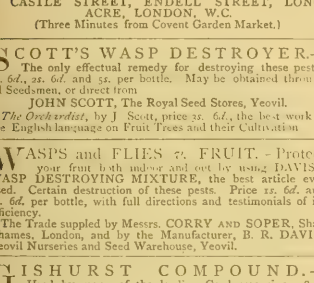
H. G. SMYTH,
8, CASTLE STREET, ENDELL STREET, LONG-ACRE, LONDON, W.C.
(Three Minutes from Covent Garden Market.)

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

WASPS and FLIES *v.* FRUIT.—Protect your fruit both indoor and out by using DAVIS'S WASP DESTROYING MIXTURE, the best article ever used. Certain destruction of these pests. Price 1s. 6d. and 2s. 6d. per bottle, with full directions and testimonials of its efficiency.
The Trade supplied by Messrs. CORRY AND SOPER, Shad Thames, London, and by the Manufacturer, B. R. DAVIS, Yeovil Nurseries and Seed Warehouse, Yeovil.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

Important to all Admirers of Clean, Healthy Foliage.



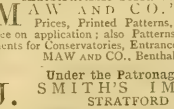
PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.
Mr. W. THOMSON, of *Pencel Vineyard, Clewsfords*, writes: —"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."
Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."
Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."
Sold in bottles at 2s., 3s. 6d., 6s., and 10s. each.
It is most economically applied with a Vaporiser, price 2s.
Prepared by Alfred Lowe, Pharmacist, Chesterfield.
Agents:—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Dick Radclyffe & Co., 128, High Holborn, W.C.; W. Cutbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co.; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Balmoral; Dorking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, E. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, T. Jackson & Son; Beverley, G. Swailes; Wavertree, J. Dewar & Co.; Newcastle-on-Tyne, J. Thompson; Worksop, T. Marris.
Agents wanted in every district.

THE GARDEN POTTERY,
Old Down, Shepton Mallet.
We try to be first, and we mean to be always first,
FOR COLOUR, MANUFACTURE, and WEATHER QUALITIES.
"I think your Flower Pots far better than any I have had from other potteries."—Mr. DART, *Gardener to the Right Hon. the Lady Waldegrave, Jan. 25, 1878.*—HYACINTH POTS.

Indestructible Terra-Cotta Plant Markers.
MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.
MAW AND CO., Benthall Works, Broseley.

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.

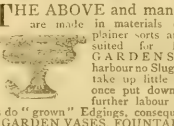


The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

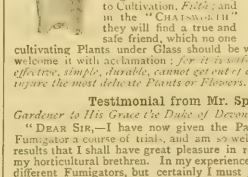


GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Paths, &c. Grooved and other Stable Paving of great durability. Coping, Chimney, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade

THE "CHATSWORTH"
VAPORISING FUMIGATOR.
(J. S. Ellis' Patent, No. 1395)
KILLS THRIPS, KILLS MEALY-BUG, KILLS RED SPIDER, KILLS SCALE, &c.
Price 37s. 6d.



This Fumigator has been designed on scientific principles, to supply a want long felt by Gardeners and Amateurs for an easy and effective method of fumigating them of that enemy to Cultivation, *Fire*; and in the "CHATSWORTH" they will find a true and safe friend, which no one cultivating Plants under Glass should be without, but should welcome it with acclamation: *for it is self-acting, thoroughly effective, simple, durable, cannot get out of order, and will not injure the most delicate Plants or Flowers.*

Testimonial from Mr. Speed,
Gardener to His Grace the Duke of Devonshire, Chatsworth.
"DEAR SIR,—I have now given the Patent 'Chatsworth' Fumigator a course of trials, and am so well satisfied with the results that I shall have great pleasure in recommending it to my horticultural brethren. In my experience I have tried many different Fumigators, but certainly I must give this the palm for being the most effectual; and, in fact, I could scarcely have believed the effect, when used with the Medicated Squibs, if I had not seen it myself: for the way it kills, not only Green and Black Fly, but Thrips, Red-Spider, Mealy-Bug, and most Scale, is a thing to be remembered.
"Its simplicity, of being self-acting and requiring no attention after it is once started (according to your directions), obviates the disagreeable necessity of remaining in the house during fumigation: for no damage can possibly arise from leaving it any length of time, as the combustion proceeds at a rate that is harmless; the fumes being vaporised before passing into the house make it quite safe to be left until the combustion is finished.
"THOMAS SPEED,
"The Gardens, Chatsworth, October 9, 1877.
"Mr. Ellis, Norfolk Foundry, Sheffield."
Manufactured by J. C. AND J. S. ELLIS, Hot-water Engineers and Horticultural Ironmongers, Norfolk Foundry and Baker's Hill, Sheffield.—Agents wanted.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S
STAR ANTHRACITE SMOKELESS STEAM COAL
is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.
WOOD AND CO. deliver in truck loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).
WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.
Tottenham Nursery, London, N., Dec. 28, 1877.
To Messrs. Wood & Co.
Dear Sirs,—With reference to your enquiry respecting the Star "Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,
(Signed) G. BECKWITH & SONS.
WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.
WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.
The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.
The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.
Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.
Extract from *Building News*.
"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."
Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire; and 19, Parliament Street, London, W.C.

HORTICULTURAL WINDOW GLASS.
A large variety of sizes, 15-oz., 12s. 6d.; 21-oz., 16s. 6d. per 100 feet. Large sizes, in Cases, for lasting up—15-oz. 4lbs., 30s.; 3ds, 40s. per 300 feet;—21-oz. 4lbs., 30s.; 3ds., 40s. per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

BELGIAN GLASS for GREENHOUSES, &c.,
Can be obtained in all sizes and qualities, of
BETHAM & SON,
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B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. & 21 oz.

PARIS EXHIBITION.
FOR PORTMANTEAUS, TRUNKS, *BAGS and HAT CASES*,
GO TO
RILEY & CO., 283, Strand (opposite Norfolk Street).
Also the TOURIST COMPANION. Store Prices.

TO ENHANCE THE VALUE OF
SEED,
IT SHOULD BE PUT INTO
BAGS
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SACKS,
SELECTED FROM OUR BEST MAKES,
WITH
SPECIAL SEWING.
SAMPLES AND PRICES POST FREE.

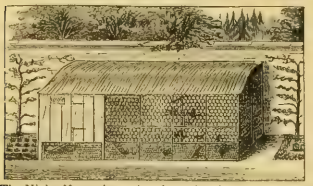
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H. FREEMAN AND SONS, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, Cambridge Heath Bridge, Hackney, E. Good substantial made GREENHOUSES, Glazed, ready for fixing, 42 feet long, 13 feet wide, £50; 21 feet by 13 feet, £28; 12½ feet by 10 feet, £15 Estimates given in wood or iron.

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NEW PORTABLE LEAN-TO POULTRY HOUSE.



The Night House is made of wood, painted green outside and lime-whited inside, with run underneath for shade and shelter; new O G-shaped galvanised roof, which is very ornamental, and affords good ventilation; fitted with shifting perches, sliding window, large door and lock for attendant, small door for fowls, and hen ladder, no nest boxes. Strong galvanised Wire Run, with corrugated iron roof, door, and lock, and all necessary bolts and nuts complete.

Prices. Carriage paid to any railway station in England:

1st size, No 7, with run complete, 12 feet long, 4 feet wide £7 5 0

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Oil Paint No Longer Necessary.



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HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitations, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877

"*The Rylets, Alderley Edge, Manchester*—Messrs. Hill & Smith.—SIRS,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted.—Yours respectfully, ALFRED LOWE, J.P."

Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.

CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

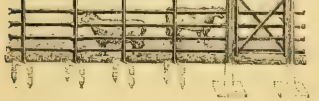
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SILICATE ZOPISSA COMPOSITION, all Colours, for Damp Walls, Preserving Stone, &c., either internal or external.

COLOURLESS LIQUID SILICATE ZOPISSA for Damp Walls, Preserving Stone, Brick, or Cement, all washable and durable.

To be had genuine only from the Original Inventors and Sole Manufacturers,

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(Established over fifteen years)



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CONTINUOUS BAR FENCING,

Iron Hurdles, Strained Wire Fencing,
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HORTICULTURAL ENGINEERS VENTILATING & SANITARY WARMING



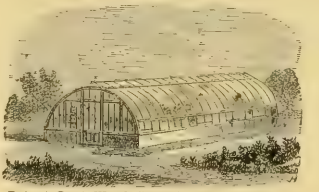
NEW CATALOGUE

Of CONSERVATORIES and GREENHOUSES in Wood and Iron, architecturally treated and designed expressly for this work. Post-free 1*s.*

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WORKS QUEEN'S WHARF HAMMERSMITH.

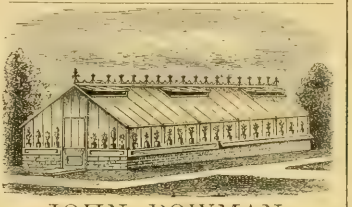
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121, BUNHILL ROW, LONDON, E.C.



Patent Bent Wood Curved Greenhouses and Conservatories.

ILLUSTRATED SHEETS sent post-free, and Estimates given for all kinds of Horticultural Work, without charge.



JOHN BOWMAN,

Timber and Mahogany Importer and Merchant,
HORTICULTURAL BUILDER,
WEST END STEAM JOINERY,
NEWCASTLE-ON-TYNE.

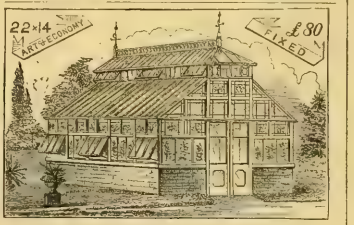
GREENHOUSES complete, from £10 to £1000.

PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. £3 5*s.*

PORTABLE BOX with TWO LIGHTS, as above, each Light 6 feet by 4 feet .. .. £6 5*s.*

Estimates given for Conservatories and Greenhouses of every kind.

Well-seasoned Materials and First-class Workmanship guaranteed



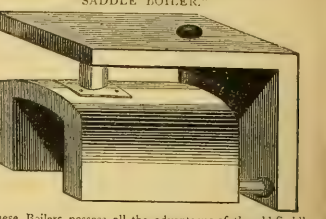
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24 ,,	24 ,,	24 ,,	700	12 0 0
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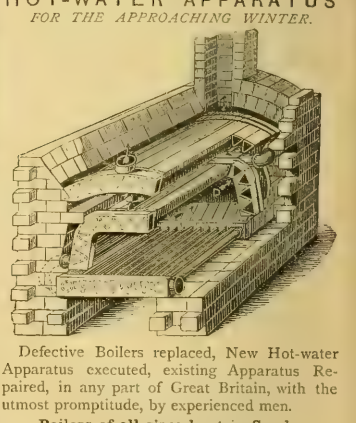
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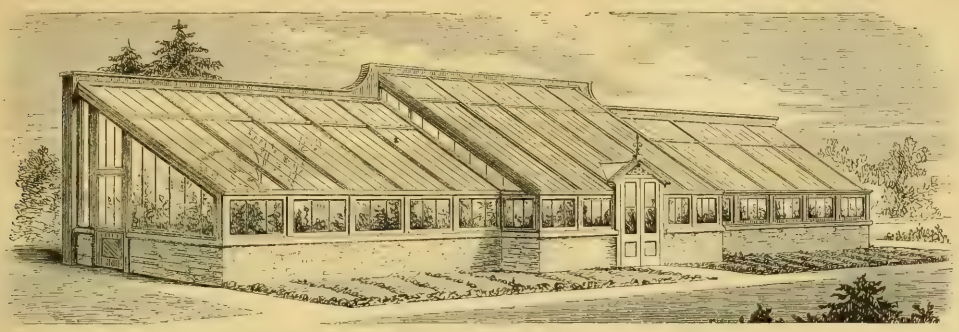
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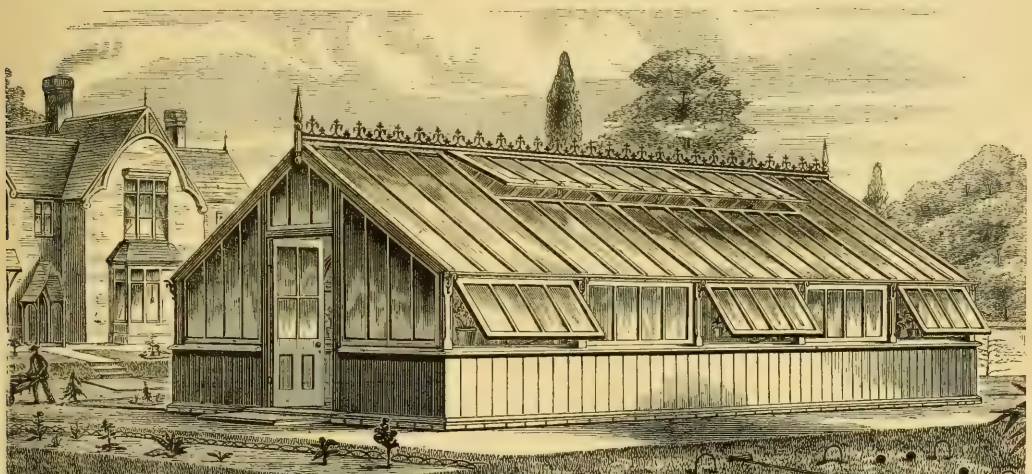
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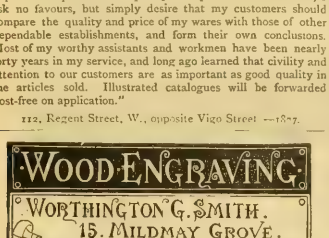
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"As it has been erroneously supposed by some that I am no longer interested in my London business, I think it desirable to state that I continue to carry it on as energetically, and I trust as satisfactorily to the Public, as formerly, assisted by my only son, who will in due time succeed me. It is now fifty years ago since I first commenced business in Leadenhall Street, and what changes have taken place! Then everybody shaved, and my razor and razor-strop trade was immense; now moustache and beard are the order of the day, and the razor and strop trade is comparatively defunct. Then there were no railways, so people stayed at home and used wooden dressing-cases; now everybody travels by rail, and we have dressing-bags to suit the altered conditions. Fifty years ago the poor geese supplied our pens, and many a now rich merchant in the City will remember the quality of Mechi's shilling pen-knives; but steel pens have extinguished the pen-knife trade and the penmaking machines, and the geese are in peace, except at Michaelmas. In fact, steam has altered, and, I may safely say, improved everything, and has made us a nation of travellers both by land and sea. I wonder how much time is now occupied in reading the steam-worked press? and how much less time is occupied in sipping port wine, as we used to do fifty years ago, when we could not travel? Steam will make our 4 lb loaves cheaper some day, just as it has converted calico from 2*s*. 6*d*. to 6*d*. or less per yard. Then, again, a letter which used to cost 6*s*. 6*d*. to Cork is now carried for 1*d*. Sir Rowland Hill richly deserves a monument. But to return to business: fifty years ago, when I first commenced on a small scale, I made it an axiom that what I sold should be good and useful, and I believe thousands who used the strop and paste, which I personally invented, can testify to this; it fact, it was sometimes complained of that I stamped on my razors 'Exchanged if not approved.' I have never, and shall never so long as I live, deviate from this principle, because it is the true means to retain and increase one's connection. I devoted my attention especially to the quality and convenience of arrangements in the dressing bag and dressing case department, and in the tasteful selection of articles suitable for presentation, as well as on the matter of dispatch boxes and writing cases. Although both razors and penknives have 'gone out,' our sportsmen remain, and 'sporting knives' form one of our special departments. I feel firmly convinced that there is no fear of the departure of knives and forks, or dinners, so we make this an important department in quality and price. In conclusion, I ask no favours, but simply desire that my customers should compare the quality and price of my wares with those of other dependable establishments, and form their own conclusions. Most of my worthy assistants and workmen have been nearly forty years in my service, and long ago learned that civility and attention to our customers are as important as good quality in the articles sold. Illustrated catalogues will be forwarded post-free on application."

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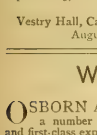
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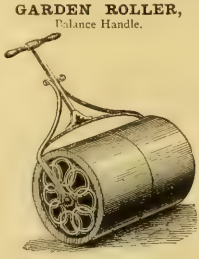
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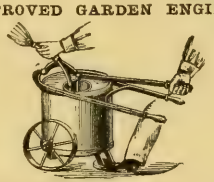
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10 feet of India-rubber Suction Pipe, with Clip and Strainer.. 1	10 0

Powerful Garden and Conservatory Engine.

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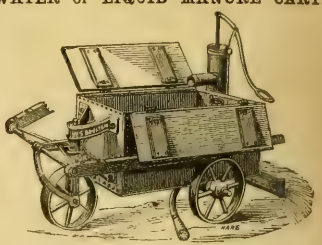
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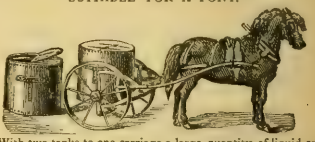
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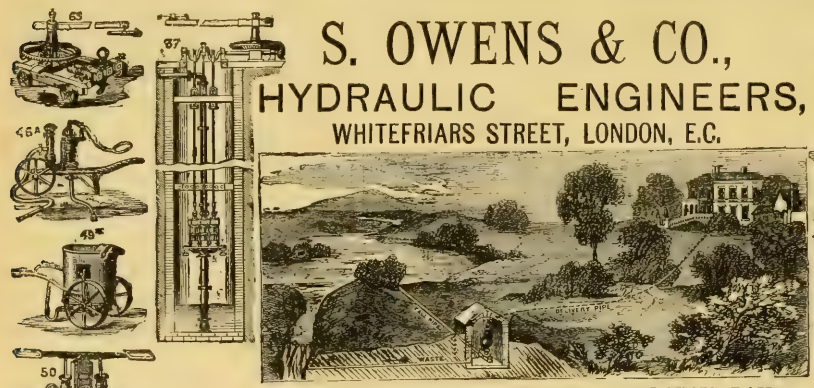
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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With the Number for Saturday next, Sept. 7, will be presented a Coloured Plate of

"CHOICE HYACINTHS."

NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to
Mr. THOMSON, Crystal Palace.

THE INTERNATIONAL POTATO EXHIBITION will be held at the Crystal Palace, Sydenham, on SEPTEMBER 24 and 25. Last day of entry, September 17. Schedules and all particulars may be obtained on application to
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EDWARD CARPENTER, Secretary.

NOTICE.—The PRIZES we offered for the best SINGLE BUNCH of MRS. PEARSON and GOLDEN QUEEN GRAPES, will be awarded by the Committee of the Royal Horticultural Society at their meeting of October 15, at the South Kensington Gardens. The prizes are £5, £2, and £1, for each variety.
J. R. PEARSON, Chilwell, Notts.

NOTICE.—I hereby give Notice that Mr. GEORGE CROMAR is no longer in my employ, and is not authorised to collect any moneys on my account. His present address is wanted.
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TO THE TRADE.

HURST AND SON beg to offer New Seed of CLIANTHUS DAMPIERI, in fine condition. Price on application.
6, Leadenhall Street, London, E.C.

To the Trade Only.

DUTCH BULBS at DUTCH PRICES.—Hyacinths, Tulips, Crocus, Narcissus, Begonias, Christmas Roses, Gloxinias, Caladiums, Novelties in Bulbs and Roots, Anemone fulgens, Snowdrops, &c. Quality extra. Prices low. Catalogue on application to
F. SANDER AND CO., Seed Growers, St. Albans.

ORCHIDS.—Thousands of choice Orchids, from Assam, Brazil, the West Indies, and from the cool mountain ranges of Columbia, carefully selected by the Travellers of the New Plant and Bulb Company, Lion Walk, Colchester, have arrived in fine masses and in excellent condition. Orchid Growers are respectfully requested to make an early application, so as to secure the strongest pieces.

To Amateur Strawberry Growers.

RUNNERS, strong and well rooted, are now ready, from H. de Thury, President, Sir J. Paxton, and British Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants, post-free, 1s.
Manual on Strawberry Culture, 6d.
W. LOVELL, Strawberry Grower, Weaverthorpe, York.

B. MALLER begs to announce that his Stock of ERICAS, SOLANUMS, BOUVARDIAS, CAMELLIAS, AZALEAS, ADIANTUM CUNEATUM, GREVILLEAS, FICUS ELASTICA, PALMS, VINES, &c., is very extensive, and in excellent condition this season. The usual Trade Sale will be held in September. An inspection is respectfully solicited.
Burnt Ash Nursery, Lee, S.E.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.
CATALOGUES and Prices on application. Special terms to the Trade.
HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

STRAWBERRIES.—The fact of my being situated in the midst of hundreds of acres of all the best and most profitable kinds enables me to offer unusually fine plants, and perfectly true to name. All those who wish to grow for gain should have the Kentish well-known varieties.
CATALOGUE, with valuable information, post-free.
H. CANNELL, Swanley, Kent.

TREE FERN.—Dicksonia antarctica, height of stem 3 feet 1 inch, circumference 24 inches, fine head. Price £4 4s.
GEORGE FOX, Old Leake, Boston.

CINERARIAS.—About 1000 strong seedling plants to be sold cheap, in one or more lots. From selected plants, many Blues. Very strong plants, 6d. per dozen, not less than ten-dozen lot.
R. SMITH, Kenward Gardens, Yalding, Maidstone, Kent.

Deutzia gracilis and Cupressus macrocarpa.

R. AND G. NEAL have the above to offer in quantities. Sample and price on application.
The Nurseries, Wandsworth Common, S.W.

STRAWBERRY PLANTS.—Strong and well-rooted Runners can be had of the following sorts:—James Veitch, Sir Joseph Paxton, Eleanor, and British Queen. The fruit from the British Queen has been pronounced the finest in the market. Price List on application.
A. WHITEHEAD, Oakwood, Chislehurst.

DRIED FLOWERS, GRASSES, MOSS, IMMORTELLES, BOUQUETS, WREATHS, BASKETS, cheap, in finest quality. Price Lists on application.
N. BOETTNER, Romhild, Germany.

CHINESE PRIMULAS, 1s. per dozen; CINERARIAS, 3s. per 100.
A. AND E. BUNGEROTH, Woolton, near Liverpool.

BEGONIA SEED—Saved from exceedingly beautiful varieties of the handsome-flowered tuberous-rooted section. The flowers have been carefully fertilised, so that splendid new kinds may be expected from this seed. 1s. 6d. and 2s. 6d. per packet.
PRIMULA, CINERARIA, and CALCEOLARIA, from Prize Strains, the best that can be purchased, each at 1s. 6d. and 2s. 6d. per packet.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

SALES BY AUCTION.

Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, September 9, at half-past 12 o'Clock precisely, HYACINTHS, TULIPS, CROCUSES, NARCISSUS, JONQUILS, IRIS, SNOWCROPS, and other BULBS, just received from well-known farms in Holland, lotted to suit private buyers and the trade.
On view morning of Sale, and Catalogues had.

Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 4, at half-past 12 o'Clock precisely, 14 Cases (570 Lots) of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, JONQUILS, IRIS, SNOWDROPS, and other BULBS, just arrived from well-known farms in Holland, lotted to suit private buyers and the Trade.
On view morning of Sale, and Catalogues had.

Ferns, Orchids, and Specimen Stove and Greenhouse PLANTS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 5, at half-past 12 o'Clock precisely, a quantity of SPECIMEN PLANTS of very fine and distinct varieties of BRITISH FERNS, suitable for exhibition, from the well-known collection of the late Mr. Sim, of Foots Cray; also an importation of NEW ZEALAND FERNS; a collection of ESTABLISHED ORCHIDS, comprising many rare and valuable kinds; eleven varieties of PITCHER-PLANTS; an importation of a new DENDROBIUM from New Guinea; a collection of SPECIMEN PLANTS for Table Decoration; and a collection of STOVE and GREENHOUSE PLANTS, the property of a Gentleman changing his residence.
On view morning of Sale, and Catalogues had.

Botanical Books.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, September 6, at half-past 12 o'Clock precisely, a small Library of BOTANICAL BOOKS, including works by Lindley, Curtis, Paxton, R. Sweet, J. E. Smith, Sydenham Edwards, Hooker, Loudon and other authors.
On view morning of Sale, and Catalogues had.

Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, September 10, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low and Co., a quantity of ODONTOGLOSSUM VEXILLARIUM, strong plants of CATTLEYA GIGAS, CATTLEYA LODDIGESI or HARRISONIÆ, BURLINGTONIAS, and other choice Orchids, just received. At the same time will be offered two plants of MASDEVALLIA BELLA, described by Professor Reichenbach in *Gardeners' Chronicle*, June 8; MASDEVALLIA HYPODISCUS, described in *Gardeners' Chronicle*, August 24; established plants of PHALÆNOPSIS SCHILLERIANA, P. LUDDEMANNIANA, CATTLEYA DOWIANA, ODONTOGLOSSUM SCHLEIPPERI, &c.
On view morning of Sale, and Catalogues had.

Auction Mart, Tokenhouse Yard, London, E.C.
Opposite the Bank of England.

MESSRS. PROTHEROE AND MORRIS announce that GREAT UNRESERVED SALES of DUTCH FLOWER ROOTS of the finest quality, consisting of the choicest varieties of double and single HYACINTHS, TULIPS, NARCISSUS, JONQUILS, SNOWDROPS, &c., lotted to suit the trade and private buyers, will take place EVERY MONDAY, commencing September 9 and ending December 9.
N.B. Messrs. P. & M. will have great pleasure in executing commissions for Gentlemen who cannot attend the Sales.
Horticultural Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex.—Three Days' Sale.

EXTENSIVE ANNUAL SALE of WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, on WEDNESDAY, September 11, and TWO FOLLOWING DAYS, at 11 for 12 o'Clock precisely each day, 25,000 WINTER-BLOOMING HEATHS, remarkably well grown, and including about 8000 hyemalis, 4000 gracilis, 500 Wilmoreana, large quantities of grandiflora, Cavendishii, ventricosa, and other excellent varieties; 4000 Epacris of the choicest kinds, 2000 Cyclamen persicum, 300 Genista fragrans, Bouvardias and Gardenias of sorts, Lapagerias, Azalea indica, Tea-scented and other Roses, Solanum capsicastrum in berry, a quantity of miscellaneous Greenhouse Plants, including large Chrysanthemums; also about 20,000 healthy young Erica hyemalis, and 2500 strong Epacris in small pots for growing on.
May now be viewed; Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Upper Halliford, Middlesex.

Near railway station, adjoining the line, and about midway between the River Thames and Kempton Park Racecourse.
A MOST ADVANTAGEOUS SPECULATION.

MR. WOODS has been instructed by the Executors to SELL by AUCTION, at the Mart, London, on MONDAY, September 9, at 2 o'Clock (unless a suitable offer is made privately in the interim), a valuable, newly built, long LEASEHOLD RESIDENCE—two reception, five bedrooms and offices, Farnyard, Two Cottages, and 35 acres of first-class LAND, part arable, part meadow, and part fruit plantation—now worked as a farm and market garden, but ripe for conversion into a fine building estate, being held direct from the freeholder for nearly ninety-nine years, at the very low ground rent of £6 10s. per acre.
May be viewed, and particulars obtained of Messrs. FARNELL AND BRIGGS, Solicitors, Isleworth; and of Mr. WOODS, Auctioneer, Hounslow.

TO LET, from Michaelmas next, a MARKET GARDEN (Walled)—about 2½ acres, with a Gardeners' Residence, Stable, Piggeries, &c. At Great Lodge Farm, within 2 miles of Tunbridge Wells.—For particulars and orders to view, apply to
The TOWN CLERK, Tunbridge Wells.

For Real Amateur Gardeners.

TO BE LET by the YEAR or on LEASE, near Carisbrooke, Isle of Wight, a TWELVE-ROOMED HOUSE in perfect repair, with Kitchens and usual Offices, Coach-house, and Stables. The Grounds are large and productive, and on them are some Trees of an unusal size. They contain large Lawns, Shrubberies, &c., Kitchen Garden, large Conservatory, Greenhouse, two Forcing Houses, Pits, and a long Fruit Wall; also a very large Run for Poultry. There are two Pumps and a small Pond on the premises. The whole has been managed by the proprietor, who is an amateur Gardener, during the last fourteen years.
For particulars apply to the OWNER (who courts personal inspection of the premises), Millbrook House, near Newport, Isle of Wight.

West of England.—(4446.)

Situate on the confines of an important and most thriving town.
FOR DISPOSAL, an extensive and well-known NURSERY, SEED, and FLORIST'S BUSINESS, which has been in existence for upwards of a century and a half. The Grounds cover an area of about 30 acres, and comprise a convenient detached Dwelling-house, Seed-shop, several extensive ranges of Glass, containing altogether about 55,000 feet super, fitted with all the modern appliances, and offering unusual facilities for turning out enormous quantities of Stock; commodious Outbuildings, and every requisite for doing a very large trade. Well selected and beautifully grown stock. Extremely productive soil. A certain portion of the Stock would have to be taken by valuation, but the Vendor would be prepared to Sell a considerable quantity by Auction. No charge for Goodwill. Satisfactory reasons can be given for relinquishing the business.
Rent and further particulars may be had from Messrs. PROTHEROE AND MORRIS, Horticultural Auctioneers and Agents, 98, Gracechurch Street, London, E.C.

Corn, Flour, and Seed Trade.

WANTED, about 20 or 30 miles from London, PREMISES adapted to the above business. STABLING and STORAGE ROOM necessary. A moderate Premium would be given for an established business that will bear the strictest investigation. Send full particulars to
Mr. L., 260, Cornwall Road, Kensington Park, W.

To the Trade.

NEW ENGLISH SOWING RAPE SEED.
H. AND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.
Fine Samples WHITE MUSTARD. Prices (with samples) may be had on application.
Seed Growing Establishment, Wisbech.

Hyacinths, Tulips, and Other Dutch Bulbs.

BUDDENBORG BROS., Hillegom, Haarlem, Holland, Wholesale CATALOGUE of the above now ready, and may be had of
Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Bulbs of all Kinds.

THE GENERAL AUTUMN CATALOGUE of the New Plant and Bulb Company, Lion Walk, Colchester, containing some splendid new Lilies, Tulips, Freesias, Iris, Crocus, &c, will be ready in a few days.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Fox Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

Hyacinths, Tulips, &c.

BUTLER, MCCULLOCH AND CO.'S CATALOGUE of the above is now ready, which also contains a copious list of Garden Necessaries and Culinary Requisites. Sent free and post-paid to all parts of the world.
Covent Garden Market, London, W.C.—Established upwards of a century.

MINIER, NASH, AND CO.'S CATALOGUE of HYACINTHS and other FLOWER ROOTS is now ready, and may be had on application.
Friends who have not received a copy will please write.
Liberal Discount for large Orders.
60, Strand, London, W.C.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to
S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

WATKINS AND SIMPSON beg to state that their wholesale CATALOGUE of Dutch, English and other Flowering Bulbs is now ready, and has been posted to all their customers; any one not having received same, will oblige by letting their know. They also wish to draw special attention to their Snowdrops, Narciss, Lily of the Valley, clumps and single crowns; American Tuberoses; Lilies, Scarlet, Martagon, and Orange, &c.
Special quotations for quantities on application.
1, Savoy Hill, Strand, W.C.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Flowering Aquatics and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.



DUTCH FLOWER ROOTS.—Now ready, our ILLUSTRATED CATALOGUE of Dutch Flower Roots, Roses, Fruit Trees, &c., containing forty-eight pages imperial size of beautifully illustrated letterpress, with new and original articles on Flower Roots and their Uses, the cultivation of Hyacinths, Tulips, &c., and a superbly finished coloured plate. This will be found the most useful, the cheapest and best Bulb Catalogue ever sent out, and should be read by all purchasers of flower roots before ordering. Price 6d. post-free; gratis to customers and intending purchasers.
DANIELS BROTHERS, The Royal Norfolk Seed Establishment, Norwich.

Great Eastern Railway Company.
DUTCH BULBS.

THE GREAT EASTERN RAILWAY COMPANY have now made special arrangements for the conveyance of Bulbs and Roots from Holland at a rate of 25s. per ton from Rotterdam to London, including delivery within the ordinary cartage limits. Traffic sent by this service will usually be delivered in London on the second day after shipment in Rotterdam. The Company have also instituted an Express Service for the carriage of Bulbs from Rotterdam to London at 45s. per ton, including delivery within the usual cartage limits. The Company guarantee delivery (against forfeiture of freight) the day after shipment in Rotterdam, the act of God alone excepted. The Company are prepared to quote throughout Rates from any town in Holland to any town in England. The Bulbs should be consigned to the Company's Agents, Messrs. Hudig & Pieters, Rotterdam, to whom full instructions (stating whether the Bulbs are to be forwarded by ordinary or express train) must also be sent. Senders are requested to address their cases in full, and to mark them "Bulbs" in large letters, so as to avoid the possibility of error or delay.
For further information, address The CONTINENTAL DEPARTMENT, Liverpool Street Station, London, E.C.

Park and Other Bedding.

H. CANNELL has large quantities of all those seen in the most choice designs, supplied either as Cuttings or Plants, now very cheap. CATALOGUES post-free.
Swanley, Kent.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

Bulbs for the Season.

CHARLES TURNER'S consignments of the above have arrived in fine condition. The roots are remarkably sound, and early orders are respectfully solicited.
CATALOGUES post-free on application.
The Royal Nurseries, Slough.

To the Trade.

ARALIA SIEBOLDII, very fine plants, in small 48 pots, at 6s. per dozen, or 40s. per 100.
CLEMATIS JACKMANNI, and other fine kinds, at 60s. per 100.
WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

THE BEST STRAWBERRY FOR ALL PURPOSES.—Short's EUREKA, the best for Forcing and Exhibition. Short's Eureka, the best for Dessert and Preserving. Short's Eureka, the best for Market and Travelling. Send for testimonials and price to
G. C. SHORT, Seedsman and Florist, Stokesley.

To the Trade.

C. WHITEHOUSE, Brereton Nursery, Rugeley, has to offer nice, straight, young, healthy HOLLIES, two years transplanted, good fibrous roots, 12 to 20 inches, most of them suitable for working, at 10s. per 100. Also fine one-year Seedling Hollies, at 5s. per 1000, for Cash. Now is a fine time to plant them.

Budded Camellias, Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate to his friends and patrons that his stock of the above is of usual excellence and ready for delivery at once. Also Ghent Azaleas, Azalea mollis, Spiræas, Lily of the Valley, Rhododendrons, and Ferns for furnishing, are of the very best quality. The whole at the most reasonable charges.
Wholesale prices on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

SUTTON'S CHOICE STRAINS OF FLORIST'S FLOWERS, POST-FREE.

CALCEOLARIA, Sutton's Perfection, 5s. and 2s. 6d. per packet.	PRIMULA, Sutton's Prize, 5s. and 2s. 6d. per packet.
CINERARIA, Sutton's Superb, 5s. and 2s. 6d. per packet.	CYCLAMEN, Sutton's Giganteum, 5s. and 2s. 6d. per packet.

The Queen's Seedsmen, Reading.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS,
Booked for autumn, 12s. per dozen, 75s. per 100.
CHARLES NOBLE, Bagshot.

Dracænas and Tree Carnations.

HENRY JAMES has first-class Plants of the above to offer at low prices for cash with order. Dracænas, finely coloured, in the well-known decorative varieties, Cooperi, terminalis, Guilfoylei, Hibbertii, ferrea and braziliensis, at 24s. and 30s. per dozen. Tree Carnations in the best leading kinds, including large quantities of La Belle, the best white, at 12s. and 15s. per dozen.
Castle Nursery, Lower Norwood, S.E.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.
Highgate, London, N., and Barnet, Herts.

The New

PRIMULA SINENSIS COMPACTA GRANDIFLORA.—The finest and largest new double white-fringed Primrose extant, of exceedingly sturdy and robust habit.
Opinion of Mr. WILLS:—"*The best white flower for bouquets.*" Price 4s 6d. per dozen.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

DUTCH FLOWER ROOTS.

JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEY HAVE RECEIVED THEIR

ANNUAL SUPPLY of HYACINTHS and other BULBOUS ROOTS

From HOLLAND,

And are pleased to say that they are in splendid condition.

CATALOGUES, Illustrated with upwards of Sixty Woodcuts, are now ready, and will be forwarded, post-free, on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

COUNT BRAZZA'S NEAPOLITAN VIOLETS

(BLUE AND WHITE).

Blooms rounder and larger than any variety in cultivation.

Colours, Dark Blue and perfectly White. The finest of all varieties for Buttonhole Bouquets.



COUNT BRAZZA'S NEAPOLITAN VIOLETS.
(From the *Gardeners' Chronicle.*)

OPINION OF THE
Gardeners' Chronicle,
April 6, 1878.

"Some time since, through the kind intervention of the Marquis Corti-Salviati, we received specimens of Neapolitan Violets, blue and white, from Count Savorgnan di Brazza, of Soleschiano, near Udine, about midway between Venice and Trieste, at the head of the Adriatic. As these much excelled all similar Violets which we had seen, we sought permission to have some of them engraved, and the illustration now given (fig. 74, p. 433) gives a fair idea of their size and regularity of form, and this at the end of the flowering season in January and February the blooms are yet finer. The plant is of very sturdy robust habit, with fine bold foliage and a profusion of flowers."

Plants, with Instructions, will be ready for delivery from September 10.

Of the white variety, there are no more plants at disposal, but orders can be booked for them for the flowering season of 1879.

Plants of the blue variety at the following rates :—

18s. per dozen.
10s. 6d. per half dozen.

Carriage free from Udine to London when two dozen or upwards are ordered.

Apply to the GARDENER of the Count Filippo Savorgnan di Brazza, UDINE, Italy.
Remittances to be made per post to the Agent of the Count Savorgnan di Brazza.

SPECIMEN HARDY FERNS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 5, at half-past 12 o'Clock precisely, a quantity of SPECIMEN PLANTS of very fine and distinct varieties of BRITISH FERNS, suitable for exhibition, from the well-known collection of the late Mr. Sim, of Foots Cray. Also an importation of NEW ZEALAND FERNS, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

STRAWBERRY PLANTS.—Well rooted strong runners of following varieties, purchaser's selection, 3s. 6d. per 100, our selection, 2s. 6d. per 100, 20s. per 1000, true to name :—Aromatic, Amateur, British Queen, Bicton Pine, Black Prince, Cornucopia, Comte de Zans, Crimson Queen, Comte de Paris, Dr. Hogg, Duke of Edinburgh, Elton Pine, Eleanor, Exquisite, Early Prolific, Enchantress, Eliza, Garibaldi, John Powell, Grosse Sucrée, Oscar, Marguerite, Lucas, Prince Arthur, Prince of Wales, President, Premier, Royalty, Sir C. Napier, Sir J. Paxton, Sabreur, Scarlet Pine, Souvenir de Kieff, Stirling Castle, Traveller, The Countess, Vicomtesse de Thury, Unser Fritz, Wonderful, W. J. Nicholson. Not less than twenty-five of a sort supplied at 100 rate ; 100 plants in twenty sorts, 5s. ; 100 in fifty sorts, 7s.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To the Trade.

C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices :—
100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.
100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
1000 SPIRÆA JAPONICA, colossal clumps, at £6.
A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

J. APERS, NURSERYMAN, Loochristy, near Ghent, Belgium, offers the following splendid stock of healthy, well-shaped, and richly-budded Plants :—
CAMELLIAS, at £5, £6, £7, and £8 per 100.
CAMELLIAS, very large, at 21s., 25s. and 42s. each.
AZALEAS, Indian, £5, £6, £7, and £8 per 100.
AZALEAS, large Indian, at 21s., 25. 6d., 31s., and 42s. each.
AZALEA MOLLIS, from seed, at £5, £6, £7, and £8 per 100.
AZALEAS, hardy Ghent, at £4, £5, £6, £7, and £8 per 100. Larger, 25., 31s., and 42s. each.
RHODODENDRONS, at £6, £7, £8, and £12 per 100. Larger, 31s., 42s., 52s., and 63s. each.
The DESCRIPTIVE CATALOGUE may be had on application to
Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

LAMIUM MACULATUM AUREUM, 31s. per 100.
In the *Revue de l'Horticulture Belge et Etrangère* of April 1, 1877, Mr. Edward Pynaert gives a coloured plate of this beautiful perennial, and says :—"The Lamium maculatum aureum has about the same colour, the same regular growth, as the Pyrethrum parthenifolium aureum, which is generally used for carpet bedding, but is to be preferred to Pyrethrum, because of its being perfectly hardy and keeping its beautiful foliage in winter like in summer."
HARDY PERENNIALS suitable for WINTER CARPET-BEDDING.

Antennaria tomentosa, 10s. per 100.	Sedum, in many sorts, 25s. per 100.
Artemisia Stelleriana, 17s. per 100.	Sempervivum, in many sorts, 25s. per 100.
Cerastium Biebersteinii, 9s. per 100.	Stachys lanata, 10s. per 100.
Dactylis glomerata fol. arg. var., 25s. per 100.	Thymus citriodorus fol. aureo-marg., 9s. per 100.
Festuca glauca, 25s. per 100.	Thymus lanuginosus, 9s. per 100.
Lamium maculatum aureum, 33s. per 100.	Thymus montanus albus, 9s. per 100.
Mentha piperita fol. arg. var., 17s. per 100.	Trifolium repens nigrescens, 17s. per 100.
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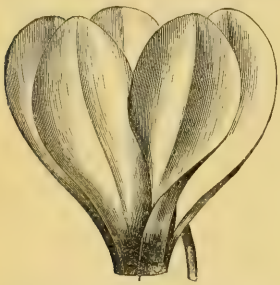
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SATURDAY, AUGUST 31, 1878.

SWALLOWS AND MARTINS.

ONE evening towards sunset early in July I was sauntering among hay fields; some mowers were taking their last cuts in a line with the hedge, and I had stopped to watch the completion of their task, when my attention was taken by a number of swallows and martins hawking in a field of Peas. A light wind was blowing off the meadow, and at every stroke of the scythe a little cloud of moths and butterflies was disturbed and carried into the Pea-field, as pheasants are sometimes beaten up at the corner of a cover. The swallows were twittering with delight, and I witnessed for a short time a very animated scene. The swallows and martins swept through the air in all directions, coming close up to me sometimes, flying, floating, flitting in all directions, and snapping up the prey. Their victims numbered tens of thousands. Sometimes the scene shifted, and the birds retired to the further end of the field, as if satiated with their feasting, and then back they came to renew it. An insect, seized, went instantly out of sight, tossed down with a snap of the bill as quickly as a dram-drinker swallows off his glass.

A novel incident at length interrupted these proceedings. A cat had hidden in the hedge, and presently she sprang out and caught a swallow in its flight. The bird had flown close to the cat's hiding-place, had paused there one fatal instant to catch some winged insect, and then had suddenly found the tables turned and itself a prisoner, irrevocably doomed. In Nature the death of a destroyer is occurring every instant, and the fear of fate is universal among creatures who are continually killing and swallowing till they are themselves snapped up. The swallows accordingly, young and old, showed much alarm at the untoward interference of the cat, and the capture, beneath their very bills, of their unfortunate companion. There was a general screech and a rapid retreat and hurrying away from the spot, while puss, the avenger of butterflies (who will herself be caught in a trap some day), stood an instant with the bird in her mouth, looked around, swore a little, after the manner of cats, and then moved off with her prize.

This is an illustration of the universal law of interdependence, from whose operations no one, be he a so-called lord of the creation or a languid slug, can escape. It is a necessary consequence of our being, and might lead us to form a lower estimate of our own perfections, a more charitable opinion of others, and to feel a greater sense of dependence both on things above and things below us. It is possible, as Edward Forbes used to say, that the march of a periwinkle may be of more consequence to humanity at large than the triumphal progress of an Alexander. It is the element of time which makes the great difference, and in the history of the universe what are a score or two of centuries?

There is a notion among some persons in this district that swallows and martins have diminished in number in recent years. I am by no means convinced that it is so; meanwhile they give their reasons. We live in a South-down district where the wheatear abounds, and the swallow is said to have been largely marketed as a substitute for the wheatear. If this be true the public, to say nothing of the poulterer, must

be very easily deceived, and the Small Birds' Preservation Act must be set at naught.

The swifts left our neighbourhood this year the third week in August. They migrate before the swallow, but could hardly have left the country at that early date. *H. E.*

New Garden Plants.

Listrostachys ringens, *n. sp.**

This is a connecting link between the group of L. Chailluana, arcuata, Sedeni, and, on the other hand, the group of L. filicornis. It is intermediate in all features between them, and distinct at once from all scientifically by its short unbeaked rostellum. The flowers are yellowish white, standing in a raceme, 3 inches long, one-sided, with triangular recurved sepals and petals, a lanceolate lip with a blunt angle on each side before the mouth of the spur, and a long wide cylindrical blunt spur 1½ inch long. The leaves are cuneate-oblong, with two blunt lobes at the apex, widening before it—according to a sketch 3 inches long and 1 inch broad at the broadest place. The whole plant is very low, 3 inches high.

I have to thank for a spike and a sketch of the leaf Herr Garten-inspector Bouché, of the Botanic Garden, Neuschœneberg, near Berlin, who says he received it from the Cameroons. *H. G. Rchb. f.*

Iris (Pogoniris) balkana, *Janka, Adatok*, p. 173.†

This has now been introduced into cultivation in this country, and proves to be a distinct species midway between olbiensis and squalens. The following description is taken from a plant sent by Max Leichtlin, Esq., to the Kew collection, which flowered in the herbaceous ground the first week in May.

Tufts crowded, the whole plant about a foot high. Leaves 6—8 to a stem, ensiform, acute, glaucescent, the outer at the flowering time 3—4 inches long, under an inch broad, Flowering-stem 6—9 inches long, with a single terminal cluster of a couple of flowers. Spathe-valves deltoid-navicular, green throughout at the flowering time, 2 inches long, 1½ inch broad. Pedicel short. Perianth with a cylindrical greenish tube 1 inch long above the ovary; limb 2½—3 inches long, dark claret-lilac; falls obovate-cuneate, 1—1½ inch broad, reflexing from low down, with a dense white beard tipped with lilac; standards erect, broad-oblong, with a distinct claw 1½ inch broad, emarginate at the tip, the same colour as the falls. Branches of the style ¾ inch broad, white with a lilac keel, 1 inch long exclusive of their deltoid crests. Anthers white, as long as the free filaments. *J. G. Baker.*

Bollea Lawrenceana, *n. sp.*‡

There are few groups which have been enriched lately so much as the Bolleas and Pescatoreas. Look in Dr. Lindley's stately collection—two or three. My herbarium contains eighteen, three of which are unpublished. Without the arroganceof a certain *vaticinium* we cannot undertake to judge their position perhaps as sexual forms, as some people amuse themselves in valuing the Selenipedia and Uropedia states of one another, though they never saw anything of that kind that would entitle them to do so.

The plant I have the agreeable duty of introducing to-day is one of the most stately Orchids of the world, and may be regarded as connecting in some way Pescatorea bella and Bollea cœlestis, and yet it is a genuine Bollea, and very distinct from both. The sepals and petals are equal to those of the largest Bollea cœlestis, but they are far more acute, milk-white, with beautifully yellow tops both sides. The lip's large callus is bright yellow, as in Bollea cœlestis, before it darkest violet, white on both sides of the callus. The column is well hooded as in the Bolleas, but it has not such strong rounded cheeks each side, nor has the edges sharp there. It is whitish violet on both sides, and has a yellow area on the inferior part of the front side with very few hairs and a few red spots. The free base of the column on each side the nail of the lip is angulate semi-sagittate, which is quite peculiar to this; anther light red. Thus the plant is very easily recognised. It would seem that it is unique till now, as there cannot be the least doubt that any one who had flowered it would have made a great exclamation of pleasure. I regard it as by far the best of the whole affinity, excepting the best Pescatorea Dayana varieties—as far as I know the species alive. There can scarcely be a doubt that this is once more one of the Klabochian discoveries. The plant is stated to be quite undistinguishable in the leaves from cœlestis.

I have to thank for this beauty Sir Trevor Lawrence, who twice sent flowers. It is a very great satisfaction to name the species as I do, in due acknowledgment of very great merits as an Orchidologist. *H. G. Rchb. f.*

* *Listrostachys ringens*, n. sp.—Foliis cuneato-oblongis obtuse bilobis; racemo secundo-pauciflore; bracteis triangulis, ovariis pedicellata longe non æquantibus; sepalis triangulis reflexis; tepalis rhombeo-ligulatis reflexis; labello rhombeo-anceolato, calcari amplo filiformi obtuso ovarium pedicellatum plus duplo excedente; rostello abbreviato.—Cameroons. Hort. Bot. Berol ex C. Bouché. *H. G. Rchb. f.*

† *Iris* (*Pogoniris*) *balkana*.—Rhizomate brevi crasso; caule subpedali bifloro; foliis 6—8 ensiformibus acutis glaucescentibus, caule brevioribus; spathæ valvis deltoideo-navicularibus viridibus; perianthii tubo supra ovarium pollicari; limbi tripollicaris atropurpureo-lilacini segmentis exterioribus obovato-cuneatis reflexis, dimidio inferiori ad carinam barbatis, interioribus erectis late oblongis unguiculatis emarginatis; styli ramis latis, cristis deltoideis; antheris filamentis æquilongis.—*I. Chamæiris var. balkana*, Baker, in *Gardeners' Chronicle*, 1876, p. 648.

‡ *Bollea Lawrenceana*, n. sp.—Omnino affinis Bollea cœlesti. Sepalis tepalisque melius acutis; labello antice multo latiori revoluto; columna utrinque sine buccis incrassatis, basi utrinque semi sagittato parcissime in fronte piloso. Sepala et tepala alba apicibus elegantissime violaceis. Labelli callus flavus, portiones laterales albæ, portio antica atroviolacea. Columna albo-violacea, antice inferne flava maculis rufis. Anthera pallide rufa.—*Zygopetalum Lawrenceanum*. Col. ch. Sir Trevor Lawrence. *H. G. Rchb. f.*

PEACHES AND NECTARINES AT CHISWICK.

Some five years ago Mr. Barron planted the south wall, which forms a portion of the northern boundary line of the gardens, with Peaches and Nectarines. At the time of planting the trees were maidens, and they are trained in the form of double oblique cordons. Altogether there are 150 trees, planted 2 feet apart, making 100 yards run of trees. Many of the varieties are in duplicate, but there is an excellent assortment, old and new. They are bearing well this season, and those interested in such a capital trial will find much to instruct them. No particular attention has been given to the trees but what is ordinarily given; they were covered with a herring-net in spring when frost threatened. The trees are now very healthy, very clean, and carrying vigorous foliage. Such a comprehensive trial is of great value, and deserves a record for many reasons, while it serves to illustrate something of the highly practical work being carried out at the gardens.

The earliest Peach is Rivers' Early Beatrice. This was ripe on the open wall on July 20, and was succeeded by Hale's Early, an American variety. This was ripe from August 3 to 4; the fruit very highly coloured, good in quality, and it is the first early Peach that can lay claim to the possession of anything like quality; it is an excellent variety for early exhibitions. Condor (Rivers) is a very free bearing Peach, coming in just before the Acton Scott, which is an old standard sort, much larger and of finer quality. This was ripe on August 11, Acton Scott being about two days later. Early York was ripe on August 12; it is a well-known variety, very fine in colour, and of good quality. Early Alfred is something similar to Early York, smaller in size, and as seen here certainly not so good, and not worthy of cultivation. Early Silver (Rivers) bears very fine looking and striking fruit, conspicuous on the wall among all others, the skin pale, and of a fiery crimson colour; large in size, very fair in quality, and a capital exhibition variety. Comice de Bourbourg, though announced as a distinct variety, is in the way of Grosse Mignonne, and so like it as to be difficult of separation. Belle Impératrice is a French Peach, coming in fit for table late in September; a large and fine-looking fruit of good quality. Late Admirable is a well-known variety, still much grown. Goshawk is a mid-season Peach of a promising character, but another season's growth is necessary to estimate its true value. Merlin (Rivers) is a good-looking large Peach of the Grosse Mignonne type, and evidently free bearing: a seedling raised by the late Mr. Rivers, marked No. 45, can be set down as medium-sized, and a very free bearer. Osprey is a very late variety, its value can be better determined later on. Magdala has the appearance of a late Bellegarde, very free bearing, and promises to make a useful mid-season variety. Rivers' White may be briefly described as a large pale-coloured late Peach, and a free bearer. Another of Mr. Rivers' seedlings (No. 40) is a free bearing late Peach of a pale colour. Early Grosse Mignonne is such a well-known variety that it simply requires to be named in this relation. Bellegarde is fruiting well, and is one of the best mid-season Peaches grown. Desse Tardive is a French Peach, the fruit of which looks very green and uninteresting at present; it ripens at the end of September, and is then as highly coloured as Bellegarde. It is one of the best late Peaches known, and is not nearly so generally grown as it deserves to be. It is highly recommended by Mr. Barron. Van Zandt's Superbe is a strong-growing late Peach, but is not very free bearing. Royal George is bearing freely, as is usually the case, but is somewhat afflicted with mildew, showing its tender constitution, and is far better suited for indoor cultivation than for fruiting in the open air. Exquisite (Rivers) is a very late Peach, said to be of good quality, which will be tested later on. Abec is a medium-sized, highly-coloured Peach, and is occasionally met with in excellent form on the exhibition table. Stump-the-World, an American variety with an atrocious name, is a very late variety, and that is all that need be said about it. The English Galande appears to be identical with the Bellegarde. Belle Beauce is like Grosse Mignonne. Noblesse is one of the finest quality of Peaches grown—that will be generally admitted, but it succeeds better in a house than on the open wall. Frogmore Yellow is bearing a good crop. Raymackers and Malta are very similar, being very large pale-coloured Peaches, like Noblesse in appearance. Barrington, one of the standard late Peaches, is bearing freely. Walburton Admirable is also a very free bearer, and Late Admirable may be mentioned as a well-known late Peach. Chevreuse is a Peach in the style of Royal George. Lord Palmerston is a very large, late, pale-coloured Peach, that has been highly commended by some cultivators. Crawford's Early is a handsome yellow-fleshed Peach, very large and attractive in appearance, and bearing well.

Conspicuous among all the Nectarines stands Lord Napier (Rivers) for its marked individuality of character. It is in three different places on the wall, and is thoroughly good in all. It is the earliest of all Nectarines, being ripe about the same time as the Acton Scott Peach; the fruit large and very highly coloured, flesh pale to the stone, and of excellent quality; also an enormous bearer. What more can be said in praise of a Nectarine? It will stand as an enduring memorial of the grand old Hertfordshire pomologist who raised it. Cricket Nectarine is in the style of Elruge. Pitmaston Orange and Pine-apple (Rivers) are both splendid Nectarines, bearing very freely, but not yet ripe. Elruge is a fine standard variety, large in size and fine in colour; and the same may be said of Violet Hâtive; neither are yet ripe, but, to use a gardening phrase, they maintain their character well. Darwin is a late free-bearing variety of medium size. This is one of Mr. Rivers' raising. Albert Victor (Rivers) is very free bearing, large and handsome, like the Stanwick in appearance. Stanwick Elruge (Rivers) is a very fine Nectarine in appearance, and the raiser claims for it that it possesses the free character of the Elruge with the splendid quality of the Stanwick. The Large Elruge (Rivers) does not appear to be so large as the ordinary Elruge. Victoria (Rivers) is very late, and is so excellent in quality that Mr. Barron regards it as the best Nectarine grown. The Autumn Rose is quite small in comparison with others, but it bears very freely, and is a strong grower. But it is too small; it really ought to be larger. Impératrice is in the style of Violet Hâtive. Downton is like Violet Hâtive in appearance, but a trifle larger; it is very fine and free bearing. Balgowan is an old standard variety, now superseded by Lord Napier.

The position is advanced by some fruit cultivators, that varieties of Peaches having leaf glands are more robust in character than those destitute of them. The Noblesse, Royal George, and Early York, are all varieties without glands, and they are all very much addicted to mildew, and tenderer in constitution than those having glands. If it be true that the presence or absence of glands is related to constitutional vigour, on what grounds can it be accounted for? What economic purposes do the glands serve? Are they a kind of outlet by which certain noxious particles or matters are given out by the plants? *R. D.*

HARDY STONECROPS: SEDUMS.

The taste for hardy plants is happily reviving, and plants are becoming more widely appreciated for their general beauty and interest rather than for mere brilliancy of colour, apart from other attributes. Variety and interest rather than monotony and garishness are being more and more sought after. One happy result of this is that hardy plants, and such as can be grown anywhere and under almost any conditions, are coming more and more into favour. The Sedums or Stonecrops come under this category, on which account we purpose devoting a few papers to a descriptive enumeration of the hardy species, such as may be grown on the rockwork, in the open border, on a wall, in a cold frame, on a balcony, or on the house-top, on a window-sill of the dingiest London alley, or in the mosaic beds of my lords' flower-garden.

We do not indeed assert that all the species will thrive equally well—nor that culture and attention do not produce their results as obviously and beneficially as in the case of other plants; but we may safely say that, on the whole, there are few plants that absolutely require less attention or that will exist under such unfavourable conditions. This is a great recommendation to villa gardeners with limited time, and a still greater recommendation to "alley" gardeners with less means and not the purest of atmospheric conditions. On the other hand, few plants repay the cultivator who has the requisite means and appliances with more brilliant results. Some species are resplendent in bloom, others are evergreen; some have bold foliage, others delicate leaves of bright colour suitable for carpet or mosaic beds; almost all are at home on the rockwork, many will glorify a wall. The botanical structure is always interesting, not unfrequently remarkably so. In this place, however, we do not intend trenching on this department further than is necessary for the discrimination and identification of species, and, as our remarks are intended mainly for gardeners who have to grow, rather than for students who have to investigate the plants in question, we shall adopt an arrangement which is more in accordance with cultural requirements than with strict botanical kinship, and we shall, in the first instance, pay more heed to distinctions which are readily seen and appreciated by those not versed in botanical lore than to those which are intrinsically of higher importance. We shall confine ourselves also mainly to hardy species which we know to be, or to have been, in cultivation. In order to form an opinion as to what species are or have been in our gardens, we have studied the species we have seen growing in the principal botanic gardens—Kew, Paris, Edinburgh, Florence—as well as in several private collections. Moreover, thanks to numerous friends and correspondents, we have ourselves grown a large proportion of the species to be hereafter mentioned, and have had them under observation for some years.

Our excellent correspondent, Mr. Baker, of the Kew Herbarium, has also collected notes concerning the species cultivated at Kew and elsewhere. These notes he has very obligingly placed at our disposition, and we have freely availed ourselves of his kindness. Mr. Baker's notes did not come under our notice till within the last few weeks. Had we known of their existence we should have resigned to him the completion of a task for which he has greater facilities than we can boast of. Meanwhile it is agreeable to find that on all essential and main points there is a substantial agreement between us.

One result of the observation of living plants has been to convince us that, as is usually the case, names abound in greater proportion than plants distinct enough to warrant the use of separate names. Book-names are indeed very numerous, but the things signified are not so in proportion. It is, of course, very much a matter of opinion whether a particular plant is sufficiently distinct to have a separate name. The gardener, seeing how constant are these variations, can hardly understand how it is that some botanists refuse to consider them in the light of distinct species. For his purposes they are distinct enough, and he has not to trouble himself with the reasons which induce a botanist to adopt other views. If he be not only a gardener but a botanist also, then it is clear he has a double right to adopt whatever course he thinks best. For our own parts we propose to adopt a middle course—to retain those names for many plants which seem distinct under cultivation, but which doubtless in a broader sense are mere forms of larger groups and have been derived probably from a common stock, and whose buds or whose seedlings may and sometimes do revert to that common stock. But, withal, we shall have to sacrifice many names which, as it appears to us, have been applied on insufficient grounds. Where we have sufficient reason we shall cite synonyms, but in doubtful cases, or in cases where the interests of the garden are not involved, we shall make no effort to disentangle the ravelled thread.

With these preliminary observations we now begin our enumeration of hardy Sedums, classifying them first of all into three groups according as they are (in the open border) perennials, herbaceous perennials, or annuals. Under greenhouse culture some of the herbaceous perennials become evergreen perennials. Under perennial species we include those forms which, under ordinary circumstances, do not die down in the winter but retain their leaves. Herbaceous perennials are those which die down in the winter and spring up again in the following year—the rootstock being thus perennial. Annuals are those which die completely after the flowering stage. As the herbaceous perennials happen to be those which are for the most part autumn-flowering, we will begin with those, premising that our notes have been taken from the living plants mainly. Of those species or forms of which we have only book, picture, or herbarium knowledge, we shall in these columns say but little.

HARDY STONECROPS—SEDUMS.

I. Herbaceous Perennials.

* Flowers unisexual.

1. S. Rhodiola, D.C., Plantes Grass., t. 143.

Rootstock thick, fleshy, perennial.
Stems annual, several from the same stock, 6—8 inches high, erect, unbranched.
Leaves scattered, ⅔, glaucous, spreading, or erect, 1 inch by ¼, sessile, oblong, obtuse, rounded at base, obscurely 1-nerved, slightly toothed at the apex.
Flowers greenish or reddish-purple, in a terminal flat-topped, subglobose cyme, about 1 inch in diameter, pedicels short.
Calyx less than ¼ inch diameter, tube cup-shaped, sepals four, deltoid, lanceolate, as long as the tube, spreading.
Petals four.
Stamens four in the male flower, absent in the female flower.
Carpels in the female flower four, erect, twice the length of the sepals, oblong, tapering into a short style, terminated by a flat discoid stigma.—Fl. summer.
Syn.: Rhodiola rosea, Linn.
Native country.—W. Europe, E. and W. N. America, Himalayas, Welsh and Scottish mountains.
Var. Minor. Smaller than the type, stamens scarcely equalling the petals.
Switzerland.

A neat growing species, adapted for rockwork or front row of the herbaceous border. The roots exhale a perfume of rose-water.

See also Regel, Gart. Flor., 1863, p. 210, t. 403, figs. 4, 5. Regel mentions a var. LANCEOLATUM, and enumerates as synonymous with S. Rhodiola, S. Stephani, elongatum, and atropurpureum.

** Flowers bisexual.

† Leaves narrow, entire, toothed or deeply divided.

2. S. asiaticum, D.C. Prod. iii., 401.

Rootstock thick, descending, many-headed.
Stems annual, 6—12 inches, erect, unbranched, slender, glabrous.
Leaves opposite, decussate, spreading, sessile, ¾—1 inch by ⅛ inch and more, linear, oblong, coarsely and irregularly toothed.
Flowers in compact terminal globose cymes, numerous, 5-merous, greenish yellow.
Sepals oblong-lanceolate.
Petals greenish-yellow, oblong, obtuse, twice the length of the sepals, and with a thick dorsal nerve.
Stamens some as long as the petals, those attached to the petals shorter and later in development; anthers orange-brown.
Carpels erect lanceolate, tapering into a short style, each with a bright yellow gland at the base.—Fl. summer.
Syn.: S. crassipes, Wall.; Rhodiola asiatica, Don; S. Wallichianum, Hook., Ic. Plant., t. 604.
Himalayas from Sikkim to Kashmir.

A peculiar species, its almost pinnatifid leaves giving it a very different appearance to that of other Sedums. We cannot distinguish Hooker's S. Wallichianum from this species. In India it is said to have red flowers, but in cultivation the flowers are greenish-yellow. We have found it suffer from wet and damp in winter in the open border, and hence counsel those who wish to keep it to grow it in a cold frame or greenhouse.

3. S. Semenovii, Mast.

Stems annual, from a many-headed rhizome, erect, cylindrical, glabrous, about 1 foot high.
Leaves in six rows, erecto-patent, sessile, about 1 inch long, linear acute, entire, 1-nerved, channelled on the upper surface.
Flowers whitish, ¼ inch and more in diameter, arranged in compact terminal globose cymes.
Flower-buds oblong, pointed.
Calyx tubular at the base, sepals linear-acute, longer than the tube, reddish.
Petals quite free, lanceolate, twice the length of the sepals, tipped with pink.
Filaments white, anthers orange-brown.
Carpels erect, white, turgid, erect.
Glands white.—Fl. Kew, June.
Syn.: Umbilicus Semenovii, Regel, in Enum. Pl. Semenov.
Turkestan.

We have seen only a single specimen of this, grown in the frames at Kew. It is evidently nearly allied to S. asiaticum, and having quite free petals should not be placed in Umbilicus.

3α. S. quadrifidum, Pall. D.C. Prod. iii., 407.

Stock thick, giving off numerous erect slender stems, 2—5 inches.
Leaves glabrous or puberulous, approximate, subterete, ¼ inch.
Flowers red, in terminal cymes.
Sepals oblong.
Petals linear-oblong, twice the length of the sepals. Clarke, in Hook. Fl. Brit. Ind. ii., 418.
Syn.: S. coccineum, Royle, Ill. Pl. Him., t. 48.
Arctic Russia, Siberia, alpine Western Himalaya.

We have not seen this species, but it is entered in some catalogues, and Haworth says it was introduced in 1809, and flowers in July. Our description is condensed from those of Clarke and Royle above cited.

3β. S. rhodanthum, Gray, Am. Journ. Sci. ii., 33, 405; S. Wats., Bot. 40 Parall. 101.

Glabrous.
Root thick.
Stems tufted, 1½—1 foot high, erect.
Leaves 1—2 inches, alternate, lanceolate, entire, channelled.
Flowers numerous, in a dense terminal cyme, mostly tetramerous, 4—5 inches long, rose coloured.
Sepals linear.
Petals lanceolate acuminate, twice the length of the sepals and longer than the stamens.
Carpels erect.—Fl. end of June, Kew.
Rocky Mountains of Utah and Colorado, alt. 9000 feet.

The above particulars are gleaned from Mr. Baker's notes on the plant in cultivation and from Mr. Watson's work above cited. We have not seen the species in a living state, but, judging from dried specimens, it has much of the appearance of S. Rhodiola.

4. S. Middendorffianum, Maxim. Pl. Amur.

Leaves alternate, rather fleshy, sessile, 1—2 inch, erecto-patent, oblanceolate, dentate towards the apex, somewhat concave on the upper surface.
Flowers numerous, yellow, in a flat-topped umbellate cyme; primary branches four, with a central flower in the forks.
Sepals barely ¼ inch, linear acute.
Petals spreading, yellow, ⅜ inch longer than the sepals.
Carpels compressed, stellately spreading when ripe.—Fl. summer.
Amur.
Var. Minor, dwarfer in all parts (Maxim.).

We have seen only a fragment of this species, grown by Mr. Green at Reigate.

5. S. trifidum, Wall. *ex* Clarke, in Flor. Brit. Ind. ii., p. 420.

Stems erect, slender, 3—11 inches, unbranched.
Leaves glabrous, aggregated towards the top of the stem, sessile, spreading, oblong cuneate at the base, coarsely toothed or pinnatifid.
Flowers in small dense terminal cymes.
Flower-buds conical, reddish.
Sepals lanceolate.
Petals linear-lanceolate, twice the length of the sepals.—Fl. summer.
Temperate Himalaya from Sikkim to Kashmir, alt. 6000—12,000 feet; *ex* Clarke, *l.c.*

A species abundant on rocks and trees in the Himalayas, and varying much in the size of its leaves. We have only seen a small specimen in the frames at Kew.

6. S. Aizoon, Linn. Sp. Plant., ed. i., 430.

Roots thick, descending.
Stems glabrous, 1 foot or more in height, subangular; several from the same crown erect unbranched.
Leaves distant, sessile, alternate, 2½ inches by ⅔ inch, oblong lanceolate, coarsely and irregularly toothed for the greater part of their length, midrib prominent.
Flowers numerous, yellow, ½ inch in diameter, in a loose panicled cyme, 1—3 inches in diameter, lower peduncles axillary, distant, upper umbellate, flat-topped.
Flower-buds conical, acute, each subtended by a small bract.
Sepals equal, three lines long, base dilated, prolonged into a linear point.
Petals yellow, lanceolate.
Anthers yellow or brownish, glabrous.
Carpels glabrous, yellow or pinkish, rather longer than the persistent sepals, divergent like the rays of a star when mature.

Glands whitish, notched.—Figured in D.C. Pl. Grasses, t. 101.—Fl. late summer.

Syn. : Anacampseros Aizoon, Haworth ; Sedum Stephani of gardens ; S. denticulatum of gardens, partly ; S. Wallichianum of gardens, partly.

Siberia, Japan, Amur, Altai.

An old inhabitant of our gardens, suitable for rockeries or the herbaceous border. Its yellow flowers remain long in bloom.

6. S. MAXIMOWICZII, Regel, Gartenflora, 1866, xv., 355, t. 528.

Glabrous : Stems erect, about 1 foot in height, terete, or somewhat four-sided, greenish.

Leaves subopposite or alternate subsessile, 1½—1 inch, oblong-ovate or oblong-lanceolate, sometimes obtuse, regularly toothed, midrib channelled, upper leaves longer, narrower.

Flowers numerous, yellow, in a dense flat spreading cyme.

Flower-buds flask-shaped.

Sepals unequal in size, dilated at the base, protracted into a long slender point, rarely somewhat spatulate at the apex.

Petals yellow, lanceolate, half as long again as the sepals.

Stamens yellow ; those in front of the petals shorter than the rest.

Carpels yellow, shorter than the petals. Scales white. —Fl. late summer.

S. purpurascens, hort. Florence ; S. Lehmanni and S. cristatum of some gardens.

Japan—Amur.

Similar in habit to S. Aizoon, but larger, differing in the sepals of unequal length, and in the peculiar flower-buds dilated below and narrowed into a long beak like a Florence oil-flask. The central flower is sometimes 4-merous ; in some cases they are 6-merous.

7. S. SELSKYANUM, Regel, Gartenflora, 1862, t. 361.

Stems 12—18 inches, erect, pilose.

Leaves sessile, ascending, lower ; upper 1½ inch long, less than ½ inch broad ; lanceolate from a broad base, ciliate ; midrib very prominent on the under surface ; margin serrate in its distal third.

Flowers numerous in a many-branched hollow-topped leafy cyme ; rachis flexuose ; bracts leafy ovate ; ultimate pedicels shorter than the flowers.

Sepals glabrous, linear.

Corolla nearly 1 inch diameter, half as long again as the calyx ; petals yellow, lanceolate, apiculate.

Stamens 10, as long as the petals, anthers yellow.

Carpels 5, greenish, as long as the stamens, ultimately spreading.

Scales minute, whitish.—Fl. late summer.

S. kamtschaticum of some gardens, not of Fischer.

Amur and Manchuria.

The species resembles S. Aizoon, but the leaves are narrower and pilose.

(To be continued.)

ON THE POISONOUS NATURE OF THE CASHAW TREE (PROSOPIS JULIFLORA).

WITH reference to the note on poisonous Legumes at p. 768, vol. ix., *Gardeners' Chronicle* for June 15 last, I have been favoured with a letter from Robert Russell, Esq., of Government Park, Spanish Town, Jamaica, the facts contained in which may be interesting. The Cashaw tree of Jamaica is not a native but is said by M. Longue in his *History of Jamaica*, on the information of an old resident, to have been introduced about the end of the seventeenth or beginning of the eighteenth century from South America by some mules which were afterwards pastured on the plains, then a prairie country, and they distributed the seeds by their droppings. All the plains between Liguanca and Vere are now covered with Cashaw trees. The wood is heavy and hard, and when polished may be mistaken for Mahogany ; it is a beautiful tree, and assumes various shapes according as it is grown, singly or in groups, or clustered in a forest. When grown singly the branches become tortuous, and can be dressed up into various forms for knees and ribs in ship-building. When clustered, seeking the light, they grow straight to the height of 15 feet or more before branching, and the wood is then used for columns, gate-posts, &c. It is the principal fuel-wood where it grows, and is largely consumed by the Jamaica Railway Company for their steam-engines. The Bean is excellent food for all quadrupeds, and produces no injurious effect on cattle, sheep, and goats ; this immunity, in the case of cattle, it is said, is because these animals chew the cud, and thus get rid of the gas. It is greedily eaten by horses, which fatten on it so long as it is dry, but a slight shower of rain, just sufficient to damp it, causes the pulpy covering of the seed to ferment, it then becomes sweet, and the horses eating it in that state have their stomachs distended, and if not attended to die in a few hours in great agony. The gas generated by the fermentation is said to be hydrogen (?), and I am inclined to think it is, for my unfailing remedy is a champagne glass of the chloride of lime or soda mixed with water : these will altogether fill a wine-bottle, and are administered in two or three drenches at intervals of half or three-quarters of an hour or more. Shortly after the distention is reduced, the fæces are removed by mechanical means, and the animal is relieved. The effect of the chloride acting on the hydrogen gas is said to at once absorb it, and to convert it into hydrochloric acid, and thus reduce the distention. Many graziers store the crushed Beans, to be given to their horses in times of scarcity. It may be remarked that, when the Bean becomes well saturated after a heavy rain, it gets sour, and the animals will not eat it.

I am further informed that the writer of the foregoing letter lost at one time some valuable horses during the wet season from Cashaw poisoning, but at the present time, owing to his treatment as above described, a loss from Cashaw poisoning is a thing unknown. Regarding the similarity of the wood of the Cashaw to that of Mahogany, the heart-wood is of a reddish brown colour, and not at all unlike some of the lighter coloured kinds of Mahogany. It is apparently also strong and durable. *John R. Jackson.*

WHAT IS A SPECIMEN PLANT?

THIS depends, as the farmers' wives so often say if quizzed about their management in their homes, fowl-houses, or dairies ; but, while the listener waits for further explanation, he is rather surprised to find that the good woman considers her answer complete. It is not purposed, however, to be so vaguely reticent in these notes. "Fair Play," possibly unconsciously, answers himself when he says, Azaleas, Aphelexis, Ericas, Genetyllis, Phœnocomas, Dracophyllum, &c., are all bought in from nurserymen and growers as single plants. But observe, he does not proceed to state that these or such-like plants are shown, and prized by the judges and praised by the press, with from three to four plants in a pot. No, but he contrasts with these such plants as Allamandas, Bougainvilleas, Clerodendrons, Dipladenias, Dracænas, and Statices. Why? Simply because these and other plants can hardly be grown well without producing quantities of offsets and suckers. By this change of plants the whole force is taken out of "Fair Play's" objections. Can he cite any case in which good judges awarded a prize to three Heaths in one pot as a single specimen, or three Azaleas or Aphelexis? If so, then the judges failed in their duty ; and they would equally fail if they insisted on any offset or sucker being removed from such plants as Dracænas, Clerodendrons, Statices, Lapagerias, &c. Each root-stock of these plants naturally and almost necessarily becomes the centre of a colony, and a specimen to be perfect should reveal the natural growth and character of the plant.

The same rule necessarily applies to Orchids. These grow and enlarge from year to year, and the difference between specimens is not that of a unit as against numbers of such, but as between a small group of independent plants and a larger and better one ; for no one can have failed to have noticed that it is less those who can make up the largest plants that sweep off the prizes, but rather such as can grow and flower them best. No doubt in open classes the growers for sale may have an unfair advantage, and carry a prize by mere force of numbers. But it must also be borne in mind that the nurseryman's main interest is to sell his plants, and not to pile them up into mere pot-boilers for the exhibition table ; and it must also be confessed that most of our most successful exhibitors of Orchids in the trade—such, for example, as Messrs. Veitch, Williams, Low, Rollisson, &c.—win rather by virtue of superior culture than by mere massiveness of made-up specimens. One of the most delightful groups of Orchids I had seen for years were those of the Messrs. Veitch at the opening show of the Alexandra Palace. Freshness and beauty were their chief characteristics, and the same qualities mostly characterise the prize groups of Mr. Williams at the metropolitan and provincial shows.

As a rule, too, there are two or more classes at most of the best shows where Greek meets Greek, and others contend with their equals.

At times the exhibitors, through carelessness possibly—for there is really no practical advantage in the practice—place more than one plant at first in a pot. A case in point occurred last year at a large show at which I was one of the judges. A specimen Dracæna had been started with four plants in a pot ; the other nine plants in the collection were remarkably good. They were, however, disqualified, with the reason assigned on a card, "Four Dracænas, but strongly recommended for a valuable extra prize," which they received ; but the specimen Dracæna was no better than many others in the same tent, which all sprung from one root-stock.

"Fair Play" has really good grounds for complaint at the undue importance assigned to new plants in collections of specimens. As there are generally classes for these specially, the merit attached to mere novelty should there meet with its just reward, but in all other classes superior culture should have at least three marks to one awarded to novelty. I should go much further than this, and place a mark against novelty in any class unless the new variety were superior to or distinct from old ones already in cultivation. Novelty for its own sake deserves no encouragement in an age when the craving for it has grown into something like a disease among all classes, especially horticulturists. And yet it exerts a seriously disturbing influence on the awards of most judges, while provincial censors not seldom perpetrate the most glaring absurdities under the spell of the novelty craze.

Others again almost worship mere size. This fault is, however, far less common, and there is a tendency in not a few judges to underrate the importance of size as a factor in the awarding of prizes. Assuredly, the quality of two plants being equal in health, freshness, and beauty, the largest is the best. And large plants have an important place to fill, not only on the exhibition tables, but also on the floors, shelves, and stages of large conservatories and plant stoves. But neither size nor novelty are deserving of much weight in the awarding of prizes for general collections of specimen plants. The chief merits are perfect health, spotless cleanliness, superior culture, good form, abundance of bloom—or if foliage plants, beauty and perfection of colouring, sufficient variety, and tasteful arrangement, so that each plant is shown to the best advantage, and also so placed as to heighten the effect of all the others. *D. T. Fish.*

LIQUID MANURE AND WATERING.

IMPORTANT and necessary as good soakings of water are in a clear pure state, there is no way of helping growing crops or plants that have large heads of flower or seed to carry equal to that of giving it impregnated with manurial matter of some kind. Even soapsuds form a most excellent stimulant, and should be treasured up till wanted, as they may be used with safety and good effect on all kinds of vegetables, while they are of special value for Vines and other fruit trees. The only objection to their use is the sediment they leave, which seals over the surface of the soil and causes it to crack and let in large volumes of air, but this may readily be got over by mulching the ground before applying them, as then they filter through any half-decomposed matter that may be used, and pass on clear although impregnated with many of the soluble salts, on which the roots of most plants delight to feed. Now there is hardly a house in the kingdom where soapsuds are not more or less wasted, and I know of no better investment that could be made than money laid out in the formation of tanks in which to save them and other slops that are daily thrown away down drains, blocking them up sooner or later with greasy deposit, and thus becoming a nuisance instead of being made reproductive as they ought to be. Were this only attended to gardens might be made much more profitable than they now are, as there are few places where solid manure can be obtained in anything like sufficient quantity to meet the many requirements there are for it, and even where it can be got it is in no way equal in the summer to that given in a liquid form, as plants can take it up at once, whereas the other, while it remains dry and undecomposed, cannot be absorbed, and therefore lies useless till rain moistens the earth and sets free the gaseous juices it contains.

Of the many kinds of manure-water that may be made, there are none, excepting perhaps that from

guano, which will compare with a solution of night-soil, the strength and potency of which is something astonishing, but like all manures of this character it is necessary to use it with extreme caution and well diluted or much mischief ensues. The late Mr. Rivers, who was not slow at finding out the best stimulant for Roses, at one time gave this the preference over any other kind of manure, and used it in quite a thick liquid as a winter dressing, giving from one to two gallons at a time.



Fig. 49.—Rhexia virginica; flowers purple and yellow. (See p. 276.)

Although this might be safe at that season of the year, it would not do to apply it at anything like that strength now, but if weak, all gross-feeding crops will be greatly benefited by its use. There is, however, one thing to be avoided when pouring it in, which is to avoid wetting the foliage, or if this cannot well be done, as it could not in the case of Celery, it should be immediately washed off by means of clear water sent with some force through the rose of a pot. As a mild stimulant that will agree with all kinds of plants, clarified soot-water is of great value, not only for administering to the roots, but for syringing overhead as an antidote to insects, to most of which its bitter qualities render it very obnoxious. Of all manures with which I am acquainted, I know of none that has such an effect on the foliage, imparting to it as it does a rich dark green appearance, which to most plants is a sure index of health. The best way of making or obtaining clear soot-water is to get a large vessel, such as a tub or deep butt, in either of which a tap can be fixed within a foot or so of the bottom, and the liquid drawn off without causing any disturbance such as would necessarily occur were it dipped out with a pot. So managed, it may be used without causing the least discolouration to the most tender foliage, or leaving the slightest deposit on the surface of the soil; and another advantage with soot-water is, that it may be used in greenhouses or dwellings for plants in windows without causing any unpleasant smell, or being in any way the least objectionable. A favourite liquid manure with many is that made from cow, deer, or sheep-droppings, and a very cool, safe, and useful stimulant it is, but the difficulty with it is to get it clear, as in such weather as the present it soon runs into a state of fermentation, in which condition it becomes turbid, and is then unfit for anything except where the surface soil is mulched, or can be slightly scratched over to break up the crust it leaves on the top. What we use most of here is the drainings from the cow and farmyard, where there is generally a good deal of manure lying, through which rain passes, and carries with it some of the best juices to large deep tanks made for the purpose of holding it. From these it is pumped out, and is just now in great request for the Vine borders, Celery, Cauliflower, Peas, Runner Beans, and such like, all of which drink it up greedily, and thrive amazingly on it.

The great mistake many people make when using liquid manure or clear water is in giving it in driblets instead of in sufficient quantity to moisten the whole of the soil as far as the plants have got possession of it; for if this is not done, the feeding portion of the roots are attracted to the surface where they are subjected to such alternations of wet and dry, heat and cold that many of them perish. To avoid this, a mulching of some kind should be given, however slight it may be, for it not only acts as a barrier to the sun, but it prevents in a great measure evaporation taking place, which, without something of this kind to intercept it, goes on at a rapid rate under the influence of wind or a dry parching atmosphere. Those who have never tried the effect of slightly shading the land round about the roots of plants can have no idea how beneficially it acts, especially to all such as are artificially watered, as without it the earth becomes washed, and the application is therefore often more injurious than otherwise. Even half an inch or so of ordinary leaf-soil is of great assistance, and as this may be used on the surface of flower beds or round the roots of plants in borders without being at all an expense, its utility for such purposes should not be overlooked. For years I have used it largely in the flower garden with the best results, as it has not only saved an immense amount of labour in watering, but has greatly aided such things as Calceolarias, Verbenas, &c., by keeping the soil cool and thus enabled them to carry double the amount of blossom they otherwise would. Another excellent material for mulching beds or borders is the spent droppings from old Mushroom beds, which beaten up so as to break them to pieces can scarcely be distinguished from the ground, and may therefore be used in any position.

Scattered along the rows of Celery trenches, nothing answers better than seaweed, which is preferable to any other mulching for this where it can be obtained, as, being a maritime plant, the salt the weed contains is highly congenial and helps to keep off slugs and worms that are frequently so troublesome in gardens. In giving liquid manure or clear water the evening is the most suitable time, especially if the heads of the plants have to be wetted, as then they have time to dry before the sun gets on them and the water has a better chance of finding its way to the roots. *S. W.*

DESTRUCTIVE INSECTS IN THE ISLAND OF ASCENSION.

This little spot in the middle of the Atlantic is suffering to an alarming extent from the ravages of caterpillars, which threaten to destroy all vegetable produce—a most serious matter, when it is considered how greatly the health of its inhabitants—and especially the prevention of that dire scourge scurvy—depends upon a proper supply of vegetables.

A nicely preserved collection of the perfect insects (with most of their larvæ in spirits) has been forwarded to the secretaries of the Admiralty, and submitted to me through the authorities at Kew. It consists of nine species—two of these butterflies, the others moths of the family Noctuidæ. All of them may be suspected of having been introduced with plants, &c.

The butterflies are the very widely distributed Vanessa Cardui and Lycæna bætica, neither of which can cause much damage; and a Noctua larva was forwarded in error as pertaining to the Vanessa.

The most destructive of all is our too well known Agrotis segetum, known in the island as the "black grub," and, as here, nipping off the young plants just below the surface. Another is Prodenia retina, not known in this country, but of very wide distribution; it appears in great numbers, and clears everything before it. In December, 1876, the Cricket Valley Crater was grown over with wild Tomatos, which

were covered with the caterpillars; the Tomatos died off in April, 1877, and but few of the caterpillars were to be seen until last November, when they swarmed over the whole mountain. Another caterpillar, which is said to be seen in numbers, is that of a Leucania, apparently L. Loreyi, but it is not stated upon what it feeds; probably grasses and cereals. Two pretty species of Plusia—P. aurifera and (apparently) P. U-aureum—with characteristic "half-looper" larvæ, are said to be destructive to garden produce. The other moths are Cosmophila xanthindyma and a species of Callopistria, but of these the larvæ have not been observed.

Naturally the islanders seek means of ridding themselves of this plague of caterpillars; but these are very difficult to suggest. The introduction of rooks or starlings appears to be practically impossible, on account of the treeless condition of the island. The sparrow would, I think, be useless; if introduced it would be sure to keep to the houses, and, moreover, the larvæ are large, and, in the case of the Agrotis, only at work above-ground during the night. I have suggested the breeding of large numbers of ducks, if this can be done successfully in an island with so little water; and, failing these, the turning out of large flocks of fowls and guinea-fowl, and building sheds for them in which to shelter and roost.

Strict attention to systematic alternations of crops is, I think, desirable; and not less so is the careful collection and destruction of all larvæ and pupæ turned up by the plough or spade.

Chemical and other agents seem to be of little service; but I know that the sprinkling of unslaked lime over the plants has been found useful in the case of Agrotis segetum.

An estimate of the number of land birds on the island accompanies the insects, from which it appears that there are about 25 pheasants, 400 partridges, 100 Guinea-fowl, 1100 domestic fowls, 25 ducks, 50 canaries, 10 cardinal birds, and 1500 wax-bills. The Guinea-fowl are said to keep about the N.E. plains, 400 feet above the gardens, and live on grasshoppers and crickets; surely if these birds were pinioned, or prevented from straying, they would find the larvæ equally to their taste.

The only immediate consolation I can give the unfortunate islanders is, that destructive insects, as a rule, only appear in extraordinary numbers in certain years. *R. McLachlan.*

VEGETATION OF JAMAICA.

The following extracts are taken from letters addressed to Mr. John Smith, formerly Curator of the Royal Gardens, Kew, by the late Mr. N. Wilson, the Curator of the Botanic Garden, Bath, Jamaica, between the years 1845 and 1868. Mr. Wilson became an assistant to Mr. Smith at Kew in 1836. He remained at Kew for two years, and then accepted the post of head gardener to G. Corbett, Esq., of Elsham, Lincolnshire, but in November, 1840, he went to Jamaica, where he had a brother in charge of a sugar and coffee plantation, and almost immediately began a correspondence with Mr. Smith, which was carried on at intervals till the time of his death. Many specimens, both living and dried, of the Ferns and other plants of the island were transmitted. Mr. Wilson had the better opportunities of doing this, as in 1845 he was appointed Superintendent of the Bath Botanic Garden. The principal object of the superintendent was to introduce economical and ornamental plants to the island, so as to increase its resources and its attractions. Things went on well for a time, but by-and-bye the depression of trade became very detrimental to the progress of the island; the garden shared in the general languor, and its superintendent was harassed by pecuniary and other difficulties, so that he seriously contemplated leaving the island, a resolution somewhat shaken by a visit to the United States, which did not appear to him to open up a sufficiently attractive prospect for him. In 1858 he was requested to select a site for a new garden, and accordingly fixed on a spot in the mountains fourteen miles north of Kingston, with a good climate, and a suitable soil well watered.

Procrastination and divided opinions on the part of the authorities rendered Mr. Wilson's task difficult and irksome. In 1862 an assistant was sent to him from Kew, in the person of Mr. Thomson. In the negro rebellion of 1866 Mr. Wilson and his family were in great danger, his own negro assistant being the foremost to attempt to take his life. Had it not been, says Mr. Wilson, for Governor Eyre's decisive action not a white man would have escaped. The last few years of Mr. Wilson's life were occupied in farming pursuits, a pension having been obtained for him at the instigation of Doctor (now Sir Joseph) Hooker. Mr. Wilson died in May, 1874, in his sixty-fifth year. With this brief history of his career we now proceed o glean a few extracts from the correspondence with which Mr. Smith has furnished us:—

Regarding the exchange of plants, in one of his first letters he says, "In search of these I often traverse cavities and places where sun never shone nor man trod. There are many species of creeping Ferns (Hymenophylleæ), living plants of which I send to the extent of my discovery on this property, which is nearly all woodland and rich in Ferns." Periodically he made excursions to the mountain peaks, and he relates what he has found and considers new or rare, and especially notices the Tree Ferns, of which he says their specific distinctions are more readily seen by their distinct habits or aspects, even when seen at a distance, than by specimens of their fronds only. He says, "Dicksonia dissecta is not a Tree Fern, but would readily be mistaken for one by a common observer. It has a creeping root (stem). In strong lands it produces fronds 12 feet to 15 feet long." Again he says, "The most handsome plant I have ever seen is a Tree Fern I discovered here (Brokenhurst) yesterday. It is of dwarf habit, the caudex 3 feet high, and 2 feet in circumference; the fronds are growing in the most graceful manner imaginable, 15 feet or 16 feet long, covering a space of 600 feet. There are four other plants of the same near to it, and if there were twenty they should all go by steam and find their termination in Kew Gardens. I also discovered another Tree Fern, in habit like the Cyathea elegans but taller, being about 30 feet high, and with a perfectly smooth stem; the stipes of the fronds are covered with long down or white hair like the Cereus senilis. When I first saw this elegant Fern, I thought of Linnæus worshipping the Furze in flower on Wimbledon Common: I was struck with a similar amazement."

In February, 1848, he says, "I am delighted to hear of my Tree Ferns doing well: shall I send you any more or taller ones? I have got many things well established in Bamboo baskets for you, which is the best way of preparing plants for voyages." In April, 1852, he says, "I have just shipped a case of tree and other Ferns, say from twenty to thirty in all. I have sent another plant of what I mentioned in my last, the most beautiful Asplenium I had ever seen, and which I am sure must be what you call Hemidictyon marginatum, and you particularly wished to have plants of it sent home."

In May, 1858, he says, "I have just returned from the richest spot for Ferns probably in all the earth, St. Catherine's Peak, 15 miles from Kingston, 5000 feet high, where the sea on both sides of the island can be seen. I found many Ferns I had never seen before, four or five being Tree Ferns, and procured specimens of three of them. As for Trichomanes, &c., there seemed to be no end of them. I also found Danæa elliptica and two Gleichenias, which I have at last succeeded in establishing."

Besides sending boxes of living Ferns to Kew, he also frequently sent herbarium specimens both to Sir Wm. Hooker and myself. In a letter dated June, 1843, he says:—

"I have just shipped a box of Orchids for you, consisting of all the sorts I have met with in this district worthy of notice, and among them are some you wished to have. In the bottom of the box you will find eighteen or twenty bulbs of our white Lily, Pancratium caribæum, one of the most fragrant flowers this country produces. The other box contains 200 different sorts of plants of those I considered new, rare, and showy: they have been established four months in Bamboo baskets; there are about a dozen plants of the Lace-bark tree. I have sent all the Ferns you have named, except the new Pteris you require; the plant I took the specimen from is the only one I saw, and I have quite forgotten its location."

In another letter he describes all the Palms of the island which he had then seen, and sends seeds of most of them. From time to time he describes the success or failure of the more important plants, of which the following are a few special cases:—

"Amherstia nobilis has attained the height of 25 feet, and at one time had produced forty racemes of flowers, producing perfect pods and seeds, four of which vegetated. In a later letter he says, "The Amherstia has now sixty or seventy racemes of flowers, and is truly a noble and imposing plant."

In 1857 he says, "Matisia cordata is now a large tree some 20 or 25 feet high, and last year produced seven dozen fruit, one of which weighed 2 lb. 2 oz; it is very stringy and full of fibre, and not a good fruit for dessert. I have distributed the plant all over the island.

"The Pitcher-plant, Nepenthes distillatoria, is growing freely, and it is now (1855) 25 feet or more in length.

"The Sandal-wood tree, Santalum album, although small, I am glad to say is progressing. The Calamus Rattan is 50 feet in length, the C. verus is also doing well. The Wax Palm of Brazil (Copernicia) will be in its element here, but I have not succeeded with the Andean Ceroxylon andicola.

"Dendrobium moschatum and D. pulchellum are now in profusion, having stems 6 feet in length and full of flowers.

"I have stocked the island with Astrapæa Wallichii; it thrives admirably here.

"Xanthochymus ovalifolia is now 10 feet high, and I could supply you with plants of X. pictorius in abundance.

"I have raised one plant from the twelve seeds of Musa Ensete you sent me—it is growing finely; and also four of Musa textilis." These he wishes to make common.

"The China-grass plant, Boehmeria nivea, which you sent me is thriving to admiration. One of its shoots attained the height of 6 feet in fourteen days: it will be a weed here soon. I have sent plants of it all over the country, which will never be turned to good account except the English Fibre Company take it in hand. The Governor is now making a plantation of it on trial.

"The African Hemp plants, Sanseviera, are also doing well."

In 1854 he began to take special interest in the fibre plants of the island, and on sending a few samples of different kinds, he says, "If you think it would be of any service, I would prepare a collection for your museum. A short time ago I prepared some which have been forwarded to London by our Society of Arts, which were so much thought of, that it has led to a company being formed for their cultivation." He entertained the idea of forming a collection for the Paris Exhibition, and says, "I could send about twenty or twenty-five sorts, but require your assistance in naming some of them, of which I send specimens."

In a subsequent letter he says, "The Governor is taking much interest in the French Exhibition, and I have prepared fifty-five samples of different kinds of fibre. A species of Sida, probably S. villosa, is specially worthy of notice for its fine quality. It could be grown here to any extent. Mr. Sharp, of London, has taken up the subject, and has an agent here, but he is sure to overestimate the quantity to be obtained consequent on the question of labour. The negros will not work; they are all settling on their 2 or 3 acres of land, hence the country is suffering most materially for the want of labour. Of Plantain fibre alone thousands of tons rot annually. Musa violacea is the best and strongest fibre, even better than M. textilis which you sent. All the Bromeliaceæ are rich in fibre." In a later letter he says, "My fibres have been greatly admired at the Paris Exhibition, and I have been awarded a medal and a diploma."

Again, in the English Exhibition of 1862 he exhibited a collection of seventy to eighty fibres of different kinds, and says, "I have heard that my fibres have attracted attention, and that is all the good result that will be heard of them; as for making commercial use of them, that is the last thing Jamaica people would think of, so long as they can get a return on Sugar and Coffee."

In 1865 he says, "The Bamboo is now coming into requisition for paper making, and the Americans are taking away large quantities."

In February, 1860, he says, "I am glad to hear that the Indian Government has taken up the subject of the introduction of quinine producing plants into India; but I think they have done wrong in not making this island the central depôt for the plants." In his next letter he says, "Sir William Hooker has been in communication with our Governor on the subject, and I have freely complied with their request to give all the assistance I can in establishing a plantation in the hills."

Seeds were accordingly sent to him, and in January, 1861, he says, "The seeds of Cinchona nitida, C. micrantha, and C. succirubra are coming up well, and in another month will be ready to prick off. C. succirubra is the strongest. I am sanguine of success, but the task of attending to them is too much for me with my other duties. I have laid the subject before the Government and asked for an assistant, and also that I shall require a field of 60 acres in the hills at an elevation of 4000 to 5000 feet for a Cinchona plantation."

It appears by his next letter that a site had been selected in the hills 60 miles from Bath, and that he had taken up 120 Cinchona plants, sixty of C. nitida, and sixty of C. micrantha. "For the present I have retained all the plants of C. succirubra here, as they appear to stand the lower elevation remarkably well, and are gaining strength."

For the first year they are attended only by negros, and on his occasional visits to them he finds them not very thriving, but at last, having got an assistant (Mr. Thomson), "we are now getting on with our Cinchona plantations."

In 1865 he says, "The Cinchona plantation is thriving; C. succirubra is now in flower, some of the plants are 10 feet high."

HEATING HORTICULTURAL BUILDINGS.*

I have no new or novel invention or improvement to introduce to your notice, my object being simply to endeavour to explain, as far as I can, the main principles that underlie the method of heating by means of the circulation of hot water, in order to draw attention to a subject of great importance to every horticulturist.

It is unfortuate, for the proper understanding of artificial heating, that most of those who have treated of it have not (apparently) been so anxious to spread true knowledge as to push forward, "by hook or by crook," some really good or fancied system of their own. The literature of the subject is full of new and (sometimes very old) startling proposals, calculated in the imagination of their advocates to revolutionise the horticultural world. Thus we find between thirty and forty years ago what was then called "the Polmaise system," introduced, if I am rightly informed, by a Mr. Murray, then gardener at Polmaise, near Stirling, creating an amount of controversy which appears to us now, seeing that no such thing is heard of, as a sad waste of controversial ability; and so on down to the present day an epidemic of something of the same nature breaks out now and again, and after running its course for a longer or shorter period always ends in smoke—and ashes.

Heat itself, as a separate and material substance, apart from other substances, is what we have no knowledge of, and whether it is a substance at all or a quality is what men of science are not agreed upon.

All attempts at artificial heating of hothouses have been in connection with the circulation of heated air or water, separately or combined, and as all the others have turned out failures we may assume that there are the only two really effective practical means of artificially heating horticultural buildings, namely, the old flue and the circulation of hot water in pipes.

The old flue system, which is now almost entirely superseded by the more modern and effective hot water, has, in days gone by, served the horticulturist in good stead, and even yet may, in certain cases, owing to the comparative cheapness in first cost, be used, upon the principle that "half a loaf is better than no bread;" but from its heavier consumption of fuel, the necessity of having separate fires for each house, the trouble and expense caused by cleaning and repairing the flues, and other disadvantages, it is unlikely that any of us may have much more to do with it.

Heating by Hot Water.

Heating with hot water, as far as I can learn, was introduced into England from France about the year 1816, and as the cost of cast-iron pipes receded, so the system has spread, until it now forms an important item in the industry of the country.

There are two modes of applying the principle of the circulation of hot water to the heating of buildings, and although one of these only is more intimately connected with horticultural structures, it may be as well to glance at the other in passing. The one is the high-pressure system, with small malleable-iron pipes, and the other the low pressure, with large cast-iron pipes and boiler.

In the high-pressure system, known by the name of "Perkin's patent," malleable-iron tubes of ¾ inch and 1 inch bore are used, sometimes hermetically sealed and at other times loaded with a safety-valve at a heavy pressure. In this system there is no boiler used, as it was found that no boiler could be made sufficiently strong to stand the enormous pressure necessary to force the water through these small tubes when carried round buildings and dipping through below doors; instead of a boiler proper the tube itself is coiled round the fire. In this way every part of the apparatus is equally strong and able to resist the pressure. You may have an idea what that pressure is when you consider that the fire coils, when in full going order, are heated to a straw colour, although filled with water, and that the tubes are proved to a pressure of from 2500 lb. to 3000 lb. upon the square inch. This is a very convenient way of heating conservatories attached to mansions where the large pipes cannot be very well adopted. The principle is the same as the low-pressure, which I will now endeavour briefly to explain.

* Read before the Scottish Horticultural Association, July 2, by A. D. Mackenzie, horticultural builder.

The motive power in the circulation of hot water in all cases is the difference in weight between the columns of water in the two legs of a syphon. A hot water boiler of whatever shape or form, with its flow and return pipe, is practically an inverted syphon. In every boiler there must be at least two outlets—one at the top, called the flow, and one at the bottom, called the return. Now, suppose we connect these by means of a pipe, long or short, and we have an endless tube, the part formed by the boiler being to a greater or less extent enlarged to catch more of the heat from the fire; and suppose, when the whole is full of water, we apply fire-heat to this part, and immediately the particles nearest to the fire get heated, expand, become lighter, and ascend to the top of the boiler in the direction of the flow-pipe, thus causing a partial vacuum in that part of the boiler next the fire, which is immediately supplied by a rush of colder and heavier water from the return. This, in its turn, gets heated, ascends, is followed by more cold water from the return, and so the circulation goes on as long as we continue to apply the fire. In the first stages of the process, however, there is a double movement in the flow-pipe itself, a current of warmer and lighter water flowing along the top of the pipe from the boiler towards the highest point of the pipe, and another current of colder and heavier water setting in towards the boiler; this must continue until the whole of the water in the flow-pipe gets to a higher temperature, and consequently lighter than the water in the return.

The process is exceedingly simple, and where there is only one circulation it is almost impossible to go wrong; but when there are a number of different houses to be heated from one boiler on different levels and at various distances from the source of heat it is by no means of the same simple nature. It is a universal law in Nature that all substances expand when heated, and, as it is the operation of this law with which we have to do in this case, it will be as well to understand it to some extent. A peculiar property of water, in which it differs from other substances, is that from a certain point of temperature it expands downwards as well as upwards. Thus we find that, instead of 32°, the freezing point, being the point of greatest density in a fluid state, it is 40°—8° above the freezing point; and after that it gradually expands until, at 46°, it stands at the same density as 32°, and it continues to expand below and above these points. This expansion of water in cooling below 40° is the cause of serious damage in certain cases, and it would be well if all who have to do with hot-water pipes should be mindful that if the pipes, being full of water, are allowed to get frozen, they must inevitably be broken to pieces by the tremendous pressure exerted upon them by the expansion of the water in freezing. It has been found that a hollow ball of cast iron filled with water hermetically sealed and with a shell 1½ inch in thickness exposed to a severe frost, was broken into fragments, thus giving us some idea of the power of the slow and silent process going on around us on a frosty day.

But, to return to the subject, we find that a gallon of water at 40° is a little above 10 lb., or, more correctly, $10\frac{1}{160}$ lb. in weight. Suppose, then, we have the apparatus as already explained ready for the fire, filled with water at say 40°, we apply the heat, and raise a gallon of the water 12°. This will make it twenty-eight grains lighter, and consequently the portion retaining its original weight forces the lighter portion upward towards the flow-pipe. It is a mistake to suppose that the mere fact of the water getting heated and lighter is the cause of its rising up. The natural law of gravitation acts upon the heated water according to its density just the same as before, but, it being relatively lighter than the colder portion, it is forced up in the one leg of the syphon, just in the same manner that the pressure of the atmosphere forces up the water in a suction pump when a partial vacuum is formed by the action of the plunger. Continuing then to heat the water in the boiler we raise a further portion of it, say another 20°, or up to 82°, while the portion in the return remains at the original 40°. The difference between the weight of a gallon at 82° and at 40° is about seventy grains, and thus the movement goes on continually, the hot ascending and the cold descending. It must not be supposed that in practice anything like this weight, small as it is, is available as a motive-power, and in some apparatus as much as 90 per cent. is lost owing to the friction and other causes. It must be evident that those boilers which offer the least resistance to the rise of the hot water to the top must be more advantageous then those which upon the plea of more heating power have contrivances for causing the water to travel from the one side to the other losing far more by friction and cross-currents than any gain that may be obtained from greater heating surface.

Forms of Boilers.

As to the most favourable shape of boiler, I am of opinion that the principle of the old saddle is the best and simplest yet before the public. Many have tried their hand upon it and, as has been truly said, "it has been turned upside down, turned on end, and in all imaginable positions," but with the result that the original form still holds its ground against all comers. It is amusing to look back upon the history of the hot-water boiler during the last forty years and consider the so-called improvements put forth. Every one who invents, or thinks he invents, a boiler is sure to proclaim to the world that his is the best, that it does four times the work with one-fourth the fuel of any other boiler ever known before. This has been going on for years, and "the cry is, still they come;" so that one wonders if the time is not at hand when a point is reached that a boiler may be constructed which will require no fuel at all; and indeed it has been lately gravely asserted on the part of one of them, that any rubbish gathered about the yard, was more effectual than the best Newcastle coal with other boilers. I don't mean to deny that there have been improvements upon the old saddle. I consider the almost universal use of malleable-iron instead of cast as an immense improvement, and also the terminal and double flue; but the part representing the old saddle immediately above the fire is what we must principally depend upon. You will find that in steam engineering the part immediately above the fire is counted as a full unit, whilst side or vertical surfaces, even though close to the fire, only as one-half, and in a flued boiler the under surface of the flue is not taken into account at all from the well-known fact that heat will descend but very slowly.

All the boilers in general use may be made to work pretty well if properly built in, and not overloaded with work. Many mistakes have been made on this point for the want of due consideration. You may get the best boiler, and have it rendered almost useless by not being properly built, and by a want of good draught, which is a frequent and troublesome cause of failure. Some people have the idea that, because they find a good deal of heat goes up the chimney, it is entirely wasted; this is not so, and frequently it is more economical to allow the heat to escape direct into the upright shaft than carry it round in flues from which the boiler derives little benefit, and which has the effect of preventing the proper combustion of the fuel. It must never be forgotten that without a strong draught we cannot have a good burning fire, and without the air in the flues and upright shaft being heated to many degrees above the temperature of the external air there cannot be a strong draught; it is plain that the more heat that is extracted from the products of combustion in coming in contact with the boiler, the less there is available for causing a strong current in the chimney, and the argument put forward on behalf of some boilers that they extract nearly all the heat out of the fuel, and at the same time have a better draught than others, is a contradiction in terms.

The better the boiler the more necessity there is for looking carefully to the furnace and chimney. In building-in a boiler, no matter of what shape, be sure in the first place that you are deep enough with your stokehole. A mistake here is fatal. Be careful also that you have your flues as wide and roomy as may be practicable, always allowing about one-third or one-fourth more area in a horizontal flue than an upright shaft; have no contraction, and have every part easily got at for cleaning, If this is done, and you have a moderately high chimney, there is little danger of not having a proper draught and a good going fire.

I need not go into particulars as to the number of feet of pipe that should be allowed for each foot of boiler surface, nor the amount of area of furnace bars, but there is a certain proportion which must not be overlooked. You need never think that by multiplying flues in or round a boiler, or even enlarging it, you can attain satisfactory results, except you proportionately enlarge the area of the furnace bars. It is said that 1 lb. of coal requires about 230 cubic feet

of air, and when the area of bars is too little and the draught bad, combustion must go on very imperfectly and fuel is wasted.

The quantity of piping a boiler is able to heat depends upon contingent circumstances, and each apparatus must, to a certain extent, be judged upon its own merits, but as the quantities given by boiler makers have often led to deceptive results it is safest to allow a pretty wide margin. Three-fourths of the usual number of feet put opposite a boiler is quite as much as it can heat. About 50 feet of 4-inch piping is the quantity supposed capable of being heated by 1 square foot of boiler surface directly exposed to the fire; when above the flame 25 feet by every square foot of vertical surface, and 15 feet by every square foot of flue surface. Of course, the upper half only of the flue is counted. These are the data from which the tables of makers are constructed, and although not to be relied upon absolutely, they are useful as showing the relative powers of each size, and after allowing a margin of from 25 to 33 per cent. may be safely acted upon.

The amount of piping required to keep up a given temperature is very often arrived at upon no clear conception of the case, and the result has been a sad want of thoroughness in this department; and not only has this been the case in horticultural buildings but in churches and other public buildings as well. I was called in lately to examine a church where it was alleged the hot-water apparatus was entirely useless for heating the building, and it was proposed to throw it out and introduce a hot-air stove. On ascertaining the capacity of the church I found that it contained 68,000 cubic feet, and to heat this there should have been about 600 feet of 4-inch piping; instead of this, however, there was only some 200 feet buried in a drain below the flooring, with small gratings here and there to let up the heat. In this case the boiler was blamed at one time, the feeding cistern at another, but the real cause seems never to have been suspected. It is supposed that 1 foot of 4-inch pipe is capable of raising about 222 cubic feet of air 1° per minute when the temperature of the pipe is 125° above the internal air, and that 1 square foot of glass will cool down 50 cubic feet of air 1° per minute when the temperature of the external air is 40° below the air in the house. From these figures tables are constructed, which are more or less useful, but never absolutely to be depended upon, as much depends upon the situation, the form of the building, the closeness of the laps of the glass, and other things, but it is always better to have more piping than is absolutely necessary not only for emergencies of severe weather, but also because there is less trouble in firing, a gentler heat, and more economy of fuel.

In conclusion, let me impress upon you that to have satisfactory results in heating you must have a sufficiently deep stokehole, a large boiler, well built in, a tall chimney, if you can get it, and plenty of piping properly laid. With these and a moderate supply of good coal there is little danger of failure as far as artificial heat in your houses is concerned.

A CHAPTER ON ZINNIAS.

A DEVELOPMENT approaching the marvellous has taken place in relation to the Zinnia elegans of late; and even those who do not generally share the prevailing fancy for double flowers must admit that the double varieties of Zinnia have become so surpassingly fine as to quite eclipse the single kinds. In regard to the size, fulness, and brilliancy of colour in the flowers, the double Zinnia has outstripped the Ranunculus, distanced the Aster, and is assuming a character that will eventually make it a rival to the "lumpish and inelegant Dahlia," as Dr. Lindley once termed it. Some of the newer varieties of the double Zinnia are very large and surpassingly beautiful, and they deserve to take high rank as exhibition flowers.

At the London Road trial grounds of Messrs. Sutton & Sons, at Reading, there can now be seen a large space of ground planted with double and single Zinnias, representing a trial of the various varieties, in order to discover from what source comes the best improved strains. It is a remarkable, interesting, and instructive trial of Zinnias, and is well worthy inspection.

In point of comparison with the double varieties the single Zinnias are practically nowhere as decorative objects. Showy and striking as they are—qualities all the more noticeable because of their great usefulness in the past,—yet it must be admitted the double forms have eclipsed them. The increasing demand for the one will bring about a decline in the other. No one would now venture to grow the single Pyrethrum in preference to the double: in fact, the former are practically out of cultivation, and the single Zinnias will similarly give place to the double types.

> "For still the new transcends the old,
> In signs and tokens manifold."

The leading varieties of the double Zinnia are the scarlet, very bright in colour, large and full, one of the best; rosy purple, a pleasing colour and very good; orange-yellow, atropurpureum, a distinct and fine hue; coccinea, rather brighter than the scarlet; alba, good for a white, but capable of improvement, and somewhat smaller in size than the preceding; crimson, very fine; and Kermesina, a very rich, full, and striking variety. We thus get a good selection of colours.

In the light, friable, rich loam at the London Road trial grounds these double Zinnias have made a free growth; and it is pleasing to notice that a compactness of habit is the prevailing characteristic. The plants were raised from seed in the usual manner and transplanted to the soil they now occupy, where they have grown into good branching specimens. If the Zinnia be treated in this way, taking care the soil be rich and light, and the position suitable, the flowers can hardly fail to come large, full, and satisfactory.

Some time ago a new type of Zinnia, named Haageana, was introduced, and this is now in full bloom at Reading. It is hardly a desirable plant, even when compared with the worst type of single Zinnias. It may be roughly described as a giant form of Sanvitalia procumbens. Zinnia Haageana Darwinii is, in all probability, the result of a cross between Z. Haageana and the ordinary double Zinnias. They are rather dwarfer in growth than the latter, with flowers smaller in size and inferior in fulness and colour. Unless very much improved (and then it can scarcely be different from the double Zinnias of which I have been treating) the sooner the type falls out of cultivation the better for gardens, seedsmen, and catalogues. *R. D.*

VALENTINES.

IT is curious to note how many old gardens are still to be found dotted about the country, of which but little is known. Old gardens, indeed, there are in plenty, but they have mostly been so modernised that they might just as well have been laid out a quarter of a century ago as one or two hundred years since. But every now and then one sees an old garden in which, while the characteristic features have been retained, expansions and modifications have been made which harmonise with the older features, while incorporating what have been secured for us by modern art and modern enterprise. Such a garden is that of Dr. Ingleby, near Ilford, some ten miles from London. Old walls sheltering numerous fine plants, and at whose base nestles a fine herbaceous border; old pieces of water, old walks, old trees—all these are to be seen here in pleasing association with modern shrubberies and new pleasure-grounds. An old Vine should not be forgotten although it lives only in its descendants, the original stem being dead. It was planted in 1768, and from it was taken the cutting which has developed into the more widely-known Vine at Hampton Court. The existing Vines are chips of the old block—that is to say, suckers from it—and their history is given in our volume for 1873, p. 1307. There, too, will be found the history of Valentines in its connection with Archbishop Tillotson and also a brief notice of the gardens, and of the improvements effected under the superintendence of Mr. Earley. Near the fine old wall before alluded to is a rosary, not the largest, but certainly one of the best that we have seen. It is of oblong shape, bounded on all sides by a Rose hedge, 5 feet high and 4 feet through, and enclosing beds of Roses, a Rose temple, and other attributes of the Rose; the whole forming in the season a perfect little paradise of Roses, where the pruning-knife is as little used as may be. There are within the grounds two separate sheets of water, one—the long pond (fig. 51)—overhung by splendid timber-trees, and bordered in part by the Bower Walk, in part by a wall draped in part with Berberis stolonifera as a groundwork, and with the golden-leaved Honeysuckle intermixed, with a rare bed of Lily of the Valley at its base. To the left in our drawing is seen a portion of the American garden; the other sheet of water is upon a lower level, and is supplied from the long pond, the water rushing through an arched cavern. In this lake is a small island, all overgrown with trees; the margins, too, are planted with Pampas-grass and Weeping Willows, and not far off are Scotch Firs, Araucarias, Pinus insignis, and flat-topped Thorns. Elsewhere in the grounds is a noble Cedar, one of the features of the garden. The bare ground beneath its massive limbs may by some be objected to, but to us it seems natural and in harmony with the tree, whose deep green foliage stands out better than if it were associated with green of another tint beneath. The trees which form the background of our second illustration (fig. 50) form part of the Bishop's Walk, said to have been planted by Archbishop Tillotson. The Bishop's Walk forms a noble avenue, terminated at each end by a mound surrounded by a circle of old solemn Yew trees, whose weird limbs and denuded trunks are suggestive of some architectural design, with which Time has dealt picturesquely, it is true, but none the less destructively. In the centre of this avenue is an opening, from which three walks diverge, producing a singularly impressive effect. Near one end of this walk, in a depressed hollow, is a wild fernery—a delightful feature.

In the selection and disposition of the shrubs and trees on the lawns Mr. Earley has shown an amount of knowledge of suitable materials and of interesting and beautiful plants not often possessed by gardeners, while his taste in arranging these materials is worthy of all praise. He had a fine opportunity, and he has used it well.

The fruit garden is divided by walls into three separate compartments, well adapted for fruit growing, and well stocked. Here is the double vinery, each division some 40 feet in length, wherein the parent of the Hampton Court Vine still stands. In these scattered notes we have only sought to indicate, not to describe, the leading features of this very charming garden, the arrangements in which do credit to Mr. Earley. In the manner, too, in which he has availed himself of the adjoining park, cutting out openings to let in views, and so planting as to enhance their effect, Mr. Earley has been very successful.

A SUBURBAN VILLAGE.

LONDON and twelve miles round may, in many respects, be looked upon as one vast city; its outskirts, stretching road after road and street after street, are, at any rate from a picturesque point of view, but little better than so many suburban towns, all trace of rurality save of the most meagre character being blotted out by bricks and mortar—maugre a fairly-sized forest tree here and there, not a vestige of sylvan scenery remains. The exception proves the rule, and so to prove that dull streets and duller houses, with forecourts and backyards miscalled gardens, are considered country, we quote a notable exception. It is a village within eight miles of Charing Cross, not a fashionable suburb like Richmond, but a veritable village, where life goes on more regularly and slowly than in more frequented retreats—where there is no royal park to make it the hacknied resort of school parties and holiday excursionists, and no river to attract a mixed crowd of oarsmen and idlers; but it has what is more beneficial and more refreshing to the jaded Londoner, not a mere whiff of country air, but a full breeze that blows from the Surrey Downs and Kentish uplands, and brings with it no one knows how many sweet scents and wholesome odours.

A breath of the sea comes with a keen nor'-easter, the southerly winds waft the consumption-curing aroma of the Hop, and should the gentle sou'-westerly prevail, it brings on the wings of the gentle zephyr that fans our cheeks the perfume of the Lavender and the incense of the wild Thyme breathed from the fields and commons around Mitcham. Unknown to fame, the salubrity of the atmosphere is not unappreciated, the residents boasting with pride that seven different airs blow over the little spot, charming away miasma and effluvia, and keeping it for ever fresh and healthy. The greatest charm, however, is in the fact that, although surrounded by many resorts more pretentious but less worthy, this little spot has as yet remained uncontaminated by the touch of popularity—it continues a little village beyond the pale of gen-

tility, and only hanging on the skirts of fashion by this slender thread that its inhabitants, all working-bees, make their home here because it is cheap, and go into more populous and less favoured spots to their daily labour. A struggling, straggling, much-built-upon village, where one-storied cottages are in the the majority, and shops are almost *nil*—where there is not a window from which there is not a prospect of undulating meadows or hill-sides clothed with trees, where the sun sets below a horizon of distant blue-grey hills, or, when angry, sets his flaming seal on window after window, and floods the landscape with the light of his dying glory. Our village, too, boasts a very fair number of gardens—not villa gardens trimly set after the fashion of the day, like the ladies' dresses, all of one pattern, only differing in colour, but veritable cottage gardens, where the best culture and the largest space of ground are given to the homely, useful Cabbage and Potato; where Scarlet Runners form the ornamental climbers that cover the fence, and where unsightly mounds are honoured by being overrun with the broad handsome leaves, rich golden flowers and ponderous fruit of the Vegetable Marrow, where use not ornament is the main object, but where beauty is not quite forgotten, for the front plot must have its complement of flowers, and the windows their curtains of greenery. As yet the immediate neighbourhood is free from the bane of lodging-houses; the ozone of the atmosphere has not yet been appraised and sold to the highest bidder in the form of furnished apartments. At present such accommodation is conspicuous by its absence.

Almost new in its entirety, in one corner of this hamlet there lingers a remnant of the olden day, a picturesque farmhouse with overhanging brow and Ivy-mantled head, built in the reign of Elizabeth; its ample roof, sloping almost to the ground, is partly covered with a dense growth of House Leek, of various tints of green and many flowers. A fine old Walnut tree, whose trunk lies almost level with the ground for some length, rears mighty branches whose bright pale-green leaves form a beautiful contrast to the dense growth of Ivy, with which gables and chimneys are almost covered. A relic of a bygone time this house still stands and points back to the date when a village on this spot was but a hazy vision of the future, as the name of it now is but a dreamy recollection of the past. Speculation has turned a heath into a town, and having cut down and dragged up all along the lines of the future streets and roads the trees and shrubs which adorned the whilom common, Art has to step in to re-embellish by the aid of horticulture, to plant and cultivate and render profitable the denuded land, and lend its help in covering with elegant creepers and handsome blossoms the otherwise unsightly bald brick buildings. Already many a tiny plot is remarkable for some especial beauty; here it is a most happy blending of the chaste exquisitely variegated foliage of the Japanese creeper with the splendid dark purple flowers of the Clematis Jackmanni. Like beauty leaning upon strength these two plants growing together are mutually effective: the Clematis with its wealth of flowers and paucity of leaves finds an unsurpassable foil in the delicate veinings, and greeny yellow tint of the elegant creeper. In another spot attention is rivetted by the rich blood-coloured blooms of a standard Rose, with numberless flowers in every stage of development, from the embryo bud to the more than full-blown flower, whose fallen petals might, from their brilliant hue, have been the very ones that Venus' blood had dyed.

Another notable feature is a fine scarlet Pelargonium which, planted against a house, grows some 12 or 14 feet high, covering a recess up to the very top of a window, and bearing aloft a goodly number of full clusters of scarlet blossoms.

The majority of the gardens are well kept, many remarkably so. Perhaps a forthcoming local flower show has somewhat influenced the matter; at any rate, there is a schedule containing a goodly number of prizes for amateurs and cottagers, and we shall note the result of the exhibition with interest. *Jane Jerrold.*

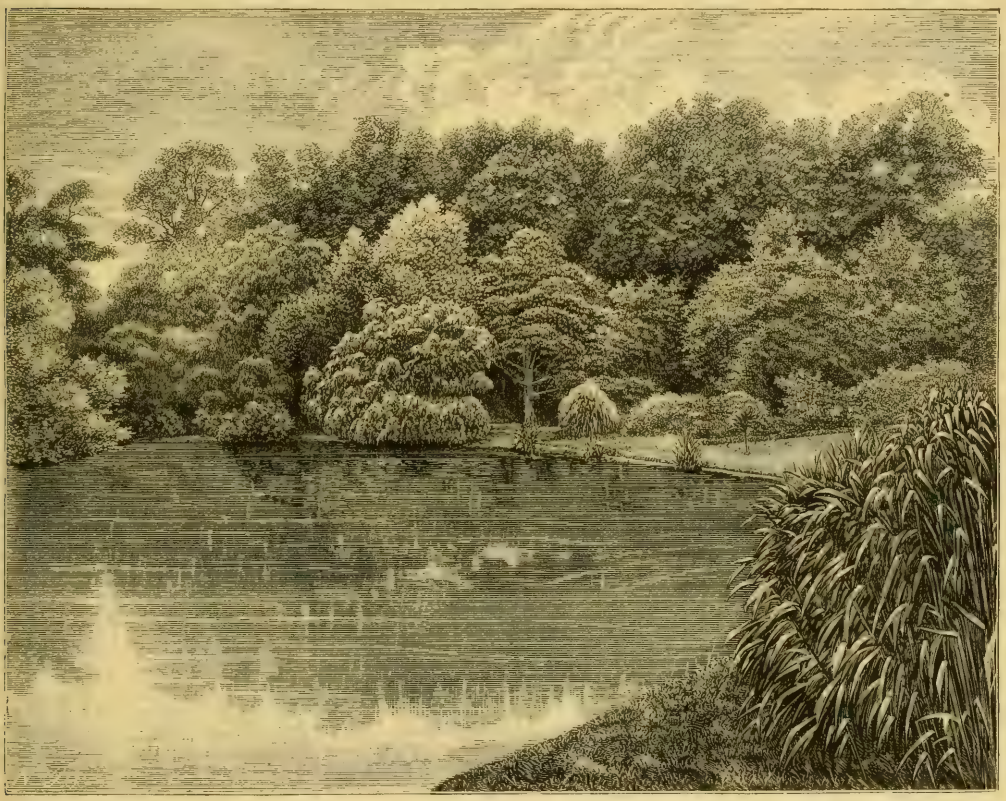


Fig. 50.—View in the Gardens at Valentines. (see p. 272.)

Florists' Flowers.

Seasonable Notes.—Attention more or less is required at present by all the subjects cared for by the florist. Auriculas have now all been repotted, but the smaller plants and seedlings will require potting a second time about the first week in September. Plants that have made vigorous growth in small 60's may now be repotted in 48's. If the shift seems to be a large one, rather more drainage should be put in, as no greater mistake can be made than to over-pot in September. The plants had become infested with greenfly, and as it is not quite safe to fumigate with tobacco smoke when the plants are

in vigorous growth, it was necessary to advert to the tedious method of brushing the pest from each plant separately with a small camel-hair brush. Of course all decaying leaves must be removed, not must any weeds be allowed in the pots. Many of the plants have thrown up flower trusses, these are removed as soon as we can get hold of them with the finger and thumb.

Polyanthus are akin to the Auricula, and require very similar treatment when they are grown in pots; but they are not grown in pots all the year round, they are planted out when the flowers fade early in May and are repotted early in September. Some growers indeed have two sets of plants, and they grow each set in pots alternately. Thus the plants that were put out in the open ground in May are not potted up till September, sixteen months after. Certainly it is trying to the plants to be shifted about so frequently, as those of us are obliged to do who have small collections, but notwithstanding we have a very fair measure of success. They require the soil in which they are potted to be rather heavier than that used for Auriculas, but like the Auricula they must not be over-potted. I divide all the plants into single crowns, and find that 5-inch pots are large enough to grow the strongest in; they may be a trifle smaller for weaker crowns.

CARNATIONS AND PICOTEES.—We have now finished layering these, and have arranged all the pots conveniently out-of-doors. The surface soil of the pots is removed and the layers are pegged down into some light sandy soil, which is placed there for this purpose. Pinks have not yet been planted out in some light soil, as they would have been a few weeks ago if we had had time. The plants become weakly if they are not planted out of the boxes in which they are struck. Later cuttings are not yet rooted, but they are looking well and we hope to have a good strike. The ground must now be prepared for the plants by trenching and manuring, and the surface should either be lightly forked over or Dutch-hoed two or three times during the next six weeks: at the end of that time the plants ought to be put out. I generally place some light loam free from manure on the surface and plant the Pinks in that light soil. Plant them 8 or 9 inches apart, and press the soil firmly round the base of the plants.

Dahlias now require considerable attention, the principal care is to shade the flowers and destroy earwigs. The insects feed at night and retire at daybreak into any convenient shelter. Some persons have small pots inverted on the top of the sticks with a little dry moss in the bottom, which serve for hiding places for them, and a man must go round every morning and shake them out; or they may be caught in lengths of hollow bean-stalks or Hemlock stems. Two or three of them should be placed near the top of the plants, between the stick and stems to which they are tied—the insects can be blown out by applying the mouth to one end of the stem. The anxious cultivator will also be out at night with a lamp to destroy any he may see feeding on the flowers. In our neighbourhood it has not been necessary to water such plants except once or twice this season, but in districts where there has been but little rainfall, water must be freely applied, and in every case the ground over the roots should be mulched with rotted manure. This is desirable for Phloxes, Pentstemons, Hollyhocks, Asters, Delphiniums, and in fact every class of free-rooting plants. *J. Douglas.*

Notices of Books.

Kulturpflanzen und Hausthiere in ihrem Uebergang aus Asien nach Griechenland und Italien sowie in das ubrige Europa. *Historisch-linguistische Skizzen.* Von Victor Hehn. *Dritte verbesserte Auflage.* (*The Migration of Cultivated Plants and Domesticated Animals from Asia into Greece and Italy, &c.*)

The third edition of this important work calls for a brief notice. To the botanist and horticulturist it is perhaps of more interest from its "historical linguistical" side than as an authority on the origin of cultivated plants, though the author appears to have neglected no trustworthy source of information on this point. So little is beyond doubt on this point that it is idle to criticise the author's views when he disagrees with the recognised phyto-geographers. Indeed, he enters the lists himself against them, and meets such critics as Griesbach and Heer on by no means unequal terms. But whether he is right or wrong on certain points, his book of some 550 pages is one of the most interesting that we have taken up for some time. It abounds in quotations from the early Greek and Latin and other writers, and those from the dead languages are mostly given in translation as well, "for the benefit of persons who are so unfortunate as to have grown up without learning them." The Grape Vine, to which 20 pages are devoted, comes first under consideration. Here we may trust the author so far as its ancient history is concerned, but he is not reliable in its modern history. He seems to have conceived the idea that the Grape Vine for wine producing will only flourish at its best in the Mediterranean region, taking rather a wide sweep around that sea. Thus with respect to the southern hemisphere, he states that with the exception of the inconsiderable Cape country, the Grape Vine is not present in the narrow temperate region suitable to its culture. One would ask, has he never heard of Australian wines? In Chili, too, it is recorded that the Vine is successfully grown. In the New World, he adds, it does not thrive, though California may now produce a few hundred thousand hectolitres of ill-tasting wine. Such careless statements detract considerably from the value of a serious work. There are reasons for believing that the vintages of California and Australia may one day rival those of Europe. What has already been achieved cannot be disposed of with a few contemptuous words; and what experience may effect we cannot foretell.

—— *Alphabetical Handbook for England and Wales* (Murray, pp. 501).—A very useful gazetteer for the tourist or for the "stay-at-home traveller" who requires topographical information in a small compass, and of a kind that he is not likely to find in more pretentious works. We have tested the volume in several places known to us, and with such satisfactory results that we can confidently recommend the volume to our readers as a very serviceable compendium. A railway map forms an indispensable adjunct to the book.

—— *Sketches for Cottages, &c.*, By R. N. Shaw, R.A. (Lascelles, Bunhill Row.)—This is a series of designs for cottages and other buildings designed to be constructed on the patent cement slab system of W. H. Lascelles. The designs are eminently pictural, and suitable for country districts. They are close imitations of old models, and to that extent destitute of originality, while, as in the small-paned windows, the old and inconvenient is copied rather than adapted to modern requirements.

—— Messrs. Ward, Lock & Co. have done excellent service in reprinting, at the low cost of one shilling, each volume of Butler's *Analogy of Religion* and Paley's *Evidences of Christianity*. The latter book is somewhat out of date, and not in sympathy with modern thought; but Butler's close reasoning and well-sustained argument may be read with as much profit as ever. A useful summary of the argument and an analysis of the facts and postulates on which it is founded is prefixed in both cases, but we could wish that the editor had confined himself to these and not defaced the text with notes expressive of his own personal views and opinions—often on subjects on which it is fair to infer that his opinion is of no special weight.

PUBLICATIONS RECEIVED.—Journal des Roses. — Botanische Zeitung. — Gartenflora. — Midland Naturalist.—Gardeners' Monthly.—Nuovo Giornale Italiano.—Glasgow and South-Western Panoramic Guide.—Nature.—Bulletino Amphelografico, fasc. ix. —Journal de la Société Centrale d'Horticulture de France.—The Indian Forester.—Bulletino della R. Societa Toscana di Orticultura.—One and Three (Bradbury & Co.).—Inquiry for Seeds of Grasses, &c., Brisbane, Queensland. — Vick's Illustrated Monthly Magazine. — Bulletin d'Arboriculture. — Revue Horticole.—Handbook of the British Flora, fourth edition, by G. Bentham, F.R.S. (Reeve & Co.)—E. Regel, Descript. Plant. Nov., fasc. vi. — Agricultural Statistics, Ireland: Live-stock. — Illustration Horticole.—Monthly Floral and Fruit Magazine.—The Poverty of India, by Dadabhai Nagroji (Vincent Brooks).—Bulletin d'Arboriculture der Deutsche Garten.—Forest Tree Planting, by Dr. Schomburgk.—Science Gossip.

Garden Operations.

PLANT HOUSES.

Now is a good time to take off Banana suckers with a view of pushing them forward for fruiting next spring. Pot them in rich loam with a good sprinkling of deer-dung incorporated with it, plunge them in a bottom-heat of 95°, with a top-heat of 90° or 100° at shutting-up time, but allow it to fall to 75° for night temperature. Keep the atmosphere of the house well charged with moisture, and syringe the plants overhead pretty freely; under this treatment the plants will soon make growth both in foliage and roots, when the bottom-heat may be gradually lowered to 85° minimum and 90° maximum. Immediately the pots are filled with roots, and before they get entangled, the plants should be planted out in a bed of the best and richest loam procurable, with which should be mixed a liberal quantity of deer or sheep dung rubbed through a half-inch sieve to separate the large lumps. Bottom-heat is indispensable for the well-being of Bananas, and a mean temperature of 87° should always be aimed at. The plants delight in plenty of sun, and should never be shaded except for a few days, when the suckers are potted in a rootless state. Established plants should have free ventilation from the top of the house during the forepart of the day, but they should be shut up early, and, if possible, run up to 100° or 110° with sun-heat, the plants being syringed overhead freely. In fact, the more heat and moisture they get in this way the better they seem to grow. The plants are also gross feeders. When the soil or beds get full of roots they should be liberally supplied with good liquid water, taking care to make the liquid of the same temperature as the bed, otherwise the plants will receive a sudden check, which no after-treatment will rectify, neither should they be stinted for water, otherwise it will cause them to fruit prematurely, the produce really being almost worthless. We give our plants a thorough drenching about every ten days or a fortnight, but this depends on the weather and the state of the border. A border full of roots in hot weather dries much quicker than in dull weather, but a fortnight may be taken as the average time. Good stout suckers planted this month, and under good management, will show fruit about next February, and ripen about the end of June; from the time that plants show fruit until they are ripe in the summer is about four months, while on the other hand it takes from five to six months to ripen them during the dull months of autumn and winter. Immediately the spike of fruit is formed, and the last whorl that will swell is discernible, cut off the point containing the useless pips so as to throw all the strength of the plant into the pips that will swell, at the same time get a stout pad of leather and put it round the shank or stem of the fruit and then by means of a stout chain sling up the fruit to the roof of the house to prevent it breaking down the plants: the pad of leather is to prevent the chain cutting through the stem, as a bunch of well grown fruit will weigh from 70 lb. to 100 lb. About the same time as the plants show fruit they will also throw up suckers from their base, two of which should be selected to remain on each stool and the others rubbed out. Those selected to remain will develope themselves into good strong plants, while the parent is swelling off and ripening its fruit. Immediately the fruit is ripe the parent plant is cut out, and the two suckers left to take its place; these will in a very little time take their turn in fruiting, as four months growth at least will be made while the parent is ripening its fruit. After the suckers have ripened their fruit the beds should again be cleared out, refilled with soil, and other properly prepared suckers planted as previously alluded to. Bananas always develope and ripen much better fruit in summer when assisted with abundance of solar heat than when produced during the sunless weather of autumn and winter. Bunches of fruit produced during the latter season are always short and dumpy and never attain the weight of summer fruit although they may be equally good in flavour. Under the above treatment we have grown fruit running from 85 lb. to 97 lb. per bunch, and have now two bunches developing which bid very fair to equal anything we have yet grown. *J. Ollerhead, The Gardens, Wimbledon, House, S.W.*

ORCHIDS.—As the more forward plants in the several sections advance in growth and approach maturity it will be necessary that they should have a little more individual treatment bestowed upon them, so that in regard to shading, air, and water, the conditions essential to their thorough and perfect formation may be observed and attended to. They thus attain a stout healthy growth matured in good time, and when the blooming period arrives they will, on account of such maturity, produce a fine display of perfect and well coloured blooms. Though these periods are not so decisively marked in some species as they are in others, there is, however, no doubt but that in all cases a stout, mature, and plump growth is

very helpful to the production of a strong spike in the growth about to bloom, whether it is the last made bulb or, as in the case of many Dendrobiums, the growth produced the season previous. Such plants as Dendrobium Cambridgeanum, which finished their bulbs some two months back, yet continued rooting for some time longer, will now be found to be at rest. Let them now be placed in a cooler house, where air and light are freely given. As soon as D. chrysanthum has gone out of flower it should also be placed in the same house. If this is not attended to with this species as soon as it has flowered it will start almost immediately, the consequence being that weakened breaks push away and the growth is formed of great length, but far too slender. As D. crassinode and Wardianum finish their bulbs they, too, must be stood in the cooler division, though the amount of cold to which they should be exposed must be less than would be given to those just named, partly on account of the difference of locality in which they are met with in their native habitats, and partly also as a precautionary measure. Large plants of crassinode and Wardianum are too costly to submit to extremes of treatment.. Let Calanthes now finishing their growths have a good supply of water, and liquid manure may occasionally be given them; extra light also must be given by running up the blinds earlier in the afternoon on bright clear days, and unless the sun is very clear the shading will not be required at all, that is presuming the Calanthes are grown in a structure where the treatment given will be such as will suit Calanthes first and chiefly; for, considering the great quantity of bloom these will bring during the winter months, it surely is worth while growing a number of pots, so that for several months the houses may be gay and attractive with flowers of a choice and useful nature. Mesospinidium vulcanicum is a very pretty plant for the Odontoglossum-house, and one that should be grown in small baskets, for since it is of a small and compact habit of growth, and never attaining a very large size, it should not be made up in masses. It will now be in many cases in flower, and its spikes of bloom, which are of a deep yet bright rose colour, as they hang just over the green foliage of the other plants have a very pleasing effect. *W. Swan, Fallowfield.*

FLOWER GARDEN, ETC.

Referring again to some noteworthy plants of the season I must reiterate the praise I some time back accorded to the Zinnia Haageana imbricata flore-pleno; it maintains a dwarf compact habit of growth, is very free flowering, and a charming deep yellow colour, and the plant being sturdy and stiff it bears the weather very well indeed. Amongst other noticeable plants in the mixed borders—which should now be not only reasonably gay with plants in season, but also a source of great interest to the lovers of flowers—Calliopsis Drummondii is conspicuous; its rich tone of yellow helps very much to relieve the more sober tones of many of its equally interesting companions, whilst its own brilliancy is heightened by contrast with the ever-bright spikes of Gladiolus Brenchleyensis, which is a great feature just now, and its reasonable price should conduce to its being more extensively employed for the production of effects, since its season may be prolonged by planting at intervals from the beginning of March to the end of May. The varieties of dwarf double French Marigolds are becoming conspicuous, and amongst them is a very dwarf and compact variety of Dean's, having large yellow flowers, very effective in combination with other plants, and would also be very fine in masses in beds. The thorough enjoyment of the garden is greatly dependent upon the amount of labour which can be devoted to the maintenance of a neat and at the same time natural appearance. Freedom from weeds and dead foliage and exhausted flower-stems are among the essentials. An even but broken-up surface of soil is also necessary. Moreover, the supports to the plants and the tying material should be kept out of sight as much as possible; this is not difficult with the strong-growing plants with abundant foliage, to which stout stakes must be driven in, and can be hidden in the fastening; but lighter and more delicate plants may have tolerably stout but short stakes driven in, and the stems loosely looped to them in sections, not tied round in bunches like faggots, which is very objectionable. Wherever seed is not required it is always desirable to pick off all seed-pods, which will strengthen the late flowers. The late abundant rains have induced an extra strong growth in many plants, a portion of which should be removed for the sake of maintaining a neat and dressed appearance; the same cause also has given a strong impulse to the growth of the grass, so that the mowing-machine must be constantly at work, and all grass edgings and verges neatly clipped. Now is also the best time to clip boundary-edges, as there will be no fear of their making another growth this season. We may soon be on the look-out for the usual equinoctial gales, it will therefore be well to give extra support to all strong-growing, heavy-topped, sub-tropical and other plants, which have made great progress lately. Roses also have thrown out an unusual number of strong rampant shoots, which should be cut back at once both for the sake of a neat appearance and to divert the vigour towards the weaker shoots. In the case of hybrid perpetuals it may be desirable to retain the strong shoots which have blooms at the end, in which case they may be partially bent down and fastened to stakes. Now is a good time to propagate Hollyhocks from cuttings. The best medium for the purpose is a frame with a gentle bottom-heat from stable-manure. From 4 to 6 inches of fine soil should be laid over the surface and pressed down evenly, and the cuttings, made from the small shoots about the size of a quill, inserted in a sloping direction all over the bed. They should be shaded from bright sun until there are signs of growth, after which ventilation, and eventually free exposure to harden, will be necessary. It sometimes becomes necessary to thoroughly trench up the mixed herbaceous borders in order to replenish them with fresh compost, and to rearrange the plants, and early in October is the proper time to do so; and where this is contemplated it is not desirable to fill up vacancies with the seedling perennial and biennial plants, which, as they ought not to be left to draw up in the seed-beds, should be at once planted out in the reserve garden; but where trenching is not necessary they may of course be planted at once in the borders as vacancies occur. The cuttings of Pinks will now be ready to transfer to beds or borders. The site intended for them should be deeply trenched up and enriched with fresh compost of very decayed manure mixed with sharp road-scrapings and sound loam. *John Cox, Redleaf.*

FRUIT HOUSES.

Orchard House. — There is much complaint about the want of flavour in the fruit this year; and when the trees are grown in pots it is often very difficult to obtain the fruit of the highest quality. It may be as well to enumerate the causes that conduce to this, and truth compels the admission that the largest number is due to want of care on the part of the cultivator. One cause is insufficient drainage in the pots, and this is brought about by placing the potsherds or oyster-shells carelessly in the bottom of the pots. Place a large piece over the bottom-hole with the convex side under, and over it other large pieces in the same position, finishing off with smaller bits, and over all some tough fibre shaken free from loose earth. This will certainly prevent the drainage from being choked. Care must also be taken to keep worms from getting in. When the plants are in the house I stand each pot on two bricks to allow the air to circulate freely under the pot, and also to keep out worms. And when the pots are turned out-of-doors for the winter, I place them on a hard bottom, and under the pots a layer of soot. When the water cannot pass freely through the pots the soil becomes sour, and the fruit produced will be worthless. Another cause of insipid fruit is injudicious watering. After the fruit is well set and the trees growing freely there is little danger of over-watering if the drainage is good, up to the time the fruit becomes soft, but when it is within fourteen days of the fruit ripening great caution is necessary. It will not do to go tapping the trees until the pots ring from overdryness, this would be worse than over-watering, as it would injure both the trees and the fruit. On the other hand, the soil should be rather dry before water is supplied. Another cause which may be controlled by the cultivator, is over-cropping. Some persons are so loth to thin out the fruit sufficiently, and they allow it to remain until it is too late to remove it, for if it is not removed until the fruit begins to take the second swelling the mischief is done. A tree will only produce a certain weight of fruit, and if too much is allowed to remain it will not grow to full size, and will be much wanting in flavour. I have tasted Nectarines quite bitter from the trees being over-cropped. Another reason, over which the cultivator has but little control, is the want of sun. I do not say the cultivator has no control over the seasons, it would not be right to do so. If the orchard-house is well constructed, the anxious cultivator will pay considerable attention to ventilating; and the temperature of the house can be kept as high on a dull day as it can on a sunshiny one by keeping the ventilators closer on the one than on the other. Instructions have been given on previous occasions as to the care required in the various operations alluded to, and if these instructions have been attended to the results ought to have been satisfactory. I must also allude to repotting: if that has not been done it ought to be seen to at any early date. There is greater certainty of a crop the following season if they are repotted before the leaves fall, as then the young trees have an opportunity to form roots in the fresh potting material in the autumn. This applies to all fruit trees cultivated in the orchard-house.

Vines.—Houses in which late Grapes are intended for keeping through the winter, either on the Vines or in the Grape-room, will require liberal ventilation with gentle fire-heat for the maintenance of a rapid circulation of air. Gradually reduce strong laterals as days decrease in length, and keep the foliage in a clean healthy condition by means of a moderate supply of moisture to the walls, paths, and floors sufficiently early in the day to admit of the atmosphere becoming light and buoyant before nightfall. Ripe Muscats hanging on Vines having their roots in deep outside borders will keep a long time if protected from the direct influence of the heavy rains now falling in differents parts of the country. A good covering of dry Fern, shutters, or, best of all, spare lights placed in a sloping position, answer well for throwing off water, while they attract sun-heat to the surface of the soil. If the foliage is not sufficient for the protection of the tender skins of the berries, some light shading may be found necessary on bright days, particularly if the houses are glazed with large squares of strong glass. Haythorn's hexagon netting answers well, as it does not impede light, and it may be made to do double service by being drawn over the opening lights and ventilators for keeping out wasps, which are unusually numerous and troublesome this season. These pests seem to have their especial favourite Grapes for feeding upon—Venn's Seedling, Madresfield Court, and Trentham Black coming in for their first and undivided attention. Proceed with the lifting and relaying of the roots of early and mid-season Vines without delay. Use new turf with a liberal admixture of brick and lime rubble, charcoal, and crushed bones. See that the drainage is satisfactory, and follow with large sods of turf, grass side downwards. Keep the roots well up to the surface, always bearing in mind that a narrow border well filled with active roots is preferable to a large mass of soil at the outset, as the roots can be more easily excited and fed at the proper time, and the Grapes invariably set and colour better. Choose dry weather for making the borders. Cover up when finished with good stable litter, and keep the interior of the house close and moist, until the foliage shows signs of fresh root-action having set in. In cold unfavourable districts Vines should always have the range of internal as well as external borders, as the roots can then be lifted and relaid in either of the borders without injury to the following year's crop. Pot Vines intended for early fruiting should be removed to the shelter of a dry airy house. Give just sufficient water to keep the roots in a healthy state, and reduce the necessity for its frequent application by covering up the pots with dry Fern or stable litter. *W. Coleman.*

Orange Trees in Pots.—The great difficulty in growing these trees is to keep them clean. If they could be cleaned from scale by simply syringing them there would be nothing to complain of. Even without the presence of scale the upper surface of the leaves becomes coated with a sticky substance, which ultimately becomes black. I do not see any difference between it and honeydew, but it is honeydew deposited without the presence of insects. This and scale can only be removed by hand washing with strong soapy water. The Oranges also become coated with it, and it is very desirable that it should be removed from the leaves before it spreads to the fruit. Attend to syringing copiously with clear tepid rain-water, and maintain a temperature of from 65° to 70° at night. *J. Douglas.*

Strawberries in Pots.—The progress that Strawberries have made during the past fortnight is in every respect satisfactory. The crowns are becoming plump and prominent, and all fruitless plants can now be detected at a glance. Such plants should be cleared away at once where there is even a suspicion of their being barren, and replaced with the most promising of those that still remain as surplus stock, the remnant being planted out in favourable situations for producing runners next year: for this purpose we plant single rows round the brakes in the kitchen garden annually, of course changing their position each year. The plan is to be commended for two reasons, first, because the plants do not shade one another, and the runners are therefore stronger and as a rule earlier and better developed than those to be obtained from older plantations; and secondly, because there is more freedom of action in layering the runners without any risk of treading the crops. Worms and weeds are troublesome at present, prompt means should be taken to eradicate both. The pots should also be wide enough apart to be clear of each other so as to expose the crowns fully to the influence of every blink of sunshine and ray of light. Crowns, too, are numerous in such varieties as Vicomtesse Héricart de Thury and Sir Charles Napier (the latter a grand Strawberry for exhibition): these should be reduced to the centre or strongest one, not when they have attained any considerable size, but as soon as they can be taken hold of with the finger and thumb and lifted clean out of the socket at the side of the main crown where they have formed themselves. Concentrate all vigour into the main crown, have but a few vigorous flower-spikes, select only the largest and best formed flowers, and there need be no fear of having a handsome crop of large fruit which will be creditable alike on the dessert or exhibition table. *W. Hinds.*

THE

Gardeners' Chronicle.

SATURDAY, AUGUST 31, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept 2	Sale of Dutch Bulbs at Stevens' Rooms
WEDNESDAY,	Sept. 4	Glasgow and West of Scotland Horticultural Society's Show Sale of Dutch Bulbs at Stevens' Rooms
THURSDAY,	Sept. 5	Stratford and Forest Gate Horticultural Society's Show (two days) Dundee Horticultural Society's Show (three days)
FRIDAY,	Sept. 6	Sale of Botanical Books at Stevens' Rooms.
SATURDAY,	Sept. 7	Sale of Dutch Bulbs at Stevens' Rooms.

IF it were not for the urgency of the matter, we should be almost ashamed to revert so often to the condition of HYDE PARK and KENSINGTON GARDENS. But often as the matter has been broached, greatly as the evils have been deplored, and numerous as have been the suggestions offered, little or nothing has been done to avert the disaster of the destruction of our finest metropolitan park.

While badly-made roads have occupied the attention of the authorities, roads which were not wanted made in various directions, and roads which were all that could be desired have been, as it were, surreptitiously diverted in the dull season when London is out of town—while thousands of bedding plants and bulbs which can be bought and renewed at any time for a small expenditure have been year by year lavished in the Parks, little or nothing has been done in the case of the trees. The dead or dying have been cut down, the weakly ones lopped, till all sort of beauty has been cut away. Successive First Commissioners have worked their will—some have done nothing, others made mischief that cannot be repaired, not one has taken up the matter as it deserves. Far be it from us to undervalue the bedding-out arrangements and the other works that add so much to the beauty and attractiveness of the Park. These things have their value, and they are the special delight of many who are ignorant of the nature and inappreciative of the beauty of trees, but they are temporary and ephemeral. A little more or a little less labour, a few pounds more or less, and these departments can be kept at a high standard, or if necessary or desirable they could be diminished without much injury to any one. But in the case of the wooded portions—the chief glory of the place—a century can hardly repair the follies of one First Commissioner. In this case a well-considered plan of operations is necessary, and it must be carried out gradually, after thorough investigation of all the circumstances. This is not a case of a little extra labour, or a larger cheque for expenses in connection with the raising and disposition of bedding plants; it is a case, as we have said, of well devised procedure carefully carried out over a series of years.

First of all, an accurate survey should be made so as to get at the full extent of the mischief, then the nature of the soil and of the drainage should be investigated, and when the circumstances have been fully noted, then the forester and landscape gardener should devise remedies, or as, in most cases, the disease is past remedy, should set about the formation of new plantations and new avenues. Speaking generally from our own observations and from those of our correspondents, the cause of the death of so large a number of trees is manifold and various in different parts of the area. In some cases the trees are dying of premature old age. First Commissioners may not realise that trees die of old age, but they do, and as London atmosphere and London food are not always of the best, the period of senility to which trees and all living creatures must attain comes earlier than it would otherwise do. Then in many cases the soil seems exhausted, and the fallen leaves which should in the natural course of things replenish it are removed. The soil gets hardened by constant trampling, and baked by hot sun, so that when rain does come it does not soak in, neither does air obtain access. The feeding roots are always near the surface, and from the circumstances we have mentioned they get starved and burnt. In other cases thinning has not been performed at the proper time. First Commissioners and park-owners generally are often very loth to cut down a tree, they dislike sacrificing an individual for the good of the community. In their own lifetime perhaps they do not see the mischief which this over-solicitude brings about, though if they would use their eyes they could scarcely fail to see it. In other cases, probably, over-drainage and the nature of the subsoil are the causes of the death of the trees. But on these points no one can speak without a careful survey.

What, then, should be done? A full answer to this question, of course, cannot be given till all the circumstances we have alluded to are known, but certain points suggest themselves at once. Let certain areas be enclosed, the surface-soil refreshed with fallen leaves, road-scrapings, maiden loam, if possible; let the dying trees be removed, taking special care not to court failure by planting young trees in their places, as is not unfrequently done. But while something may be done in this way to preserve what we have, and to stave off the evil day, it is even more important to think of the future. New plantations should be made and new avenues laid out. For this purpose certain areas should be enclosed for a few years, the soil thoroughly trenched, and ultimately planted according to a well-devised plan. The work must necessarily be spread over a series of years, and it might be done so as to cause little or no inconvenience to the public; and while we of this generation might hope to preserve some of the sylvan glories of the Park, we should have the satisfaction of knowing that we are leaving a fine inheritance to our successors.

—— RHEXIA VIRGINICA.—Melastomads, at least those worth cultivating, are generally large stove plants with fine foliage, strongly ribbed leaves and conspicuous flowers of strange structure. For their successful culture they require means and appliances beyond the reach of many; but in Rhexia virginica is a plant which may be grown in a peat bed, and though it is difficult to grow well, yet the difficulty is not a financial one. It is a herbaceous perennial propagated by dividing the root, or by cuttings. It has a fleshy root-stock, from which are sent up lanceolate stems 12—18 inches high with opposite sessile leaves, slightly hairy on the lower surface. The flowers are borne in terminal panicles and are of a rosy purple colour, the strangely formed anthers being very prominent and of a bright yellow, so that they afford a striking contrast with the petals. A botanical curiosity is not often a plant which attracts the general observer for its superficial beauty—knowledge and taste are required to appreciate a botanist's pets—but here we have a plant which every one who likes flowers is sure to admire, and those of a botanical turn of mind are equally certain to appreciate for its singular structure and the evidence it affords of adaptation to a particular purpose. Our specimen (fig. 49, p. 269) was figured from a plant in Mr. PARKER'S nursery at Tooting. The plant is in digenous to the Southern States of North America. It flowers in July and August, likes a moist, peaty soil, but the water must not be stagnant. Moreover, it is advisable to protect the roots in winter with a little litter.

—— THE VERSAILLES EXHIBITION. — We Britishers are certainly an odd compound, and our inconsistency is at times very marked. Now we depreciate our own powers and our resources and praise those of other people, at another time our boastfulness and self-consciousness is offensive. To-day we vaunt French horticulture as something *hors ligne*, to-morrow we boast that we are the foremost horticulturists of the world. The truth, of course, lies between the two extremes. In some things the French excel, in others we are superior. The results of the Versailles show, with which the Botanical and Horticultural Congress has just terminated, has shown very markedly some points in which we excel and English horticulturists owe their thanks to Mr. WILLS, Messrs. VEITCH, and others, who have so signally displayed the powers of English horticulture. We trust that one result of this may be to induce Englishmen to discount somewhat heavily the statements they read as to the superiority of Continental horticulture, and to remember that that superiority resides only in certain details not very numerous nor very important.

—— VEGETABLE PRODUCTS OF MOGADOR.—In a report on the commerce of Mogador for the past year, referring to the drought that prevailed, the Consul says that cattle in the interior were starving for the want of grass, but that in the provinces of Halia and Sheidma the drought was less felt, in consequence of their being thickly wooded, and the forests abounding in Argan trees (Argania sideroxylon), which afford food both for the natives and their flocks in times of scarcity. This tree, we are told, grows only in the provinces above mentioned and in that of Soos. From the nut or seed the peasants extract an oil which is useful both for illuminating and cooking purposes. When the nuts ripen and fall from the trees they are collected by the natives; the goats also greedily devour them, swallowing the entire fruit, but digesting only the fleshy, pulpy portion, and ejecting the hard nut. These nuts are gathered together, as they still contain a quantity of oil, which is further obtained by pressure. For their own private use the peasants rarely make a large quantity of oil at a time, but crack open a few handfuls of nuts with a stone, and after toasting the kernels in an earthenware dish, grind them into flour. The oil is extracted by adding small quantities of water to the flour, which is stirred in a bowl. As the oil is being formed by this process the flour hardens into a cake, which is finally squeezed, leaving the oil perfectly clear and fit for use. The cake, as well as the dry rind of the nut, forms an excellent cattle-food, the rind being generally given with the cake. These two products constitute the principal and most nutritious cattle food during the year, and is invaluable to the natives in time of drought, the Argan tree being very hardy, and a dry year having but little effect upon it. The hard, bony husk, after the extraction of the seed or kernel, is utilised by the peasants as fuel. The best charcoal is made from the wood of the Argan, and the dry timber is excellent firewood. The leaves form an excellent food for goats, which browse upon them in the Argan forests, climbing amongst the irregular branches of the trees, plucking and nibbling both nuts and leaves. Regarding other products of Morocco, it seems that the dry summer and absence of the ordinary north-east winds were very favourable to the production of gum-sandarac (Callitris quadrivalvis), and large quantities were brought into the market. This gum is collected chiefly in the hilly districts of the province of Halia. To obtain the gum the natives chip the trunk and branches of the trees when summer sets in, and if the year is favourable the gum oozes not only from the wounds but from all parts of the trees. Gum-euphorbium and gum-arabic are both produced in quantities in Morocco, the latter is known as brown Morocco gum. The white gum which was formerly brought from Soudon now no longer exists in the market, owing, it is said, to the expense of transit rendering the price too high for exportation.

—— "THE FOX AND THE GRAPES."—The following strange circumstance has recently come to our knowledge, says the *Sporting Gazette*, which perhaps will in some measure account for blank days and the unlooked-for disappearance of foxes. It appears that Mr. HARRIS has bought the Steventon Manor at Ash, and is there making extensive alterations, amongst them building a new mansion. In the course of the work there was necessity to clean out a dead well adjoining some magnificent ruins of very ancient date, and in so doing the workmen came on the skulls and bones of about a hundred foxes, which, no doubt, had been knocked on the head by the keeper and there deposited, as the least likely place for them to ever again come to light, for it is little likely he would ever expect such a place to be disturbed. Mr. HARRIS

had the bones removed to his Vine borders, and so fertilising an agent did they prove that he carried off all the prizes for Grapes at the Basingstoke show; and those who have seen the produce of his Vines declare it to be truly magnificent. This is a fresh rendering of the old fable of "The Fox and the Grapes."

—— Coreopsis nudata.—One of the greatest surprises we have seen in the plant way lately is a plant named as above, and to be seen in the pond for hardy aquatics at Kew, opposite the new physiological laboratory. We should probably have passed the plant over as a leafless Rush of no beauty and little interest, had not the eye lighted on a bluish flower-head, rather pale in colour and smaller in size than that of a Chicory. The plant is a native of the Southern States of America and bears few opposite linear subulate leaves, hardly distinguishable from the stem in appearance. The flowers are just those of a Coreopsis, but of a bright rosy-purple colour. We have reason to believe the colour varies with the age of the plant, for when we first saw the plant the flowers appeared to be bluish, while those that we saw a few days later were pale rosy-purple. Torrey and Gray, *Fl. N. Amer.*, ii., 348, describe the flowers as rose-red. We understand the plant is shortly to be illustrated in the *Botanical Magazine*.

—— Grasses for Queensland.—The Colonial Botanist for the colony, Mr. F. M. Bailey, of Brisbane, has issued a circular asking the help of British botanists in furnishing small samples of British grass seeds likely to be useful for pasturage in Queensland. The native grasses grow after the summer rains, but in winter and spring little growth takes place, and the animals suffer in consequence. Some of the introduced grasses, such as Bromus unioloides and Cynodon dactylon, do well. Grasses of creeping habit which are not likely to be injured by the trampling of cattle are desirable. Frosts are not severe.

—— The Crofters of Scotland.—Dr. Macdonald has republished his letters to the *Echo* on the condition of the Highland Crofters of Scotland. In earnest language he pleads for a more considerate treatment on the part of the great landlords, greater security of tenure, compensation for improvements. He is enthusiastic in his admiration of the great work of reclamation carried on by the Duke of Sutherland.

—— Grape Cultivation in India.—We learn that, under the auspices of the superintendent of the Government model farm at Salara, Sind, the growth of the Vine promises to become an industry of great importance. It is reported that in the garden attached to the farm several varieties of English Vines are growing and fruiting freely, producing fruit much superior in quality to that obtained from any of the native varieties. The Black Hamburgh Grape is said to be of excellent flavour, but not to colour well. With a view of improving the colour a liberal supply of charcoal has been dug into the soil, but sufficient time has not elapsed to show the result. The Muscat varieties do very well, and it is considered that there will be no difficulty in starting a trade in raisins. From last year's experience in drying Muscat Grapes, raisins of excellent quality were procured.

—— Acorns.—If the present year cannot be classed as fruitful in the production of edible fruits, at least it presents some marked features in relation to hardy or wild fruits, as not only is the Horse-Chestnut—to which a previous reference has been made—singularly productive this year, but the Oak is producing one of the heaviest crops of Acorns that has burdened our national tree for many years. Probably to this presently will have to be added the Holly; but there is time enough to remark upon the fruitful-



Fig. 51.—Valentines: the long pond, and bower walk. (see p. 272)

ness of that hardy shrub when the berries are red for Christmas. If the hogs of the forest could but realise the treat in store for them next November, no doubt they would "lick their veritable chops" in pleasing anticipation. It is therefore some satisfaction to us to know that if the produce of the Horse-Chestnut, the Holly, the Hawthorn, and the Beech render little service to man in the production of food, the Acorn is, as diet for pigs, a really valuable product, and one that can hardly fail to have considerable influence in the creation of bacon and pork for the consumption of the human family. With all this singular abundance found in the fruits of our wild trees, how are we to account for the comparative lack of produce in our garden trees? Do the frosts that are so destructive to the one leave the other uninjured? and, if they do, does this immunity arise from the greater comparative hardiness of the bloom-

buds of the one as compared with the other? Or does the wild tree flower so much later, and thus escape the injuries other trees sustain? No doubt much is to be said from the latter reason; still we have had seasons when the bloom on the trees have been much injured—that of the Horse-Chestnut and the Holly, for example—and the former blooms very early. But such unusual produce must have other causes, as the germs of fruitfulness are laid in the preceding season; therefore, in relation to the Oak, we must look for the reason of its present large produce back to that time, and shall doubtless find that it was a summer peculiarly favourable for the production of fruit-buds. Why the same good-fortune should not have attended the Apple and the Pear, it would be hard to say, if, as some writers assert, the present lack of these fruits is due to the bad ripening qualities of last year. Most probably, however, the severe spring frosts did most of the mischief.

—— MESSRS. ROLLISSON.—A meeting of the creditors of Messrs. WM. ROLLISSON & SONS, of Tooting, was held on the 27th, at 8, Old Jewry, E.C., when a trustee was appointed. The meeting was largely attended, and at the close the chairman remarked that much sympathy had been evinced by the creditors present for Messrs. ROLLISSON, whose business is still being carried on; and it is confidently hoped that an arrangement may be arrived at, whereby the uninterrupted continuance of the firm, which has now existed for nearly one hundred years, will be assured.

—— THE NEW ROCKERY AT KEW.—This, which we have frequently commended as one of the best things done of late at Kew in the hardy department, is worth directing attention to at present, from the remarkable effect produced by the new Eryngiums, such as E. serra, E. pandanifolium, and others figured in the *Gardeners' Chronicle*, 1876, vol. v., p. 76, and which produce a singularly striking effect.

—— HYDE PARK AND KENSINGTON GARDENS.—We gladly give insertion to the following letter:—

"We must look to the public Press for zealous and really effective advocacy. It is useless now to reflect, however justly, on Mr. AYRTON'S escapades. Another reigns in his stead, and he grossly neglects his duties if he fails to adopt your suggestions by providing the needful remedy.

"You have denounced the present state of things in stronger terms than I applied, but I am bound to say not a bit too strongly, according to the facts open even to men of imperfect vision. To me the trees seem to be left to take care of themselves, and so great a *mêlée* is the consequence that the weaker and smaller must give way to the stronger and bigger specimens. I have seen trees which had been dead for years allowed to remain unremoved for months afterwards. Such instances, never rare, exist at the present hour. In other cases bare and deformed trunks offend the eye. A revival of life has long been impossible, and the useless effort is apparent in a few leaves which here and there are struggling in vain to conceal this unsightly nakedness.

"It is delightful to witness the enjoyment which our parks confer on every class, from the Prince to the meanest of the Queen's loyal subjects; and I know of no duty that ought to claim in a greater degree the attention of the First Commissioner of Works than the study of how he can best improve and adorn them. As you suggest, many young plantations might and ought to be laid out, which would have a pleasing effect. The growth of the young trees would be equally interesting and improving to the public. Depend upon it their condition would be carefully watched, and their growth suggest investigations both profitable and refreshing.

"And now I conclude by asking you a practical question. Would any landowner of ordinary knowledge and intelligence, having a park with many specimens of ornamental trees, permit the injury, waste, and disorder characteristic of the present condition of Hyde Park and Kensington Gardens? He would naturally seek a change of forester; and although the First Commissioner runs no risk of ejectment, he is not the less accountable to the public, for by permitting a continuance of the existing state of things he exposes himself to the charge of culpable neglect of duty. *J. Blaikie, Eastbourne Terrace, Hyde Park, Aug. 28.*"

—— CLEMATIS PITCHERI.—A short time since there appeared in the *Revue Horticole* a figure of this plant, which is represented as having small but very pretty bright red flowers. An establishment was also mentioned at which plants were to be obtained. Some plants were procured as soon as practicable in the ordinary way of trade, by Mr. GEORGE JACKMAN, of Woking, and we now learn from Mr. JACKMAN (who is desirous others should be put on their guard) that some of his plants which have blossomed have produced only poor, puny blue flowers. They are at present absolutely worthless from a gardening point of view, and buyers in search of a scarlet C. Pitcheri will do well to await further experience before making the investment.

—— THE MACARTNEY ROSE. — This beautiful Rose is now in flower against one of the walls at Kew. We are happy to find this plant not so scarce as was once supposed.

—— SALISBURIA ADIANTIFOLIA.—We lately saw the fine example of Maidenhair tree (Salisburia adiantifolia) at Wimbledon House, than which a more beautiful object for a lawn or any conspicuous place in pleasure-grounds it would be difficult to imagine. In the rage that has now for many years existed for planting coniferous trees, it seems strange that this most distinct and elegant subject should have been so sparingly used, even in situations where there is every likelihood of its thriving. How much more suitable it would be for planting in small places in close proximity to the dwelling than such trees as Sequoia gigantea (Wellingtonia) often placed so near the abode that the first reflection which occurs to any one looking upon them and at all acquainted with tree life is that, just as they begin to exhibit their true character, either they or the building will have to be moved for want of room.

—— EUCALYPTUS GLOBULUS IN THE CENTRAL PROVINCES OF INDIA.—From the last-issued report of the Conservator of Forests of the Central Provinces of India, it seems that the Eucalyptus globulus will not grow in Nagpur except at an enormous cost, and under favourable conditions of soil rarely to be met with. At Pachmarhi, Seoni, and Saugor, trees have been raised, and are rapidly increasing in height, but, owing to the peculiar tendency of the tree in these provinces to clear its lower branches with undue rapidity, they are deficient in girth, and the trees have consequently to be propped. Unless this can be avoided there is no chance of their succeeding on a large scale. Some further experiments are, however, being tried with this and several other species of Eucalyptus, which should lead to definite conclusions as to whether or not any of the varieties are adapted to these Provinces.

—— PRIZE SCHEDULE ADVERTISEMENTS.—Struggling horticultural societies, anxious to aid their indifferent finance, will find a valuable help in the plan, adopted here and there with success, of incorporating local advertisements in their prize schedules, as the income derived from them will usually be found not only sufficient to pay all the costs of printing, but will leave a small surplus. The arrangement is entirely legitimate, and quite fair to all parties. The local tradesman is ready to utilise the opportunity offered by the circulation in his neighbourhood of several hundreds of schedules to advertise his goods, and the local treasurer finds the various payments made for this privilege a useful addition to the society's funds. Further than this it assists to promote a feeling of special interest on the part of tradesmen towards the society, its purposes and objects are made more widely known, and, as is now the case in many places, through the interest thus created tradesmen will suspend business, and aid to make the flower show the local holiday of the year. It is both wise and fair to afford local trades the first offer of these advertising privileges.

—— JUDGES' FEES, &c.—Amongst the various subjects now and then recommended to the consideration of the officials of horticultural societies, that of the payment of fees to judges seldom finds a place. It is so generally understood that the experienced judge whose services are required as censor at floral exhibitions fairly earns his proper fee that few are found to dispute the correctness of the payment. Whilst heartily recognising this, however, there are some committees that do not so fully recognise the necessity for making the payment of this fee an immediate one. Judges often have to travel long distances and to expend considerable sums in expenses, and yet have to wait for weeks and even months before their fees are paid them. The same remark applies to persons whose duties as superintendents or managers are often more onerous and expenses larger than are those of the judges. In such matters committees should be prompt: the payments must be made at some time, and should be made within a week after the show. It is not fair to those whose assistance they sought to keep them their creditors for several weeks.

—— IXORA SPLENDENS, raised by Messrs. E. COLE & SONS, and figured in this month's *Florist and Pomologist*, is one of the finest of all the Ixoras yet raised. It is the result of repeated crosses. The leaves are opposite, elliptic-obtuse, rather small, 3½ inches long and 1½ inch wide. The flowers are very abundant, terminating the shoots, and appearing in all the upper axils, the cymes being full-sized and very showy. The flowers are of a bright glowing coppery scarlet, much deeper than in any of the ordinary large-flowered sorts, intensely brilliant; they have a slender tube, crimson-scarlet, 1½ inch long, and a limb, 1½ inch wide of four ovate segments. Altogether it is a very distinct and valuable acquisition.

—— ROYAL TREE PLANTING.—On Monday last preparations were made in the centre of a circle of Yew, Cedar of Lebanon, Walnut, and Hawthorns of stately proportions, by Mr. M'KELVIE, gardener at Broxmouth, and Mr. KNIGHT, gardener at Floors, for the planting of a tree by the QUEEN, in commemoration of her visit to Broxmouth Park. Messrs. THOMAS METHVEN & SON, Edinburgh, had the pleasure of supplying a specimen of Cedrus Deodara for the occasion, and HER MAJESTY deftly accomplished the "setting" of it, filling in the earth about the root with a lady's spade specially made for her use, and expressing to the Duke and Duchess her hope that the tree would take root and grow to maturity.

—— AN EVIL NEEDING TO BE REMEDIED IN CONNECTION WITH FLOWER SHOWS.—Those who are in the habit of attending flower shows in the capacity of judges have frequent occasion to complain of the late hour at which the exhibits are staged for their inspection. Almost every schedule of prizes fixes an hour at which the subjects competing shall be staged ready for the judges, but it is often an hour or two later before staging is completed. The consequence is that subscribers are indignant at being excluded from the tents after the time named for admission to them, because the judges have not finished their work; and sometimes it happens awards have to be made in the midst of the crowd, with the exhibitors immediately concerned at the elbows of the judges. The clerical work also gets considerably retarded, it is quite late in the afternoon before the prize cards are affixed to the winning exhibits; and reporters, to whom time is a matter of great moment, are precluded from getting a correct prize-list till late in the day. If secretaries are remonstrated with, the invariable reply is that exhibitors cannot be got to bring their plants early enough to the place of exhibition. The obvious reply is, that if rules are made rules should be adhered to; that it is not a matter in which the convenience of exhibitors can be alone studied; and that if committees would courageously stand by their rules the exhibitors would soon do what is required of them. One great evil is the appointment as stewards of members of committees who are also exhibitors. The stewards appointed to superintend the arrangements of the tents should be responsible persons, who can give their entire attention to their work.

—— GUARANTEE FUND FOR HORTICULTURAL EXHIBITIONS.—They do these things with some spirit in the West of England. In connection with the recent exhibition of the Shepton Mallet and East Somerset Horticultural Society thirty-one supporters of the Society very generously guaranteed the sum of £5 each in the event of a deficiency in the funds of the Society in the present year, in addition to their usual annual subscriptions. This is as it should be. There is much reason to fear the guarantee fund will have to be drawn upon, for early in the afternoon a drenching shower fell at a very critical time—just when the country people were flocking to the show in great numbers, and the gate money comes from the surrounding villages, and from excursionists from Bath, Wells, &c. It is pleasant to think that exhibitors need not fear any curtailment of their prize money, for many go from a distance to Shepton Mallet. Somehow or other the town's-

people appear in this case to pull well together on the occasion of the annual flower show; there is a suspension of all but necessary business; the houses and streets are gaily decorated and festooned, and the sides of the main street lined with large Spruce Firs; while archways span the street here and there. The effective decoration of the streets is no doubt found to answer well, as it is an additional attraction to country people, who are great sightseers. The show is the *fête* day of the year, and it is something that on such an occasion horticulture plays so important a part in the annual celebration.

—— Cattleya Dowiana.—This grand Cattleya is in fine bloom just now at Mr. Bull's nursery, Chelsea, and should be seen by those interested.

—— Dahlia Perfection.—At the exhibition of the Trowbridge Horticultural Society, on August 21, Mr. Thomas Hobbs, Bristol, exhibited a bloom of Dahlia Perfection in a stand of twenty-four flowers, and it is worthy of record that this variety was raised by the late Mr. John Keynes, and first named Eugénie, and afterwards Orange Perfection, but was finally sent out in the spring of 1856 as Perfection. It was always remarkable for the beautiful arrangement of the fine cupped petals, and its exquisite shape suggested its name. It is perhaps the only Dahlia in cultivation at that time that has lasted to this day; and when caught in fine condition it is a telling show flower. In Mr. Keynes' stand of twelve fancy varieties at the same show, he had three blooms of a new fancy Gaiety, but differing so widely in consequence of its sportive tendencies, that probably only the cultivator would have recognised them as from the same variety.

Foreign Correspondence.

Natal.—Durban, the port of Natal, is sheltered from the sea by considerably high land, which terminates in a bluff, around which is the entrance to the fine but rather shallow bay. On nearing the land one is at once struck with the exceeding fertility of Natal, displayed in the green-clad hills and flats down to the washing of the waves. The vegetation in the vicinity of Durban and near to the coast is not very robust or large in growth, but more of a fruticose and suffruticose character, which where it does grow is impenetrable; grass is also plentiful on the flats where the bush is not so thick; numerous Hibisci, Acacias, Aurantiaceæ, Mimosas, and Leguminous shrubs are found intermixed with the generally insignificant scrub; bulbs of all descriptions and a few terrestrial Orchids grace the plains with their beautiful though often miniature flowers, after a good rain. Durban itself is rather a dull place, and as a main port possesses few attractions for the visitor; it is laid out in squares upon the shores of the bay, and is connected with the "Point" (a place where the shipping comes up) by a railway. On account of the land being of a very sandy nature near to the coast, the roads are almost impassable, and therefore the streets generally have a dusty untidy appearance. A slight attempt at macadamizing has been affected in the main street, and no doubt at some future time the rest of the town will be treated in the same way.

The Botanical Gardens of Durban are merely nominal gardens, for, either through neglect or want of sufficient funds, they are barely distinguishable from the bush outside, which certainly does possess some beauty in the Bignonias, Cassias, and Poincianas, flowering on all sides. They are very small, and situated on the slopes of the Berea hills about 1 mile from Durban; they are laid out in terraces. Strelitzia regia and angustifolia, Brugmansia, Bougainvillea glabra (a perfect picture, in full bloom), Cæsalpinias, Cardamoms (a beautiful display of bloom), Mangifera indica—the Mango, which grows and fruits in Natal to perfection; Ficus nervosa, splendid large foliage trees; Euphorbia splendens, Loquats to perfection, a few Araucarias, Pandanus, and Cycads, with here and there indigenous shrubs and trees, occupy nearly the whole of the gardens. The paths are ridiculous, and as a garden it possesses nothing of beauty. A small greenhouse near to the entrance contains a few straggling things, Saccolabium, Bolbophyllum, Bletia Shepherdii, Oncidium, Begonia, Hibiscus Cooperi, Sanseviera, Melinilla magnifica, Maranta Marshalli, Tradescantia discolor, a few Ferns, Nephrolepis and Peris, Stenochlæna scandens, and Platycerium grande, several varieties of Caladium, and a small collection of Palms in pots.

From the coast inland the land varies from a sandy to a red and black loam, and the degrees of fertility vary with its composition: the hill-sides, valleys, and alluvial plains are the chosen spots for cultivation. Wheat is produced of excellent quality; in some parts Indian Corn, Pumpkins, Melons, sweet Potatos and Yams. The common Potato is very small and not of the same flavour as at home. Cabbages and Cauliflowers are here produced equal to any I have ever seen, some even weighing 13 lb., and all good heart; one Cabbage plant I measured in a friend's garden was furnished with a stout stalk, elevating the fine head over 6 feet in height. Tomatos and the Cape Gooseberry grow wild on all sides; Oranges, Lemons, Peaches, Papaw, Bananas, Granadillas, flourish luxuriantly. Several sugar plantations have been formed on the rich alluvial flats towards the Umbas and Umgeni rivers; they, I believe, give a good return, and bid fair to turn Natal into a sugar producing country. The greatest want and difficulty felt by both sugar and coffee planters is the scarcity and uncertainty of labour. To meet this want coolies have been introduced from India by the Government, as the Kafir, although willing to work, will not as a rule be bound down for any length of time, and generally after a few months' work he earns sufficient to supply his wants for a time and returns to his native and natural habits of living, so that Kafir labour cannot be depended upon by planters, &c. Coffee does not flourish, owing, I believe, to the want of a proper knowledge of the plant and its requirements.

Natal as a Field for Emigration.

As a very considerable amount of attention is now directed to Natal and South African emigration, I should like to give a few hints as to the existing condition of Natal as an agricultural and horticultural state. The first settlers in this part of South Africa were evidently earnest and devoted worshippers of Mammon, who, after failing to procure sufficient labour out of the Kafir, besought the Government to import coolies from India, to work the farms, plantations, &c., and a higher developed class of labourers from St Helena, to perform the duties of household servants. Now these people can exist upon nearly anything, and therefore are content with merely nominal wages, comparatively speaking. The aim of the original planters and settlers was to reduce the value of labour, and as the Kafir would not work, and the emigrant from the British Isles would require too much pay, they sought a substitute in the coolie and St. Helena native, which, however, to a certain extent has failed. Numerous plantations were formed and many of them failed; Cotton and Coffee were introduced, and grown with amazing zeal at first, then failed. Farms and gardens sprang up, crops were sown, all sorts of vegetables and cereals were tried; some prospered and others degenerated in quantity and quality, so that at the present time one can safely say, from the external observations of a stranger, that agriculture and horticulture are certainly on the decrease in Natal. The country is rich and fertile, possessing innumerable advantages, which only want studying and utilising, so that the present stagnation and hitherto slow progress of these rural pursuits is not attributable to the country, but to the managers of it. In this country there ought to be swarms of happy and prosperous British homesteads, dotted over its fertile bosom, instead of which there are here and there a few struggling, drawling farms and plantations. This country ought to be a place where the poorly paid and ill-clad labourer of the mother-country could find remunerative employment, but instead it is a crying shame to send emigrants to this country as it is at present, and the fact that I have already seen recently arrived emigrants suffering from poverty, looking for employment in vain, and others working for less than they could obtain at home, compels me to ask you kindly to insert this in your paper.

To convey to your readers an idea as to what will grow in the vicinity of Durban, I will relate what I saw flourishing in a small garden on the Berea, owned by a gentleman of the legal profession, Mr. W. Shuter, Sen. His garden is situate on an easy slope, with plenty of large timber trees affording shelter from occasional winds, &c., the subsoil is red sandy loam, of a considerable depth and consistency. Oranges, Lemons, Citrons, Limes, Sweet Lemons, Shaddocks, Bananas, Plantains, Loquats, English Apples (not very good), Rose Apples, Custard Apples, Soursops, Sweetsops, Peaches, Apricots, Grapes, Amertingulas (a native fruit), Papaws, Mulberries, Raspberries, Quinces, Brazilian Cherries, Mangos, Guavas, Granadillas, Mangosteens, Pomegranates, Beans, Peas, Onions (not large), Potatos, Cabbage, Sweet Potatos, Yams, Lettuce, Radish, Cress, Spinach, Shallots, Thyme, Parsley, Basil, Marjoram, Pumpkins, Cucumbers, Indian Corn, Chowchow, Cassava, Carrots, Turnips, Squashes, and Tomatos. All these things I saw myself, flourishing in a more or less good condition. Now if two private individuals, without experience or great pecuniary assistance, can cultivate all these things on their small piece of land (10 acres) and then leave sufficient room to feed two horses, what could numerous small struggling agricultural capitalists in England do if they were patronised and assisted by the Colonial Government? Be it, however, remembered that, apart from these industrious and persevering individuals, I very often hear the remark that nothing good will grow in Natal, except at a great expense. The small paradise of Mr. Shuter's costs a mere nothing, and on the other hand supplies them with a continually well-spread table, and an incidental return of an acceptable sum every week. And what can be more delightful than to see and have in possession the fruits of India, England, and America, growing side by side, and intermixed with healthy looking Tea plants from China, Coffee from Arabia, Cotton from the Pacific Isles, all embraced in one view from your own threshold. *Christopher Mudd, Natal.*

Apiary.

Our Honey Harvest.—Compared with last year, we have already had an abundant honey harvest in the North of England. The swarming in favourable and sheltered inland districts, such as valleys, commenced about the latter part of the month of May. In many instances we have had good virgin swarms, and we have seen straw skeps taken from first swarms containing 30 lb. of honey. Somehow we have secured very few good supers; the exceptions are hives which gathered good supplies about the middle of July from the Lime trees. By this time most of the white Clover had gone out of blossom.

Our observations again point to the fact that large hives are useless, for we have one notable hive which has stood on the stand four seasons without swarming. Again, we have now two Woodbury bar-frame hives which have stood in their present position for two years, and neither has yielded an ounce of honey or swarms; but in the same apiary we have one of Robinson's bar-frame hives, which is not quite twelve inches square internal measurement—this has sent out eight swarms in the two years, with a total yield also of nearly 300 lb. of honey, as a contrast to the two Woodburys, which are worthless in our climate.

By employing the cheap tin honey extractor, which was figured and described last autumn (p. 204, vol. viii.), we have secured a very large honey harvest without destroying either a single colony or injuring a single comb. Our plan is simply this, which we should be grateful to teach every gardener in the kingdom: By saving the combs for the bees again to refill we save an immense quantity of honey, for according to our most competent authorities it takes on an average 20 lb. of honey to fill the hive with comb, and until the bees have the hive partly filled with comb they store very little honey, for bees are not so thrifty as some of our forefathers in the days of Dr. Watts would have us suppose. Now by taking care of the comb, which can easily be accomplished if bar-frame hives are employed in the apiary, the bars being removed from the hive, and the caps covering the cells carefully cut off with a sharp table-knife, a few swings in the extractor take out all the honey, then turn the comb round to the other side, and secure the honey which by a few additional turns running to the base of the machine may be taken out in any receptacle in a perfectly pure state ready filtered for the market. It is our experience, when cottagers remove all the honey in the autumn from all or any of the hives they wish to take, by in some instances having a large stock they find it difficult to effect a quick sale, and so are compelled to sell at a lower price, but when it is removed from the hives gradually in a pure state there is no difficulty to secure customers; we generally sell all our stock at 1*s.* 6*d.* per pound. *R.*

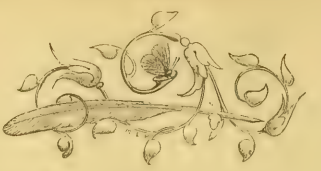
SARRACENIA DRUMMONDII ALBA.

IT would be difficult to instance a better evidence of the improved taste in gardening matters that has gradually during the last quarter of a century been taking place than the appreciation of form in plants, independent of the mere colour of their flowers, than which little else used to be thought much of in the case of by far the greater number of those who took an interest in cultivated plants, particularly such as are grown under glass. Even Ferns, with their exquisite beauty, had so few admirers that the idea of devoting a structure wholly to their cultivation was looked upon and spoken of as an innovation, only suitable for adoption by such members of the Society of Friends as indulged in gardening, and who in the matter of colour in the plants they grew, as in everything else, run counter to the rest of the world. But in the change that has thus taken place it is quite a question whether fashion in this, as in many other things connected with gardening, is not running rampant in the opposite extreme, and getting rather too green; yet we cannot charge the plant under consideration with contributing to this. Independently of its flowers, which are of a beautiful deep reddish purple colour, and like those of its congeners, the other species of Side-saddle flower, are totally distinct from every other vegetable form in bloom as in leaf, the latter of which when the plant is well grown being equal in colour to the flowers borne by the majority of plants.

One thing that contributed to keep the different orms of S. Drummondii in the shade, and owing to which many who began to cultivate them gave them up in disgust, was that their requirements as to heat were so little understood—an impression prevailing that they must be kept hot, especially during the growing season, and be subjected also to a steaming moist atmosphere, both of which conditions are alike fatal to their well-being. Both this and the red variety of S. Drummondii do not want any more heat or moisture, either at the root or n the atmosphere, than necessary to grow the other species up to the mark they are capable of; 60° to 65°, according to the weather, in the night during spring and summer, with from 70° to 75° or 80° in the day; 50° by night through the winter, and 5° higher in the day, will answer. To give the full complement of colour, they should stand, particularly whilst making their growth, with the tops of their pitcher-like leaves within a few inches of the roof glass on the south side of a light house, with just a slight thin shade over them when the sun is powerful, and a moderate supply of air every mild day. Give water to the roots freely every day during the growing season, and two or three times a week in winter; but do not stand the pots in pans, as it will often cause the roots to rot; neither do I find it advantageous to syringe overhead. It is most important that they should be re-potted, and have the whole of the soil renewed every year: it should consist of the best fibrous Orchid peat with the earthy matter shook out, to this should be added from a third to one-half of chopped sphagnum and a liberal sprinkling of pot-sherds, with some sand. Pot sufficiently early before any root movement takes place, which latter begins some weeks before top-growth is at all apparent. This is an essential point, for if the roots have begun to move in the least the disturbance will most effectually stop the varieties of S. Drummondii from pitchering, especially the plant figured (fig. 52, p. 281), which is the least easy to manage well. The potting of these should be carried out at the opposite time in the year to the varieties of S. flava, S. purpurea, S. variolaris, &c.—that is about August, before the autumn growth which the forms of S. Drummondii make. If potted at this season the plants will, when they have attained enough strength, pitcher again freely in the spring; but if potting is delayed until, say February—the usual time for moving the other kinds—it will stop the formation of pitchers.

As to propagation, several fine varieties have been raised in this country by crossing, and they may be increased by division of their creeping rhizome-like stems. This should be effected early in the spring before growth commences, but it is a bad plan to divide these plants until they acquire their full strength, for they take some years, even under the best treatment, to grow from a small trade plant up to full size. The specimen represented, before it left my hands, made pitchers 3 feet 6 inches long, proportionately stout, and beautifully coloured.

They are very subject to black thrips, and also brown scale; fumigate for the former and sponge for the scale until both are completely destroyed. *T. Baines.*



Home Correspondence.

Flowering Hedges.—Good hedges may be made in almost any soil or situation with some preparation of the ground previous to and after planting. A hedge is the most suitable fence for an agricultural country, both as a fence and for the shelter it gives to the produce of the ground. There is a beauty and attractiveness in well-kept hedges that arrests the attention wherever seen; and to get up and keep them in proper order shows a considerable amount of taste, perseverance, and skill on the part of the cultivator, for they are liable to much damage and accident in the early stages of their growth. In travelling through the country by road or rail, the boundary of well-managed farms or estates may be nearly traced by the state of attention given to the hedges. Whenever they are seen in proper order a correspondingly high state of cultivation and management may be expected. Where they are used for shelter they are allowed to run up in a thin wedge-shape to any convenient height, but as a fence for cattle only, they are usually kept about 4 feet high. For the latter purpose Whitethorn and Beech are the most in use. In positions near a dwelling-house, or round a garden, we find a greater variety of plants in use, such as Holly, Yew, or any of the evergreens. In such positions flowering plants have been used, such as Berberis Darwinii, but these don't give much flower after the hedge is full grown: a good share of flower may be got till the hedge is full grown, but after that, when annual cutting must be done no more, or a very few flowers need be expected. It might be supposed that if cut just after the flowering was over that the plants would make just sufficient growth to feather all over and give a show of flowers the following spring, and in very favourable positions with healthy plants a few flowers may be got by this system, but with a line of plants all of them will not be in flower at the same time (this is a fortunate arrangement of Nature), and the earliest flowered plants will have nearly finished their growth before the later ones come into flower. Even a single plant will have partly made its growth before the flowering is finished, and this is the part where the most and best of the flowers are produced, so that in cutting such a hedge it would require to be cut in the midst of its beauty, or one year's flowers sacrificed for that of the following year. Either the earliest growth or the latest flowers must pass through the shears, and this same sacrifice must be made in cutting a single plant, but single plants can be dealt with differently from a continuous line of plants. Most of our forest trees and evergreen flowering shrubs commence and complete their growth in a few weeks, some of them in a few days. This was more noticeable this year than I ever observed before. Many of the Rhododendrons commenced and finished their growth during the few days they were in flower. No doubt if this growth is cut or broken before the wood is ripe, another or lateral growth will be made, but this is of no use for flowering. For those who want a flowering hedge, and have no objections to a long loose growth, a line of Roses on their own roots where the soil is suitable would probably be as useful and ornamental as any plant that could be used, and cutting could be done any time from October till April. A long line of flowering plants in a state of Nature may be very beautiful, but a flowering hedge is a doubtful ornament. *Peter Graham, Sussex.*

Tussac-grass.—One of your correspondents, referring to an account I gave of a visit to Stornaway Castle gardens, asks for information concerning the cultivation of Tussac-grass on the Lews. I only spent a few hours at Stornaway, and the opportunities I had of a general inspection of the interesting grounds attached to the castle were necessarily restricted, and I was not so fortunate as to find Mr. Smith, the head gardener, on first reaching the garden, or I should have gathered more information than the short time I had in his company enabled me to gain. I saw some fine masses of Tussac-grass growing between the castle and the harbour, opposite the town of Stornaway, where it has been grown very successfully for a number of years; but a much larger plantation exists about a mile to the east of Stornaway and on the shores of the bay. The ground under cultivation at this spot is about 8 acres in extent. Mr. Smith tells me that the Tussac-grass is of easy cultivation on the Lews, all that it requires is deep mossy land, and a position where it will receive an abundance of sea spray. It has not done well planted at a distance from the sea. It comes up abundantly from seed self-planted, but owing to the amount of weeds, which grow so luxuriantly, the young plants are generally destroyed in the cleaning. Mr. Smith considers it might be grown much more extensively in the Hebrides. It affords a large amount of green fodder during the winter, and cattle are fond of it at that season, but indifferent to it when the sweeter herbage of the hillsides can be obtained in summer. There seems so much bare boggy ground about the shores of the Hebrides that it is a pity when the cultivation of so valuable a fodder plant has been demonstrated that it has not been planted more extensively. If sea spray is so essential, surely the storm-tossed island of St. Kilda would be an excellent place for it, and on the boggy wastes of North Uist there is ample and suitable space for a spray-loving plant. *W. Ingram, Belvoir.*

Peaches and Nectarines Growing on the Same Branch.—Once as an experiment I rubbed off the fluffy substance from a few Peaches while in a young state, and when ripe they had the appearance of Nectarines. Perhaps some one has been playing a similar freak on your correspondent. *C. Powell, Green Lane Nurseries, Heaton Norris.* [That would not alter the size or the flavour. EDS.]

Plum Trees Dropping their Crop.—Early in the present year one of your correspondents mentioned a difficulty with regard to a luxuriant blossom and good setting of fruit on some of his Plum trees being followed by the fall of the entire crop. Just then I was experimenting on what appeared to be a precisely similar case, and the result seems so far successful that possibly it may be of some interest to him. The tree most affected was a large standard Plum, which regularly set a large crop which it as regularly failed to bring even one fruit of to maturity. In the spring of last year I gained a sort of clue by observing that as long as water was plentifully turned on through the hose all went well with the swelling of the fruit, but it dropped (though all appeared right on the surface of the ground) when the supply was discontinued. On looking in the autumn as to the state of the subsoil we found that at a depth of from 2 to 3 feet it was perfectly dry, almost powdering in the hand, and traversed in all directions by roots, mainly those of a large Abele, which stood at a short distance off. I had the Abele cut down, and the soil deeply trenched, so as to throw up the dry and impoverished earth with its contained roots (which otherwise would probably have shot again), and replaced it round the Plum tree as nearly as we could safely dig to it with rough decayed vegetable mould of various sorts, and burnt branches, &c. During the process the water was occasionally turned on for a few minutes at a time to secure a thorough moistening of the subsoil. The result has turned out fairly satisfactory for this season, and seems hopeful for the future. The tree as usual blossomed freely, and set a large crop, but of this it is now bringing a small quantity of remarkably fine fruit to maturity, and altogether it seems in a promising and healthy condition. The severe root-pruning, of course, had some effect, but I believe that the difference is mainly caused by the moisture being no longer abstracted just when wanted most, and from the state of the surface and distance of the Abele there was so little indication of the mischief going on below that possibly some amateur gardeners in similar difficulties to my own may be interested in what seems to be acting as a thorough remedy. *O.*

Duke of Buccleuch Grape.—Seeing that the *Gardeners' Chronicle* is not exclusively devoted to a record of "Amateur's" experiences and opinions, and that he has given copious notes on this Grape four times in six months with very much the same import, I do not think he has great reason to feel indignant or express astonishment that they should attract attention, and even extort criticism. He takes exception to my use of the word "principle" (I have no doubt it was intelligible to most readers), and asks what warrant I have to assume that he ever advised or recommended the Duke for family use, or as a livelihood to a gardener. Now, at p. 570, May 4, he says:—"I write to rescue the reputation of the Duke from many severe verdicts." Again, p. 699, June 1, he writes of "defending the Duke." These extracts, with others which could be produced, led me to assume that he considered this Grape as useful for general cultivation, and was giving his support to it as such. However, he explains that he never meant anything of the kind, and admits that he has "slowly" arrived at the conclusion that it has some merits, though he does not this time offer to specify them. He further adds that any other Vine in his three houses, with one notable exception, "is loaded with large and beautiful bunches;" and as the Duke has only given him seven in five years, I may be excused if I again allude to his growing it as a fancy variety. Nor do I think "Amateur" has improved his position by charging me with dishonest quotation. The word "excel," which he so ostenta-

tiously but rather discourteously avers I would not quote, must have been an afterthought, as it appears for the first time in his reply, the correct quotation being as I gave it, "equal to Black Hamburghs in size and plumpness." Now since it is on this point that his honest feelings are most grievously disturbed, let me give a specimen to show what difficulty a critic has, and what caution he requires in dealing with "Amateur's" notes. At p. 570, June 4, writing about the Duke, he says:—"He gave me four smallish bunches last year, this year he gives me only three." Again, at p. 827, June 29, he says:—"It gave me only two bunches last year but five this year," seven in all, no doubt, vary them as he may; but mark the discrepancy in the two statements, and this from "Amateur," who is anxious to appear so polished and faultless in his composition. Yet I hazard the hope that some little counsel to be more painstaking in his records may now meet with his approval. *Scotia.*

monious whole, such as one would expect to find in the conservatory of any well-managed garden, that would take the eye of the judge—or, to put it in a more logical manner, that would be legitimately entitled to the judges' award according to principle and according to certain terms stipulated for in the schedules published by horticultural societies? Mr. Baines has been a plant grower and an exhibitor, and he knows far better than I can tell him how much depends, and how far judges are influenced in their decisions, and how much the value of a collection of plants is enhanced by artistic (should I not rather say laboured?) arrangement, because the formal training of exhibition plants offers but little scope for carrying out artistic effect. I can follow Mr. Baines clearly throughout his remarks, but he has not defined, for obvious reasons, as explicitly as I would like, what he thinks of the introduction of huge specimens into collections for competition, except in so far as he

& Sons, of Liverpool, who gained second honours, made a very creditable effort to comply with the terms of the schedule; and their able manager, Mr. Sutherland, was defeated (and, as I think, fairly defeated) for want of variety of material to carry out his scheme with uniform effect. The background was really well done, with appropriate subjects very tastefully arranged, but the want of a few medium-sized plants about the centre of the collection rather marred the effect as a whole. The front rows, too, were rather overdone with flowering plants of equal height. Now, the addition of a few more medium-sized plants in the latter collection would have placed the judges in an awkward dilemma, because in the one case there was the merit of fine specimen plants to be ignored, or in the other the "principle" of effective arrangement, which, as I understand it, is the true spirit and meaning of any schedule I have read. Ought not the latter to take precedence of the former? If so, let us



Fig. 52.—Sarracenia drummondii var. alba. Largest pitchers, 3 feet 6 inches. (see p. 280.)

Effective Grouping of Plants.—Mr. Baines in his usual lucid style, points out many deficiencies in the present system of grouping, and enters into an elaborate exposition in detail of what he thinks should be the cardinal points in all such arrangements. It is sadly too true that there are people who can grow plants creditably and well, who have but a very clumsy idea of grouping them for effect, even in their own greenhouse or conservatory, but it would be well to bear in mind at the same time that there are other tastes to be studied at home besides that of the gardener. Leaving these matters, I believe there are many who will welcome Mr. Baines' remarks, because there would appear to be a diversity of opinion amongst horticulturists as to what should be the guiding principle on which exhibitors should act in the selection of a group of plants for public competition. Is it the actual or intrinsic value of each individual plant that should weigh with the judges? or is it (what one would suppose to be the case) a selection of clean-grown, healthy plants, effectively arranged and blended together so as to present a har-

thinks they are not adapted for giving the same effect that can be produced by using smaller but less valuable plants. If we take the collections exhibited at the last Whitsuntide show of the Manchester Horticultural Society we have capital material to draw an illustration from. It was manifest to any one who inspected the collections set up for competition that the several competitors who contested the prizes had but a very vague idea of any fixed principle to guide them in their choice of plants and arrangement. Without by any means wishing to draw invidious comparison, I may say that the 1st prize collection set up by Messrs. Cauldwell & Sons, of Knutsford, was a select assortment of exhibition plants such as any plant grower might feel proud to possess, but the arrangement was bald and ineffective—a consequence resulting entirely from an apparent desire to form the collection of specimen plants solely. It was a highly creditable exhibition of specimen plants, but to say that it was effective as a group, or that it was even possible to produce a striking effect with such materials, is simply out of the question. Messrs. Kerr

have the problem satisfactorily defined during the horticultural recess. *W. Hinds.* [In the case cited, No. 2 was spoilt by the monotonous dotting of small white-flowered plants; the background, as our correspondent says, was very well done. Eds.]

The Phylloxera.—In the winter of 1876 I purchased from a nursery six Black Hamburgh Vines for forcing in pots. Early in April both the foliage and fruit on three of them showed that something was wrong at the roots, and on shaking one out I found they were infested with the Phylloxera. I had them all except one thrown out to the rubbish-heap and charred, so as to get rid of the colony. One plant, however, I saved, of the worst attacked, and dosed it at three different times in the course of the summer with paraffin oil and water, cutting the four bunches of unhealthy Grapes off it on purpose to give it a chance of recovering if the oil killed the Phylloxera. In the course of the summer the Vine did not get any worse, and ripened its wood well near the surface of the pot. In the spring of 1878 I cut the Vine down to the well-

ripened wood, and it made a good healthy shoot. This year I have not fruited it, but I will do so next year, and see if the Vine has quite got rid of the pest. It was not shifted nor the ball of earth disturbed, and it must have made fresh roots and fibres in 1877 and 1878. It was lucky I did not get these Vines for planting out in the collection here, or the consequences might have been serious. I have not as yet detected the Phylloxera on any of the Vines grown here in the borders, but have been very chary of planting young Vines unless I know where they come from, since I got the affected ones. Of course paraffin oil and water is easily tried on pot Vines, and I believe is an effectual remedy for killing the Phylloxera at the roots, but in borders it would not be so easy to reach all the roots of the Vines with it. *William Tillery.*

—— During the summer of 1877 I discovered that the whole of the Vines here were attacked with Phylloxera at the root. Upon the advice of Mr. Dunn I adopted his "bag and baggage policy," taking every precaution to rid the place of the pest, hoping this last spring to make a clean start, for which purpose I purchased some strong planting canes, also obtained eyes from a clean healthy stock at a distance. I have, however, quite failed in making a fresh start, both in pots and borders. The enclosed specimen is a fair sample of the condition of the Vines. Something appears to attack the roots, and a very small white insect like the red-spider in a young state quite scorches every bit of young growth and foliage up. I have tried every possible kind of treatment, with the same result. A great many practical men have seen them, but are unable to give any opinion as to cause of the failure, as I cannot detect any Phylloxera upon them. I have never found any Phylloxera upon roots outside, but always most in the driest and warmest places. *George Fennell.*

Peaches and Nectarines.—Herewith I send you a few Peaches grown by Mr. Bland, gardener to J. G. Smith, Esq., Cranbourn Court, Windsor Forest. The trees he planted three years ago in October next; they have each averaged this season a crop of sixty fruit each, equal to the sample I have sent you. The varieties grown here, as given to me by Mr. Bland, are Princess of Wales, Bellegarde, Royal George, Alexandra Noblesse, Early Victoria. I don't remember to have seen young nursery trees which have done so well for a long time. In an adjoining house are two old trees of Elruge Nectarine which are, I am informed, verging on forty years of age, and are almost as robust as the above, and have each carried this season forty dozen fruit, of which I also send you a sample. *S. Johnson, Royal Nurseries, Ascot.* [A remarkably fine sample, and of excellent quality. Eds.]

Bedding Violas.—I trust the experience of these hardy bedding plants that has befallen Mr. Hinds at Otterspool this year is not general, and if I may be guided from experience here I should say that it is not so. This has been one of the best seasons for Violas blooming freely and continuously we have had for a long time, the periods of heat and drought having been few and short, whilst showers have been unusually plentiful. Many kinds have been singularly effective in masses and have made a robust and healthy growth. Mould, so common on the Pansy at this time of the year, is not to be seen; and looking to the recent heavy rains, which would suffice to keep all things fresh and growing for the next month or more, I do not think we shall have reason to complain except that the moisture may induce too much growth. This part of the kingdom is by no means remarkable for its excessive rainfall, and oftimes the soil is so parched and baked that plants are almost roasted. *A. D., Belfont.*

Chromatella Rose, &c.—Herewith I send flowers of the above Rose, together with a flower of the Cloth of Gold, both of which have been growing out-of-doors. These two Roses are considered by some of our leading nurserymen and Rose growers to be identical, but this I disclaim to be the case. I admit the fact (which is gained by experience) that it is as difficult to obtain the true Chromatella Rose, even at the place of its origin, as to find the proverbial needle in a bundle of hay. Why it should be so difficult to procure the true variety of this I am at a loss to understand, for we have imported Roses of every description, but have failed to get a very large percentage of this true. I can simply add that I consider this the finest Rose extant. *W. Johnstone, gr. to the Marchioness Camden.*

Shading.—I have no time to refer to back numbers of the *Gardeners' Chronicle* to see the various opinions given in this controversy, but I must not let the opinion of "J. H.," expressed in your last number, go by without saying that it is exactly the one formed by myself during my recent collecting tour in Colombia. There must be plenty of light, but it must first pass through some kind of shading to break the direct rays of the sun, and I fancy most collectors must have formed the same opinion. *Fred. Horsman.*

Pyrola rotundifolia.—Amongst the alpines now to be seen in flower at the nurseries of Messrs. J. Backhouse & Son, York, this very pretty little native evergreen plant is blooming very freely. There is fully a square yard of it, it is growing on the north side of a Birch hedge, in damp, peaty soil. The flowers are pure white, deliciously fragrant, borne in a loose spike from 6 to 12 inches high. In bouquet making it would be a good substitute for the Lily of the Valley at this season of the year. The leaves too are very pleasing, they are deep bright green, and, as the specific name implies, they are nearly round in form. It is a suitable plant for shady ledges on rockwork, in the bog garden, or under Rhododendron bushes, &c. *R. P., Holgate, August 24.*

The Fruit Crops.—I have been much interested in your reports of the fruit crops. Among Apples in particular there appears to be some few kinds which rarely fail to produce more or less fruit, others which are very shy. This latter is a serious drawback, because, however good the fruit may be when you get it, it is a debateable question whether the blanks do not outnumber the prizes. It seems to me the fruitful Apples may be counted on the fingers, and this, as Lord Dundreary would say—this is a thing "no fellah can understand." Nevertheless the fact remains, and I think every one should send you his experience—here is mine. In addition to the good names given by your correspondents, Lord Suffield, &c., allow me to say Frogmore Prolific and Ringer are two Applies always to the fore. Since they came into my possession I do not think I have ever known them to fail, and the age at which they commence bearing fruit is extraordinary, being two years only from the bud; they are literally loaded with fine fruit, and for cooking the quality is excellent. So much for my small mite of experience. The subject has a double interest for me—I give the information for the good of my fellows, and those who wish can buy the trees of any nurseryman, and if they cannot supply them I can! *Charles Noble, Bagshot.*

Streptocarpus floribundus.—So little has been seen of this plant since Mr. Green first introduced it to notice at South Kensington, that we might have concluded that it was amongst the list of the forgotten. I am glad to know that such is not the case, and if more of the readers of the *Gardeners' Chronicle* had just the duplicate of the pair of it I have here, they would be glad to know that a really valuable addition had been made to our comparatively hardy garden plants. When Mr. Green secured for it the recognition of a First-class Certificate he brought the plant to several meetings in succession, to show how constantly and freely it flowered, and such do I find to be its merits. My plants are from seed sown November 1 last; they commenced to bloom early in July, and are in full bloom now, and will be full of flower most probably for several weeks, yet when the plants are another year old the flowers will be larger and much more freely produced than now. I have found those ignorant of the plant to regard it as a Gloxinia: perhaps it could not better be described than as a hardy one, and scarcely less beautiful. *A. D.* [We should like to have a more detailed account of its hardiness. Eds.]

Royal Tree Planting.—In last Saturday's *Gardeners' Chronicle* I see an allusion to the Prince and Princess of Wales planting a tree in the Deanery grounds on the occasion of their late visit to Southampton. Your correspondent also goes on to state that "It is to be hoped that this tree will obtain a better fate than appears to have befallen some other royal memorial trees in Southampton." Now as the only royal memorial trees ever planted in Southampton were two Oaks (Quercus pedunculata), on the occasion of their Royal Highnesses' marriage, I think such an equivocal statement ought not to have been made, as the said trees have done well from the first, and are fine, healthy specimens, about 18 feet high. Having assisted at the planting and watched their growth ever since, I cannot imagine to what your correspondent refers. *W. H. Rogers, Red Lodge Nursery, Southampton.*

Thorns a Protection for Young Forest Trees.—Your quotation of Mr. Higford Burr's remarks, at p. 118, with reference to Thorns as a protection for young forest trees, indicates no doubt an excellent plan. In one of the parks here there are a number of young trees (which are now well established) protected by a simple Thorn bush—and an excellent protection it is, as it does away with the labour and expense of keeping in repair wood or iron guards, which all trees require to have if planted in parks, and besides the appearance is enough recommendation. We find the Thorns require a slight protection with wood or iron guards for a few years, until they get established, as if left unprotected the cattle will nibble the growths off very fast when in a young state, and in very few cases will the Thorns attain the desired height to form a thorough protection for the trees; therefore I should recommend, when planting the trees, that three Thorns (or quick) be planted round the base of each tree, and when the planting is completed, there should be a simple wood guard put round all, and allowed to remain for three or four years; the Thorns will then have grown enough to take care of themselves, as will the trees; the Thorns ought to be brushed regular once or twice every year. *Robert Greenfield, The Priory, Warwick.*

Fair or Unfair?—Our Continental cousins during June and July freely supplied their annual bulb catalogues to all classes at all likely to purchase bulbs. The writer of these lines was then directed to order from "A. X." our usual supply, the invoice of which is now to hand. For the last fortnight I have been daily receiving our countrymen's lists, but of course they are too late. I think the practice above alluded to is something analogous to the wholesale cattle dealer sending to solicit the butcher's private customers for orders. Of course there is sufficient room for grave dissatisfaction amongst our nurserymen, but how are they to avoid this, I think, unfair competition? They seem too far behind at the start, but how they are to publish their catalogues before they know the wholesale price, I am at a loss to understand. *Zamy.*

Tuberous Begonias as Bedding Plants.—Now that these have become established in public favour as conservatory decorative plants, possessing many charms as well from their graceful appearance as by their variety of colour, it cannot but be interesting to all lovers of these flowers to know how admirably adapted they are for summer and autumn bedding-out purposes. There are here at the present time planted out about 3000 of the various named kinds and seedlings from such well-known varieties as Emperor, Vesuvius, Excelsior, Dr. Masters, and Magenta Queen, in the greatest profusion of bloom, and notwithstanding the terrific thunderstorm of Saturday last, while Zonal Pelargoniums and many other bedding plants were dashed to pieces, these were quite uninjured, no blooms being broken off. In establishments where it is essential the flower-beds should look gay in August and September nothing can be more suitable than these Begonias, as they continue in full flower until cut down by frost. *S. B., Stanstead Park.* [They withstand heavy rains remarkably well. Eds.]

Vines, Lady Downe's, Rooted at Both Ends at Heckfield Place.—The house is span-roofed, and is 41 feet long and 25 wide; the Vines, 12 in number, have each two rods, and are trained up one side the house and down the other. They were planted in June, 1872, and the tops were rooted in February, 1877, by layering about 2 feet of each rod in a newly made border; as soon as the Vines started into growth they threw out frills of roots at every joint, and though there was no perceptible improvement last season, this year the improvement is most decided. It will be seen that, by layering each rod, each Vine has really three sets of roots. To fully test the experiment as to whether the action of the sap was reversed or not, I severed the Vine in the middle, previous to starting them this spring, and the top is growing and fruiting equally well as those that have not been severed—proof positive, I think, that double (treble) rooting must be beneficial. The canes are thickening in a marvellous manner. *W. W.*

The Villa Garden.

Carnations, Cloves, and Picotees.—I have no intention of composing a chapter on these flowers from the florist's point of view; nothing will be said about disbudding, shading, and dressing. This is not the place to touch on matters of this kind; rather I intend to say something commendatory of growing these beautiful scented flowers as border plants for cutting from and for decorative purposes, and that because they are attractive in colour, durable, and richly fragrant. The flaked and bizarre Carnations make excellent border flowers, provided they be of a vigorous constitution, and then they grow lustily without requiring a great deal of extra attention. Some of the stronger growing Picotees do well also in borders, and furnish fine flowers; as a matter of course, not such blooms as one could obtain from plants carefully grown in pots, and shaded from the sun to obtain that purity of the ground and regularity in the marking florists prize so much.

Carnations and Picotees seed so indifferently in this country that seedsmen have been driven to obtain supplies of seed from the Continent; and this

has been the means of introducing to English gardens a strain of flowers well adapted for border culture. Now we always lay down the principle that a Villa gardener with a limited space of garden ground, but with a big love for beautiful flowers, should grow in this contracted space the very best things he can; and we should be faithless to our teaching in the past if we did not add, grow them as well as possible. If he has the means to obtain a few good varieties of named Carnations, Cloves, and Picotees—being careful at the time that they are of good constitution—let him have these, and they will well repay any trouble he may expend over them. If he has failed with some of these, or if he prefers to take the risk of Continental seed, simply to enjoy the exciting pleasure of proving what the flowers will be when thus raised from seed (a most enjoyable kind of excitement too), let him sow a little seed in March, in a pan or box, in some light but good sandy soil; and when large enough prick out into a prepared bed, to grow into size before being put into the border. If a space of ground can be spared, the most enjoyable way of growing the seedlings is to have them in a bed, so that all the plants may come under the eye at once. There is this further advantage, that all the inferior flowers can be pulled out, and only the good ones left, and in the autumn following these can be placed in the flower-border for permanent service. Some of the seedlings will be self-flowers of good and striking hues of colour; some will be flaked, others edged, and many others so curiously and unusually marked that no classification can be attempted. But they are fresh, novel, attractive, and pleasing in their very eccentricity of marking; and it is not fair that they should be rejected as comely garden flowers because they cannot be put under the head of bizarres and flakes.

Our Villa gardener must not expect to get all double flowers from his batch of seedlings. He will have to reject a great many because they are single or because they are so uncouth as to be unfitted for cultivation. These Continental Carnations and Picotees are pretty good seeders, and autumnal batches of seedlings can be had by saving a little seed from a few of the best flowers. The seed grows so readily, and the seedlings can be grown on into size with so little trouble, that it is most desirable, from the pleasure it affords, to grow a few annually.

Then, by means of layering a few of the strongest shoots at the end of July or early in August, a few additional plants of any one variety can be had. Layering is not a difficult practice; it is soon mastered after an attempt or two. Let the would-be operator ask a gardener to show him the way, and he will be a master of the operation in a few attempts. There is a great deal of homely layering of a very successful character done up and down the country in cottage and other gardens. Layering is a more certain way of propagating a variety of a Carnation than by means of cuttings or pipings. This is rather haphazard work, and if a few succeed in rooting a good many will fail.

Cloves are delightful things for Villa Gardens. We have this season seen a beautiful white variety named Susan Arkey, which came from Thorpe Perrow Gardens, Bedale, Yorkshire. It is a perfect white Clove for a buttonhole, pure in colour, has finely-rounded petals, plenty of what the florists term substance, and is deliciously fragrant. It is a good strong grower also, as it should be, bred as it was in the bracing climate of Yorkshire. For a few years past we have been growing a robust rosy-salmon coloured Clove which it was said came from Russia. It is so strong and vigorous as to appear as if no clime could well be too inclement for it. Its serrated petals would be a defect in the estimation of some, but happily, in the case of others, an added attraction. The plants throw out plenty of strong shoots near the ground, and instead of troubling to layer them in August a few of the strongest are pulled off and dibbled into some sandy soil, which is pressed firmly about them, the plantation occupying a shady place. Rarely does one fail to root, and by spring they have grown into fine plants.

Other Cloves can be similarly treated, but we find from practice that some grit, such as the very finest siftings from gravel, greatly assists the process of root making.

Lastly, we would strongly recommend Villa gardeners, where practicable, to grow a few of the finer of the florists' varieties of Carnations and Picotees in pots. It is simply a matter of attention; but it is an excellent investment of attention, repaying forty, sixty, and one hundredfold. What is required is a cold frame in which to winter the young plants, suitable pots and soil, and doing of certain things in the proper manner and at the right time; and the natural forces which minister to and assist man, working in harmony with his own devotion, will crown his labours with a harvest of beautiful flowers in their own good time.

Reports of Societies.

International Horticultural Exhibition at Versailles: *Aug. 25 to 28.*—An International Horticultural Exhibition, organised by the Horticultural Society of the Seine-et-Oise, was opened in the park at Versailles on Saturday last and closed on Thursday night. It was held in that portion of the park lying between the flower garden of the Grand Palace and the world-renowned Neptune Fountains, and, for a Continental exhibition, must be pronounced a great success—a circumstance that is the more gratifying to Englishmen, from the fact that by far the most valuable contributions were shown by our countrymen, Mr. John Wills, Onslow Crescent, South Kensington, and Messrs. James Veitch & Sons, of Chelsea; and it is not too much to say that if it had not been for the grand lot of plants these gentlemen sent over, the show would not have been worth the journey from London to Versailles to see. As it was, English horticulture, or rather, we should say, English plant culture, was splendidly represented. Mr. Wills sent over four large vans containing more plants than were required for competition in seventeen different classes, and with these he won fourteen 1st prizes, besides being awarded the "Grand Prize of Honour," a Sèvres vase of considerable value, given by the Minister of Public Instruction and the Fine Arts—an achievement alike gratifying to the exhibitor and the country he represents. Messrs. James Veitch & Sons did not enter into any of the competitions, but were awarded an "object of art" as a special prize.

The principal contributions were arranged in a large circular tent tastefully laid out, the whole of the plants being either plunged up to the rims of their pots or stood on raised beds of various shapes and heights; and the general effect when completed was exceedingly good. The business details at foreign shows are not carried out in so expeditious a manner as we are accustomed to, nor are the exhibitors themselves so quick as they might be in letting the visitors know their names and addresses; consequently we cannot pretend to enter into many details with reference to the various competitions, but must content ourselves with a note or two about the more noteworthy exhibits.

Mr. Wills' plants covered three large beds, one of which included a fine collection of Orchids for the season. Amongst these we noted two plants of Disa grandiflora, one of which was remarkably well flowered. Epidendrum prismatocarpum, with three good spikes; a fine pan of Miltonia virginalis; Dendrobium bigibbum, with two spikes; Oncidium Marshallianum, with two long spikes; O. obryzatum, Cattleya Loddigesii Odontoglossum Roezlii, Cattleya Eldorada, Oncidium flexuosum, Odontoglossum Alexander II., Lælia Lemoineana, &c. These formed a group in the centre, and were margined with plants grown for market purposes, such as small, neatly grown, and well coloured Dracænas, erect-flowering Gloxinias, small examples of Peperomia arifolia; Xylophylla latifolia; handsome leaved Begonias; Curmeria picturata; Rhopala aurea; Aralia gracillima, Tillandsia Zahnii, Cupania filicifolia, Nidularia Meyendorfii, Palms, Ferns, Crotons, &c. The second and most handsome group included a collection shown in a class for fine-foliage plants, consisting of a large pan of Sarracenia purpurea, with well-developed pitchers; a well-grown Paulinia thalictrifolia; a well-coloured plant of Phyllanthus nivosus, nearly 4 feet through; a fine Dracæna Gladstonei, a finely-grown and well-coloured Bertolonia Van Houttei, Yucca filamentosa variegata, a remarkably fine example; Goodyera Dawsoni, in capital condition; Anœctochilus Petola, a pretty plant; the rare Lindsæa Lowei, Pteris scaberula, a handsome example of Maranta Seemanni, and an equally fine Davallia Mooreana, Croton majesticus, and others, in capital form; Adiantum gracillimum, nearly 3 feet through; Gymnogramma chrysophylla, Gleichenia Mendelii, a perfect specimen, about 4 feet through, the finest we have seen; a splendid specimen of Pteris serrulata cristata, Cyathea Dregii, and a very tall Ficus Parcellii, &c.; also ten fine-foliaged stove plants, consisting of a Cycad, Latania rubra, and Pandanus Veitchii, both fine examples; Maranta Veitchii, a large bold-leaved Dracæna, a nice example of Phyllotænia Lindeni, a handsome specimen of Thrinax stellata, Ananassa sativa variegata, Theophrasta imperialis, and a tall Aralia filicifolia. Next to these came a group of thirty stove plants, including a well-flowered Dipladenia amabilis, a fine Curculigo recurvata variegata, Nepenthes intermedia, with a dozen pitchers; Artocarpus Cannoni, a beautiful plant with highly coloured leaves; Eucharis amazonica, Sarracenia flava maxima, a remarkably perfect plant, about 3 feet through; a large and well-flowered Ixora, and a similar one of Allamanda grandiflora. Near these stood a plant of Dendrobium superbiens, with three spikes of flowers, which came in 1st in its class—the newest introduced flowering plant. Then came good examples of Bertolonia superbissima, Ceterach aureum, some of the latest novelties amongst Coleuses, the new Nepenthes Hookeri, a grand plant with half-a-dozen fine pitchers; Anœctochilus ornatus, a pretty golden variegated-leaved form; Alocasia Johnstoni, Goodyera Rollissoni, Croton Earl of Derby, Dracæna Goldieana, the finest specimen in cultivation, from 4 to 5 feet high, and with ten perfect growths; Anthurium Veitchii, Nepenthes superba, with nine pitchers; Curmeria Wallisii, Croton mutabilis and Prince of Wales, Bowenia spectabilis serrulata, Anthurium Warocquianum, the new × Sarracenia Moorei, with six pitchers; the beautiful Calyptronema Swartzii, Bromelia Binottii, a striking plant, with long green leaves tipped with scarlet; Ficus Grellii, with bold pea-green serrated leaves; a good Nephrolepis Duffii, &c. To these succeeded a most interesting group of insectivorous plants, including Droseras rotundifolia, filiformis capensis, dichotoma, and spathulata; Dionæa muscipula, a fine pan; Cephalotus follicularis, Sarracenia psittacina, × Nepenthes Chelsoni, &c. Then came an angle in the bed in which Mr. Wills sunk an ornamental zinc tray, which was filled with water, and ornamented with a very fine specimen of Ouvirandra fenestralis with twelve large leaves and in flower; in the centre and in the corners Trapa natans (p. 213) and Ceratopteris thalictroides. The margin of the miniature pond was covered with Selaginella apoda, and a background to the whole formed of choice exotic ferns. It was a pretty little bit, and came in for a large share of admiration on the part of the visitors.

The other group was made up with fine Crotons, Dracænas, and Palms. Amongst the Crotons were good fresh specimens of C. variegatus, falcatus, Burtoni, Queen Victoria, Mortii, nobilis, Johannis, Sunset, maculatus, Katoni, M'Arthurii, Cooperi, Macafeeanus, lancifolius, tortilis, Imperator, Regina, Rex, Bismarckii, Mooreanus, Disraeli, camptophyllus, angustifolius, chrysophyllus, paradoxus, hastiferus and spiralis; a very complete representation of the genus, but not all that Mr. Wills exhibited, for near by was a group of six, competing in a class for that number, and consisting of C. Sunset, 4 feet high, and finely coloured; volutus, 5 feet high and from 2 feet to 3 feet through, in grand condition; the new Jamesii, Prince of Wales, a beautifully coloured specimen; Queen Victoria and Andreanus, a capital well coloured specimen. The collection of Dracænas was a very good one, though not so large or so complete as we have seen Mr. Wills stage, yet sufficiently good to show how well he can grow this class of plants. Amongst the principal sorts were albo-marginata from 4 feet to 5 feet high, and smaller ones of picturata, recurva, terminalis alba, Tellingii, Gladstonei, Willsii, salmonea, regalia, Berkeleyi, Bausei, Renardi, Goldieana, Ernestii, &c. In a class for one or more new ornamental seedling plants Mr. Wills was 1st with Dracænas Leopoldii, albo-marginata, and amabilis; and his 1st prize group of five Palms included the only known plant in Europe of Pritchardia grandis (fig. 53), the grandest Palm in the show; a very handsome Phœnix reclinata, Plectocoma assamica, another specimen Phœnix rupicola, and a tall well-furnished Cocos Weddelliana.

Messrs. James Veitch & Sons' very fine collection included a splendid specimen of one of their new large-leaved Anthuriums; a grand lot of Nepenthes, such as N. × Chelsoni, hybrida maculata, × Courtii, × Sedeni, Hookeri, ampullacea, vittata major, zeylanica, rubra, Stewartii, Kennedyana, &c.; an assortment of Bertolonias, Sonerilas, Anœctochilus, microstylis, &c; Spathoglottis Petri, with one beautiful spike; Anthurium hybridum with fine bold trilobed leaves; Erythrina marmorata, Nephrolepis Duffii, a fine Alocasia Thibautiana, Hæmanthus cinnabarinus, and the white-flowered H. hirsutus; Cypripedium selligerum, with three spikes; C. Sedeni, C. Ashburtoniæ, C. hæmanthum, C. calanthum, and C. euryandrum; Croton Truffautianus, with bright golden leaves tipped with green; Adiantum Lawsonianum, Epidendrum vittatum, the fine new Cattleya Veitchii and C. Dominii, the new dwarf crimson-flowered Begonia Mrs. Potts, Oncidium concolor, Cattleya gigas Normanii, several of the new Crotons, including C. Hawkerii, a distinct pale green and golden-leaved form; Anthurium Veitchii, with noble leaves; Crinum Verschaffeltianum, Oncidium incurvum, with two grand spikes; Yucca filamentosa aurea elegantissima, the very distinct Araucaria Niepraschki, and a very complete collection of insectivorous plants, which included × Sarracenia formosa, a pretty hybrid between S. psittacina and S. variolaris, shown now for the first time.

M. Moser, of Versailles, was awarded the special prize given by the lady patronesses of the Society for a rich collection of Aralias, Conifers, and Palms, shown in separate tents. The Aralias were especially good, and consisted of such sorts as Sieboldii, Sieboldii foliis aurea and argentea, the old pulchra, elegantissima, Humboldtii, Osyana, leptophylla, nymphæfolia, in the style of the last but distinct in its darker-coloured Ivy-like leaves; paradistica, trifoliata, arborea, digitata, hederæfolia, &c.

To M. Leon, Duval of Versailles, was awarded the special prize given by the Minister of Agriculture for probably the finest bed of Gloxinias that has ever been shown. This bed was one of the prime features of the show, remarkable alike for its extent and example of Anthurium crystallinum, Dracæna Casanovæ, Artocarpus grandis, a noble looking plant, with large, deeply cut leaves; the bronze-leaved Kentia Lindeni, Cespedesia Bonplandi, a striking plant in the way of Theophrasta imperialis; Philodendron Melinoni, Tillandsia tesselata, &c. M. Linden did not compefe in any of the classes; but was awarded an object of art by the Society.

Another special prize was taken by M. J. B. Savoye, of Paris, for a fine collection of specimen Palms and other fine-foliaged plants; and yet another by M. Chevet, Rue de Repus, Paris, for a remarkable group of Oleanders, better grown and better flowered than we are accustomed to see them. The plants were

M. Truffaut was awarded an object of art. Near the last-mentioned tent was another one, which contained a capitally grown miscellaneous collection from M. Duval of Versailles, including some finely-bloomed bushes of Bouvardia Humboldtii corymbiflora; and a small group of Cycads from Auguste Van Geert of Ghent.

Coniferous trees, evergreen shrubs, &c., were largely shown outside, as also some well-flowered pyramidal Fuchsias about 8 feet high, and Heliotropes of nearly similar dimensions, trained fruit trees, &c.; and amongst the miscellaneous subjects worthy of mention were some fine beds of seedling Begonias, Achimenes exceedingly well done; some very good pot Vines from M. J. Margottin fils, of Bourg la



FIG. 53.—PRITCHARDIA GRANDIS. (SEE P. 283.)

beauty, and the fine development of the plants in both flowers and foliage. M. Ant. Chantin, Avenue de Chatillon, Paris, took another special prize, given by the Minister of Agriculture, with a good collection of Palms and Cycads, fine plants of well known species; and M. Constant Lemoine, of Angers, was awarded the special prize given by Madame Heine, President of the Lady Patronesses, for a very fine group of Dracænas, which included well-grown specimens of Youngii, Baptistii, gloriosa, cannæfolia, jaspidea, Goldieana, and several of Mr. Wills' new hybrids.

For an exceedingly good collection of fresh and very bright specimens of Crotons, M. Chantier, of Mortefontaine, took the special prize offered by the Western Railway Company. Several of the plants were very taking seedlings.

M. Linden, of Ghent, contributed a group of fine-foliaged plants, which included a remarkably fine from 3 to 5 feet high, and grown in little square tubs. There were twelve or thirteen different varieties, the best of which was one named Hacvili, a large double flesh-tinted pink of fine form, and very free-flowering; a faintly striped rose flower named coccine; and Mabire, a very free-flowering white.

The contribution of M. A. Truffaut, of Versailles, who was not competing, filled a tent to itself, and made quite a pretty little exhibition, the arrangement being very effective and the plants of fine quality. The principal feature was a large oval bed of Dracænas, which had for its central object a fine D. Chelsoni, then three rows of D. amabilis, remarkably well coloured, followed by belts of D. stricta and D. terminalis, and an outer one of D. Guilfoylei. A large circular bed of similar plants followed, and around the outside was an irregular border of Palms, Crotons, Begonias, and a great variety of other plants.

Reine; some fine cut blooms of Petunias, from M. Poivier, of Montreuil; Pelargoniums in great variety and very good, &c.

The FRUIT DEPARTMENT was very poorly represented, the only things staged worthy of note being a nice collection of Oranges, Almonds, Nuts, Plums, Apples, and Pears, from M. François Cirio, of Turin, Italy; a splended sample of the Grosse Violette Fig, grown at Argenteuil under the name of Dauphine d'Argenteuil—a variety of fine size, and apparently a very free bearer, shown by M. Louis Lherault, of Argenteuil, who also sent Peaches and Grapes. Vegetables were well represented in numbers, but with some few exceptions were of inferior quality, and call for no further comment. We may, however, note that the best collection came from the school of St. Nicholas at Igny.

Reading Horticultural: *Aug.* 22.—This was held in the Abbey Ruins. Plants, though not so numerous as last year, were generally excellent, and cut flowers have never been shown better or in larger numbers. For nine stove and greenhouse plants there was but one exhibitor, Mr. Lees, gr. to Mrs. Marsland, Whiteknights Park; all his plants betokened high culture, but especially did Eucharis amazonica, Plumbago capensis and Allamanda Schottii. For nine variegated or foliage plants there were four competitors, the 1st award being made to Mr. Ross, gr. to C. Eyre, Esq., Welford Park, who had grand specimens of Alocasia metallica, Croton angustifolius and Maranta zebrina. For specimen new or rare plant Mr. Higgs won an easy victory with Cattleya Eldorado; and Mr. Lees in this class for specimen stove or greenhouse plant in flower, had the finest grown and best flowered Fuchsia we have seen for a long time; the variety was Gazelle, and was quite 7 feet in height. The same exhibitor also won 1st for six fine Fuchsias, and Mr. Higgs followed suit with six magnificent Coleus. The groups of plants 12 feet by 10 feet have always been a feature at Reading, but for some unexplained reason only two competitors put in an appearance at this show. Mr. Lees and Messrs. Phipper & Robinson—both lots being well done, the prizes going in the order named. Messrs. Sutton & Sons showed a grand collection, two dozen varieties of Phlox Drmmondii, and the same of Dianthus Heddewigii, grown in their seed grounds at Reading. Mr. Prince of Oxford, had a stand of twelve H.P. Rose Clemence Raoux, an exceedingly difficult one to grow, but, as shown, it was superb, Mr. Betteridge, Chipping Norton, of Aster notoriety, had the most perfect stand of quilled Asters it is possible to conceive, and Messrs. Phippen & Robinson came well to the fore with a stand of Cockade Asters. Mr. Corp, of Oxford, was a successful competitor with Roses, and he also showed, not for competition, six stands of Tea Roses, which were quite a show in themselves. The competition for table decoration was good in all the classes. The awards went to Miss Phippen, Miss Holbrook, and Mrs. Webbe. In fruit the competition was good throughout. There were seven lots of three bunches of Black Hamburgh, 1st, 2d, and 3d lots being good, and the awards going to Mr. Higgs, Mr. Tomlin, and Mr. Ashby. In the class for any other Black eight competed, the 1st prize lot (Alicante) coming from Mr. Crump, Steventon Manor, Michel-dever, and were in all respects perfect. The 2d award was made to Mr. Tomlin, for good samples of Mrs. Pince's Muscat; and the 3d and 4th went to samples of Madresfield Court, both lots being badly coloured. In the class for three bunches of Muscat of Alexandria there were six exhibits, the 1st award going to Mr. Robinson, Royal Engineering College, Englefield Green, for really well finished samples; 2d, Mr. Ashby. Mr. Crump showed by far the finest Muscats, but so unripe that the judges were compelled to pass them. In the class for any other white kind five showed, the 1st going to fine examples of Buckland Sweetwater, from Mr. Wells, Ravenhill; and the 2d to Golden Queen, and were by far the best examples of this Grape that have yet been exhibited—they came from Mr. Atkins, gr. to Colonel Loyd Lindsay, Lockinge. The collections of fruit were all very good, Messrs. Sutton's cup for eight dishes being well won by Mr. Ross, of Welford. In the class for six dishes six competed, whilst in that for four dishes not fewer than twelve, and all were excellent. Melons were unexceptionally good, for out of some fourteen scarlet-fleshed fruit there was not one bad one. The 1st and 2d awards were made to the variety Hero of Bath, and the 3d to Read's Hybrid.

The display of vegetables is never very great at Reading, but considering the prizes offered the competition was great, Onions and Potatos being excellent. In the latter, International Kidney took all the prizes in the kidney class; and in the round class Schoolmaster and Blanchard. Mr. Higgs showed a brace of good Cucumbers named Model, which well deserved that name, and gained him 1st honours. (*From a Correspondent.*)

Sevenoaks Horticultural: *August* 22.—This Society held its eleventh exhibition in the beautiful grounds of Montreal Park, Sevenoaks, on August 22, under exceptionally favourable circumstances, including a fine day. The exhibits, which were very numerous and filled to overflowing three large tents—one a very large one indeed—were of a higher class of merit than any that we have previously witnessed during the existence of the Society. We must content ourselves by giving a report of one of the five divisions which it comprised.

For the best collection of exotic flowering plants, eight distinct varieties (excluding florists' flowers and Orchids), W. Spottiswoode, Esq., Coombe Bank (gr., Mr. Bolton), and B. Mildmay, Esq., Shoreham Place (gr., Mr. Burt), were placed equal 1st with splendid collections. Amongst Mr. Bolton's plants were a remarkably well-flowered and large plant of Ixora Williamsii, Allamanda grandiflora, also a remarkably fine "bit", Francisceas, &c. Mr. Burt had one of the largest trained specimens of Lapageria alba we have yet seen, Clerodendron Balfourianum, fine for the late season; a large and well-finished Erica cerinthoides coronata, &c. Mr. Burt took the premier award for Orchids, having good examples of Thunia alba, Sobralia macrantha, Vanda suavis, &c.

For six ornamental foliage plants, distinct varieties, the competition was very severe. Mr. Bolton secured the 1st prize, his collection including a splendid Maranta Veitchii, Dieffenbachia Bausei, Croton Weismanni, excellently coloured; and Areca Verschaffeltii. B. Atkins, Esq. (gr., A. Gibson), was 2d, his Croton Youngii being unsurpassable both in growth and colour: many of the leaves upon this plant measuring a yard in length; Dracæna Baptistii, splendidly grown, and Croton majesticus, &c. Mr. Burt was 3d with a neat collection, his Anthurium Crystallinum being probably the best ever shown.

For six Fuchsias, C. R. C. Petly, Esq. (gr., Mr. S. Meakin), and Mr. Bolton took 1st and 2d prizes in the order here given. Caladiums are always well shown here. Mr. S. Meakin was 1st with fine examples of Alfred Bleu, Albert Edward, and Triomphe de l'Exposition. Mr. J. Burt was a good 2d; and Colonel Warde, Squerries Court (gr., Mr. G. Hubbard), a meritorious 3d. Six flowering Begonias were remarkably well shown, Mr. W. Bligh and Mr. Meakin being respectively 2d and 3d. The former had a plant of Vesuvius at least 12 feet in circumference.

With Zonal Pelargoniums Messrs. Meakin and Bligh were placed as named, Mr. Meakin being 1st with those shown for "beauty of foliage." There was a good display of Achimenes, the prizes being awarded to Rev. S. Curteis and — Thompson, Esq. (gr., G. Sears). For British Ferns, Mr. Smith, Westerham, ably won 1st prize. Twelve exotic Ferns brought the gardeners out in force, the decision of the judges giving prizes in the order named, viz., to Messrs. Bolton, Mr. Staples, gr. to — Openheim, Esq., and Mr. Bligh. For specimen plant Mr. Bligh was also 1st.

With twenty-four cut Roses Messrs. Seale, nurserymen, Sevenoaks, and W. Piper took highest honours—Captain Christy being 1st for twelve blooms. Twenty-four Dahlias were remarkably well staged by Messrs. Seale, Sevenoaks, and W. Steer, Eltham, who won the prizes in the order their names stand—good blooms of Mrs. Saunders, Flora Wyatt, and James Service being amongst them. A large quantity of Asters were shown, and good Gladiolus: Mr. Cattell was 1st and Mr. Seale 2d, the former having fine spikes of Voltaire, Sir W. Scott, Victor, and Lord Granville. Mr. Knight was 1st with twelve spikes, Messrs. Cattell and Bolton being 1st and 2d respectively with Phloxes. Mr. Staples staged a splendid box of cut stove and greenhouse plants, J. Bolton and W. Burt being 2d and 3d.

Fruits were, as previously observed, splendidly shown. For six varieties, Pines excluded, Mr. Bolton was 1st, E. Cazalet, Esq. (gr., Mr. Fennell), 2d, and Mr. Henderson 3d. Black Grapes, three bunches, were shown by Messrs. Goldsmith, P. C. Hardwick, and Hollenden. The best white Grapes came from Mr. W. Pepper, Bromley Common. Messrs. Bolton and Harris were respectively 1st and 2d for a collection of Grapes, three varieties, some large bunches especially of Black Prince and Muscat of Alexandria being shown by the former. Melons were numerous, the three prizes falling to Messrs. C. Goldsmith, R. Knight, and G. Fennell. With Peaches, Messrs. G. Hubbard and G. Goldsmith were 1st in their respective classes, C. G. Goldsmith being also 1st with Nectarines. Mr. Staples took 1st prizes for Plums, Green Gages, Pears, &c.

Vegetables were numerous and good, the many collections of nine kinds not having an indifferent one amongst them. After a severe task the judges awarded the premier prizes to Messrs. Bolton, 1st; Earl Stanhope (gr., P. Gray), 2d; P. Staples 3d, and J. Don 4th. The successful competitors with Cucumbers were Messrs. Bolton, Philips, and Wood.

In the open class, viz., class 72, collection of plants arranged for effect in a space limited 9 feet by 6 feet, there was quite a war of emulation, the whole of the many collections being in admirable taste; prizes were adjudged to Messrs. Bolton, 1st, Burt 2d, Sir Charles H. Mills (gr., J. Don) 3d, and Mr. Hubbard 4th. Table decorations were as usual good. The Misses Staples were 1st in three groups, Mrs. Beach 2d, Miss Sarah Dudman 3d. For single stand Miss Seale was 1st and Mrs. Bolton a good 2d; and with hand-bouquets Miss Seale, Mrs. Bishop, and Mrs. Bolton were "placed." Nor should we overlook special prizes given to gardeners not having more than one assistant for group of plants arranged for effect, in which Messrs. Meakin, H. Ayland, and Miss Carr showed so well and took prizes in the order given. Amongst the miscellaneous subjects was a splendid dish of Malay Apples (Eugenia malaccensis), shown by Mr. Coomber, Royal Botanic Garden, London, &c. There was also a bee show by the British Bee Association, which seemed to be well patronised. *W. E.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, AUGUST 28, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Mean of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for the Day.	Departure of Mean from Average of 60 years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Aug.	In.	In.	°	°	°	°	°	°			In.
22	29.70	−0.12	71.2	55.8	15.4	61.4	+ 0.7	53.6	76	E.S.E.: S.E.	0.06
23	29.32	−0.50	67.8	57.0	10.8	60.6	− 0.1	60.1	98	S.E.	0.49
24	29.27	−0.56	63.0	58.0	5.0	59.4	− 1.2	58.7	98	S.S.E.: NNW	0.44
25	29.34	−0.49	63.2	56.0	7.2	58.1	− 2.4	57.0	96	S.W.	0.01
26	29.38	−0.47	70.1	53.3	16.8	60.0	− 0.4	57.2	91	S.S.E.: S.E.: S.S.E.	0.00
27	29.52	−0.33	72.0	58.0	14.0	62.7	+ 2.4	55.3	77	S.: S.S.W.	0.08
28	29.61	−0.25	71.3	57.1	14.2	62.8	+ 2.6	54.0	73	S.S.W.: S.W.	0.00
Mean	29.45	−0.39	68.4	56.5	11.9	60.7	+ 0.2	56.6	87	S.	sum 1.08

Aug. 22.—A dull cloudy day. Strong breeze. Rain fell after 7.45 P.M.

— 23.—A dull day. Frequent showers. Much thunder between noon and 4 P.M. Heavy shower at noon. Thick fog at night.

— 24.—Miserably dull till evening, then fine. Frequent rain. Thunderstorm in morning and frequent thunder was heard all day. Clear at night.

— 25.—A very dull day, a little rain and fog in early morning. Cloudless at night.

— 26.—Fine till 11 A.M., very dull after, and overcast at night.

— 27.—Overcast and wet till 10 A.M. Fine and bright after. Cloudless at night.

— 28.—A fine bright day, partially cloudy. Windy. Warm. Overcast at night.

LONDON: *Barometer.*—During the week ending Saturday, August 24, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 30.02 inches at the beginning of the week to 30.08 inches by the morning of the 18th, decreased to 29.86 inches by the afternoon of the 19th, increased to 30.06 inches by the morning of the 21st, decreased to 29.45 inches by the afternoon of the 24th, and was 29.49 inches by the end of the week. The mean reading for the week at sea level was 29.83 inches, being 0.18 inch above that of the preceding week, and 0.17 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 74° on the 18th and 19th to 63° on the 24th; the mean value for the week was 69½°. The lowest temperatures of the air observed by day varied from 52° on the 21st to 58° on the 24th; the mean value for the week was 55°. The mean daily range of temperature in the week was the greatest on the 18th, 19½°, and the least on the 24th, 5°; the mean for the week was 14½°.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—18th, 62°.8, + 1°.8; 19th, 62°.4, + 1°.5; 20th, 58°.9, + 1°.9; 21st, 58°.5, — 1°.8; 22d, 61°.4, + 0°.7; 23d, 60°.6, — 0°.1; 24th, 59°.4, — 1°.2. The mean temperature of the air for the week was 60°.6, being 0°.1 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in full rays of the sun, were 126° on the 18th and 22d, 119° on the 19th, and 113¼° on the 21st; on the 23d the reading did not rise above 89°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 45° on the 20th and 48° on the 19th; the mean of the seven low readings was 50½°.

Wind.—The direction of the wind was E., and its strength moderate.

The weather during the week was generally dull, and the sky was always cloudy.

Thunderstorms occurred on the 23d and 24th.

Rain fell on three days during the week; the amount collected was 0.99 inch.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 76° at Sunderland, 75¾° at Bristol, and 74° at Blackheath, Truro, and Eccles; the highest temperature of the air at Liverpool was 68¼°, and at Plymouth and Sheffield was 70½°; the mean value from all stations was 73°. The lowest temperatures of the air observed by night were 44° at Eccles, 45° at Hull, and 46° at Truro, Sheffield and Leeds; the lowest temperature of the air at Liverpool was 53½°, and at Brighton was 52½°; the mean value from all stations was 48½°. The range of temperature in the week was the greatest at Eccles,

30°, and the least at Liverpool, 15° ; the mean range of temperature from all stations was 24¾.

The mean of the seven high day temperatures was the highest at Bristol, 71½°, and Sunderland, 70°, and the lowest at Liverpool, 65¾°, and Bradford, 66¼° ; the mean from all stations was 68½°. The mean of the seven low night temperatures was the lowest at Eccles, 50°, and Hull, 50½°, and the highest at Truro, 56¾°, and at Plymouth and Bristol both 55¾° ; the general mean from all stations was 53°. The mean daily range of temperature in the week was the greatest at Eccles, 19¼°, and the least at Liverpool, 11° ; the mean daily range from all stations was 15½°.

The mean temperature of the air for the week from all stations was 59°, being ¼° higher than the value for the corresponding week in 1877. The highest were 62° at Bristol, 61½° at Truro, and 61° at Sunderland ; and the lowest at Hull, 57½° and Wolverhampton, Eccles, and Bradford, all 57¾°.

Rain fell on every day in the week at Truro, and on three days at most other places. The amounts varied from 1.38 inches at Sheffield, 1.25 inches at Truro, and 1.14 inch at Brighton and Nottingham to four-tenths of an inch at Cambridge, Hull, Leeds, and Sunderland. The average fall over the country was 0.80 inch.

The weather during the week was generally dull, and the sky cloudy.

Thunderstorms occurred in the South of England on the 23d and 24th.

SCOTLAND : *Temperature.*—The highest temperatures of the air observed by day varied from 72° at Dundee to 64½° at Aberdeen ; the mean value from all stations was 68½°. The lowest temperatures of the air observed by night varied from 43½° at Edinburgh to 49° at Glasgow and Dundee ; the mean value from all stations was 47°. The mean range of temperature from all stations was 21½.

The mean temperature of the air for the week from all stations was 57¾°, being 5° higher than the value for the corresponding week in 1877. The highest was 58½°, at Dundee and Paisley, and the lowest was 56½°, at Aberdeen.

Rain.—The heaviest fall of rain in the week was 0.46 inch at Greenock, and the least fall was 0.07 inch at Leith ; the average fall over the country was 0.22 inch.

DUBLIN.—The highest temperature of the air was 72¾°, the lowest 48¼°, the range 24½°, the mean 60°, and the fall of rain 1¼ inch.

JAMES GLAISHER.

Obituary.

WE regret to announce the death, on the 26th inst., of Mr. ANTHONY NICOLAS BIJVOET, of Overween, near Haarlem. Mr. Bijvoet was the head of the well-known firm of bulb growers and a fine example of a Dutch country gentleman, beloved and respected by all who knew him. Mr. Bijvoet was in his seventy-eighth year.

Enquiries.

He that questioneth much shall learn much.—BACON.

MOSQUITO CAKE. — Would any correspondent be kind enough to give the address of where a substance called Mosquito Cake is to be procured? It is sold somewhere in the neighbourhood of Leicester Square, and is intended for feeding small birds, and is said to be made of a mass of mosquitos, or small insects, pressed together into a cake. *O.*

TO DESTROY IVY. *E. F.* asks for information how to keep under the small-leaved Ivy, which threatens to establish itself in his young plantations. It is either self-sown or brought by birds, but being a native of the climate it soon spreads itself along the ground, forming a sort of network over the entire surface ; it has so many roots that it is almost impossible to pull them all up and burn them. He would be much obliged for advice as to what to do. We know of no better plan than grubbing up the plants. Can any of our readers help him?

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

FLOWERS NEAR EASTBOURNE.—In answer to the question on page 253, as to the name of a certain garden plant near Eastbourne, I venture to suggest that it may be the white Goat's Rue, Galega officinalis, L., var. alba, like the enclosed. *B. D. J.*

ESCALLONIA MACRANTHA : *J. T. S.* It is easily propagated by layers in spring, or by cuttings in the early summer months.

FERN BASKETS : *Ignoramus.* We presume you mean rustic baskets made from branches of trees. For this purpose gnarled Oak is the best, or portions of old Yew trees. You must enquire for what is available in your own immediate neighbourhood.

FILBERTS AND NUTS : *W. T. T.* The woodcuts appeared in our columns for 1872, pp. 1488, 1489.

INSECTS : *J. S. B.* The black Poplar leaf had been gnawed by about two dozen individuals of Chrysomela (Phædon) Vitellinæ, a beetle which is attached to trees of the Poplar kind.—*Alex. Reid.* We found no trace of insects on your Vine leaves, which seem to have been injured by sun scorching.—*W. Marshall.* The small shining steel blue beetles destroying the Mustard crops are Chrysomela (Phædon) Betulæ. Please send us some of the larvæ. *I. O. W.*

LILIUM AURATUM : *F. G. Saunders.* The Lily is an uncommon high-coloured variety, but not unknown.

NAMES OF FRUIT : *J. Hawkins.* 1, Red Roman ; 2, Pitmaston Orange.—*R. S.* Your Plums were smashed to pulp when received.—*Clark Bros.* The Pear is the Crawford, or the Scotch Lammas ; it is very hardy, and an abundant bearer, in which sense it might pay for growing for market.

NAMES OF PLANTS : *T. R. B.* 6, Seed of some leguminous plant near to Guilandina. We cannot undertake to name the others from leaves alone.—*Redwood.* Your leaf was too much shrivelled.—*F. T.* 1, Veronica spicata ; 2, Sempervivum hirtum ; 3, Datura stramonium ; 4, Saxifraga hyphoides.—*T. B. W.* Lycopus europæus ; 2, Scutellaria galericulata ; 3, Bidens cernua ; 4, Stachys sylvatica ; 5, Ononis procurrens ; 6, Scabiosa succisa.—*G. H.* Althæa frutex of gardens, more correctly Hibiscus syriacus. — *X.* 1, Humulus Lupulus (wild Hop) ; 2, Circeia lutetiana (Enchanter's Nightshade) ; 3, send better specimen.—*H. M. E.* Echinops Ritro ; a fine old herbaceous plant.—*W. T. T.* Staphylea pinnata.—*L. J.* Asclepias curassavica.—*J. Cocker & Sons.* 1, Veronica virginica ; 2, Eupatorium cannabinum ; 3, Echinops sphærocephalus ; 4, Eryngium bourgati ; 5, Eryngium rigidum ; 6, Eryngium amethystinum.—*W. T. T.* 1, Platyloma flexuosum ; 2, apparently Cheilanthes hirta, which is South African ; 3, Polystichum angulare proliferum, in one of its many forms : to prevent its getting "thripped," keep the roots and the atmosphere moist. The thrips revel in drought.—*T. B. S.* 1, Adiantum Ghiesbreghtii, *alias* scutum ; 2, Gymnogramma Calomelanos ; 3, next week. The Violet is probably the Russian.—*H. Jervis.* A Caladium, but they are now so numerous we cannot say which.—*K.* Fuchsia procumbens.—*M. L.* Salvia farinacea.—*A. G. Subscriber.* Scutellaria minor.— *J. H.* Lilium pseudo-tigrinum.—*J. A. C.* Lychnis chalcedonica.—*R. S.* 1, Helichrysum panormitanum ; 2, Sedum Telephium variegatum.—*Cranston & Co.* Cynara scolymus.—*J. G. D.* 1, Chrysanthemum Balsamita ; 2, Satureia montana ; 3, Prunus eleæagnifolia ; 4, Pinus Strobus ; 5, Biota orientalis ; 6, Cornus macrophylla.—*Connon & Reid.* Eupatorium glechonophyllum, a native of Chili.—*Salvia.* Salvia Grahami.—*J. Leman.* 2, Funkia subcordata.—*Cobo.* 1, Lepidium latifolium ; 2, Polygonum amphibium.—*T. H. H.* Oxalis corniculata, sometimes taken as the Shamrock ; at other times the Dutch Clover, Trifolium repens, is taken for it.

PROTECTION FOR WALL-FRUITS : *E. M.* Glass copings are now very commonly used, and are of great service as a protection in spring. They can be made by any hothouse builder. In combination with netting they are very efficient, and are no doubt what you want.

VERBENA SEEDLINGS : *Tulpa.* Your specimen came to hand quite withered.

VINES, TREATMENT OF : *H. Clerk.* We cannot pretend to say that your Grapes have been treated rightly or wrongly unless we are better acquainted with details, &c., of which, at present, we are totally ignorant. As a general rule, subject to change according to circumstances, the plan followed has been good.

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

COMMUNICATIONS RECEIVED.—John Osborn.—H. E. W.—Thos. C.—J. H.—W. H. W.—D. T. F.—S. J.—J. J.—H. E.—A. F.—G. J.—J. C.—W. B.—H. R.—J. M.—B. W.—W. E. D.—J. T. S.—J. A. C.—M. W. B.—W. J.—M. L.—Editor of the *Queen*.—W. F.—E. P.—M. C.—T. L.—H. T.—W. M.—G. C. H.—M. McL.—R. & T.—G. C. L.—J. F.

Markets.

COVENT GARDEN, August 29.

The supply of better classes of fruit is now more than equal to the demand, Grapes, Peaches, and Nectarines meeting with a bad sale, and being slowly cleared at low rates. Plums, Filberts, and Cobs are in good demand. *James Webber, Wholesale Apple Market.*

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	..	2 0– 4 0	Herbs, per bunch	..	0 2– 0 4
Aubergines, p. doz.	..	1 0– ..	Horse Radish, p. bun.	..	4 0– ..
Beans, French, lb.	..	0 4– 0 6	Lettuces, Cos, Eng., per score	..	1 6– 2 6
— runners, p. bush.	..	4 0– 6 0	Mint, green bunch.	..	0 4– 0 6
— broad, per bush.	..	3 0– ..	Onions, young, bun.	..	0 4– 0 6
Beet, per doz.	..	1 0– 2 0	Parsley, per bunch.	..	0 4– ..
Cabbages, per doz.	..	1 0– 2 0	Peas, green, per qr.	..	1 6– 2 0
Carrots, per bunch	..	0 4– 0 6	Radishes, per bunch	..	0 1– 0 3
Cauliflowers, per doz.	..	4 0– 6 0	— Spanish, doz.	..	1 0– ..
Celery, per bundle	..	1 6– 2 0	— New Jersey, doz.	..	2 0– ..
Chilis, per 100	..	5 0– ..	Shallots, per lb.	..	0 6– ..
Cucumbers, each	..	0 4– 1 6	Spinach, per bushel	..	2 0– 3 0
Custard Mar., doz.	..	3 0– ..	Tomatos, per dozen	..	2 6– 3 0
Endive, Batav. dozen	..	1 6– ..	Turnips, new, p. bun.	..	0 6– ..
Garlic, per lb.	..	0 6– ..	Vegt. Marrows, doz.	..	2 0– ..

Potatos are very plentiful, and in some places much diseased. Prices range :—Myatt's, 120*s.* to 160*s.* ; Regents, 100*s.* to 130*s.* ; Early Rose, 120*s.* to 140*s.* per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	..	1 6– 4 0	Melons, each	..	1 0– 3 0
Figs, per dozen	..	0 6– 2 0	Peaches, per dozen	..	1 0– 8 0
Filberts, per lb.	..	0 6– 0 0	Pears, per doz.	..	1 0– 3 0
Grapes, per lb.	..	0 6– 4 0	Pine-apples, per lb.	2	0– 8 0
Lemons, per 100	..	4 0–12 0	Plums, ½-sieve	..	2 0– 5 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz.	..	4 0–12 0	Fuchsias, per dozen	3	0–12 0
Begonias, per doz.	..	4 0–12 0	Hydrangea, per doz.	9	0–18 0
Bouvardias, do.	..	12 0–24 0	Mignonette, per doz.	3	0– 9 0
Calceolarias, p. doz.	..	6 0–12 0	Musk, per dozen	..	2 0– 6 0
Chrysanth., per doz.	6	0– 9 0	Myrtles, per doz.	4	0–12 0
Coleus, per dozen	..	3 0– 9 0	Palms in variety, each	..	2 6–21 0
Cyperus, do.	..	6 0–12 0	Pelargoniums, per dozen	..	0–24 0
Dracæna terminalis	30	0–60 0	— viridis, per doz.	18	0–24 0
Euonymus, var., doz.	4	0–18 0	— scarlets, zonal, per dozen	..	2 6– 9 0
Ferns, in var., doz.	4	0–18 0	Petunias, per dozen	4	0–12 0
Ficus elastica, each	2	6–15 0	— Fairy, per doz.	9	0–12 0
Foliage Plants, various, each	..	2 0–10 6	Vallota, per doz.	..	9 0–24 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6– 1 0	Myosotis, 12 bun.	3	0– 6 0
Asters, 12 bunches	2	0– 4 0	Pelargoniums, 12 spr.	0	9– 1 6
Bouvardias, per bun.	1	0– 4 0	— zonal, 12 sprays	0	4– 1 0
Calceolaria, 12 bun.	6	0–12 0	Phlox, 12 bunches	6	0–12 0
Carnations, 12 bunch.	4	0–12 0	Primula, double, per bunch	..	1 0– 2 0
Cornflower, 12 bun.	2	0– 6 0	Pyrethrum, 12 bun.	3	0– 6 0
Dahlias, 12 bunch.	3	0– 9 0	Roses (indoor), doz.	1	6–12 0
Delphinium, 12 bun.	6	0–12 0	— (outdoor), 12 bun.	3	0–12 0
Eucharis, per doz.	4	0–12 0	Stephanotis, 12 sp.	3	0– 9 0
Gardenias, 12 blms.	3	0– 9 0	Stocks, 12 bunches	4	0– 9 0
Gladioli, various, spikes	..	1 6– 4 0	Sweet Peas, 12 bun.	2	0– 6 0
Heliotropes, 12 sp.	0	6– 1 0	Sweet Sultan, 12 bun.	6	0– 9 0
Jasmine, 12 bunches	4	0– 9 0	Tropæolum, 12 bun.	1	0– 4 0
Mignonette, 12 bun.	2	0– 6 0			

SEEDS.

LONDON : *Aug.* 28.—The seed markets this week have been well attended, and there has been a fair trade doing. The stocks of new English Trifolium are now getting into narrow compass, and the offerings from the country are on a very narrow scale. A spell of favourable weather would greatly increase the demand for this article. There is no change in the value of winter Tares : some of the parcels just received show bad condition. A few more samples of new white Mustard have recently come to market, but most of these are soft and damp. Sowing Rape seed finds buyers on former terms. Reports just to hand from the Western States of America are to the following effect :—"The Timothy crop is beyond doubt smaller than has been looked for, and the market is daily firming. The higher freights demanded by the railroads also add to the cost. There is ample time yet for something to happen to our crop of Clover ; however, if nothing unfavourable occurs the yield will undoubtedly be larger than last year's ; but the scarcity of old seed causes difficulty in meeting home demands, and prices consequently point upwards. The domestic inquiry will this fall be large, and the export demand to Europe is expected to be considerable. Enhanced quotations for Timothy may also mean higher prices for Clover." The accounts to hand of the Clover crop of Italy and the South of France are most discouraging. Some business has been passing in Trefoils. Canary seed keeps steady at the late advance. Hemp is firmer. Blue Peas continue scarce. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday some little uneasiness was felt as to the damage the heavy rains may have produced among the crops. For English Wheat quotations ranged from about 42*s.* to 45*s.* for red, and from 48*s.* to 52*s.* for white ; some exceptionally fine samples running up perhaps to 53*s.* per quarter. Last year's English Wheat was neglected. In foreign, business was rather slow, and any attempt to force up the price put a stop to sales. Barley was without quotable change. Malt remained quiet on former terms. Oats supported previous rates, and in the case of Maize an advance of 6*d.* per quarter was reported. Beans and Peas were firm. For flour the demand was of no importance.—There was no material change in prices on Wednesday. New English Wheat was in moderate supply, and prices, as before, ranged up to 52*s.* per quarter. Old foreign Wheat was quiet but firm. Maize supported its late advance, and full prices were quoted for most other descriptions of produce.—Average prices of corn for the week ending August 24 :—Wheat, 45*s.* 2*d.* ; Barley, 36*s.* 3*d.* ; Oats, 27*s.* 9*d.* For the corresponding period last year :—Wheat, 63*s.* 10*d.* ; Barley, 33*s.* 9*d.* ; Oats, 28*s.* 4*d.*

POTATOS.

The Borough and Spitalfields reports state that the Potatos offering are still very much out of condition, but the trade remains steady at about late rates. Regents, 80*s.* to 120*s.* per ton ; Shaws, 50*s.* to 65*s.* ; kidneys, 100*s.* to 130*s.* ; Victorias, 100*s.* to 120*s.* ; English Rose, 110*s.* to 140*s.* per ton.—Potatos continue to arrive in London in very small quantities, the receipts last week being only 250 bags from Hamburg, and 96 bags from Boulogne.

COALS.

The tone of the market on Monday was firm, and the prices of last week were fully supported for both first and second qualities. The supply at market on Wednesday was short, but did not fall below what was required, the consequence being that Monday's figures were maintained. Quotations :—East Wylam, 16*s.* ; Walls End —Hawthorns, 16*s.* 3*d.* ; Original Hartlepool, 17*s.* 6*d.* ; South Hetton, 17*s.* 6*d.* ; Salvin's Hutton, 16*s.* 9*d.* ; Thornley, 16*s.* 6*d.*

PRIMULAS, CINERARIAS, CHOICE GERANIUMS, &c.—Striped Vesuvius and Salmon Vesuvius, 1s. 6d. each; White Vesuvius and Dr. John Denny, 2s. each, post-free; twelve fine distinct Geraniums for pot culture, winter blooming, &c., 4s. and 6s., post-free. Primulas and Cinerarias, 2s. per dozen, post-free; Roman Hyacinths, fine bulbs, 2s. 6d. per dozen, 17s. per 100.

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PALMS.—Latania borbonica, 15 inches, in 6-inch pots.

FERNS.—Adiantum cuneatum and gracillimum, Lomaria gibba, extra strong; Pteris tremula, cretica, cretica albo-lineata; Cyrtomium falcatum in 3 and 6-inch pots. Also specimens of cuneatum and gracillimum.

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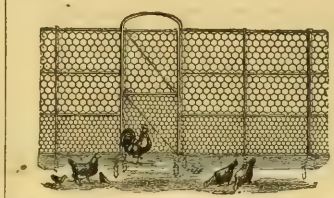
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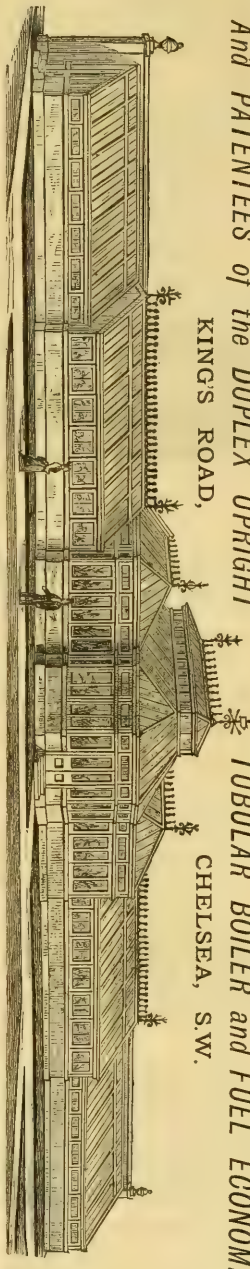
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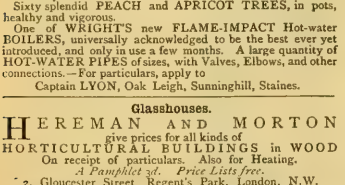
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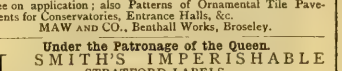
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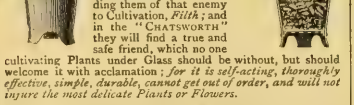
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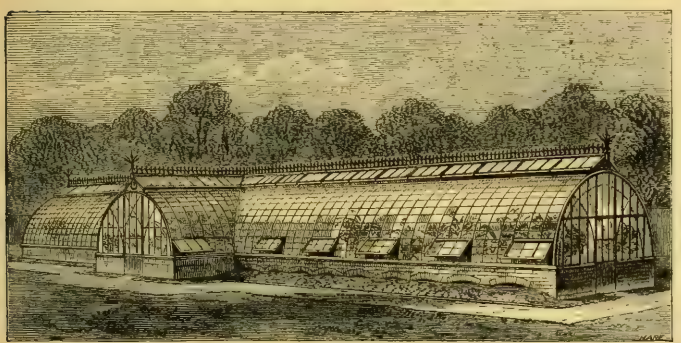


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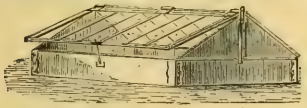
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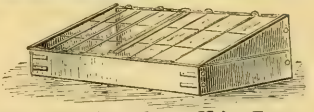
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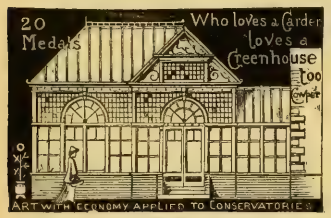
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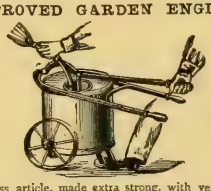
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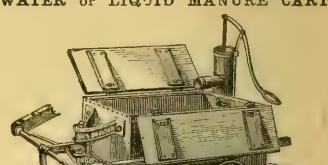
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The Judges at the late Great International Horticultural Exhibition held at Manchester (1873), tested this Engine very severely, and although all the principal makers competed, it was declared to be the best, and was awarded the only prize, a Silver Medal.

WATER or LIQUID MANURE CART.



The above is by far the strongest, most convenient, and cheapest implement of the kind yet introduced. For conveying and distributing liquid manure it is invaluable. A pump can be attached for emptying cesspools, &c. As a drinking trough for cattle, and for many other farm purposes, it is most useful. The shafts and lids are arranged to turn back out of the way.

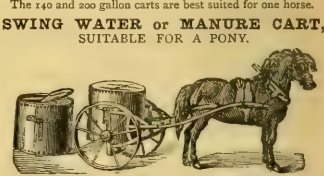
Carriage paid to any Railway Station in England. Cash Prices.

To hold 140 gallons	£10	10	0
,, 200 ,, ...	12	10	0
,, 250 ,, ...	14	10	0
Galvanised Iron Pump and 10-feet Indiarubber Suction Pipe	3	15	0
Spreaders .. .. .. each	0	15	0

The 140 and 200 gallon carts are best suited for one horse.

SWING WATER or MANURE CART,

SUITABLE FOR A PONY.



With two tanks to one carriage a large quantity of liquid can be carried in a short time, one tank being filled while the other is conveyed away. The tanks are galvanised, and can be set down and left in the fields for cattle to drink from.

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Valve and Spreader for ditto	1	5	0

Goods amounting to 40s. sent carriage free to any of the principal Railway Stations in England. Cash or reference respectfully requested with transmission of all first orders.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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With this Number is presented a Coloured Plate of "CHOICE HYACINTHS."

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25. Schedules may now be had on application to
Mr. THOMSON, Crystal Palace.

THE INTERNATIONAL POTATO EXHIBITION will be held at the Crystal Palace, Sydenham, on SEPTEMBER 24 and 25. Last day of entry, September 17. Schedules and all particulars may be obtained on application to
J. A. McKENZIE, 1 and 2, Great Winchester Street Buildings, London, E.C.

The Royal Pavilion, Brighton.

THE GRAND AUTUMN EXHIBITION of the BRIGHTON and SUSSEX HORTICULTURAL SOCIETY will be held at the above splendid Palace and Grounds on WEDNESDAY and THURSDAY, SEPTEMBER 11 and 12. Prizes are offered on the same liberal scale of former years for Plants, Ferns, Cut Flowers, and Fruits. The Railway Cup is offered for the best ten varieties of Orchids.
Schedules of Prizes can be had on application to the Secretary, 96, St. James's Street, or Superintendent E. SPARY, Queen's Graperies, Park Street, Brighton.
EDWARD CARPENTER, Secretary.

NOTICE.—The PRIZES we offered for the best SINGLE BUNCH of MRS. PEARSON and GOLDEN QUEEN GRAPES, will be awarded by the Committee of the Royal Horticultural Society at their meeting of October 15, at the South Kensington Gardens. The prizes are £5, £2, and £1, for each variety.
J. R. PEARSON, Chilwell, Notts.

GOLD MEDAL for BEGONIAS.—Our unrivalled Collection is now in great beauty. Those bedded out are flowering in great profusion. Inspection invited any week day. Visitors can select their colours from thousands.
JOHN LAING and CO., Nurseries, Forest Hill, S.E.

To Amateur Strawberry Growers.

RUNNERS, strong and well rooted, are now ready, from H. de Thury, President, Sir J. Paxton, and British Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants, post-free, 1s.
Manual on Strawberry Culture, 6d.
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Mr. GUESS, Gardener, Lillie Terrace, Kensington, W.

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RODGER, McCLELLAND and CO. have to offer large quantities of 1 and 2 years, of various sizes. Samples and prices on application.
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GERMAN LILIES OF THE VALLEY.—Single Crowns, extra strong, may be had of
CHARLES PUTTFARKEN, Bradford, Yorkshire.

To the Trade.

CYCLAMEN SEED, in separate colours or mixed. Price per ounce or pound, on application.
J. and G. LOWE, Uxbridge.

To the Trade.

HURST and SON have now received their first importations of Guernsey and Belladonna LILIES, in fine condition. Price on application.
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PROTHEROE and MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

GUERNSEY LILIES, in splendid condition, 7s. 6d. per dozen; BELLADONNA LILIES, 6s. per dozen. HOOPER and CO., Covent Garden, W.C.

HYACINTHS, CROCUS, TULIPS, NARCISSUS, and all DUTCH FLOWERING BULBS. Priced descriptive CATALOGUE, with cultural notes, post-free.
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CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland.

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REQUIRING

GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

LILY OF THE VALLEY, finest strong crowns for forcing at 45s. per 1000. AZALEAS with buds, in nice healthy plants for the market. CAMELLIAS, nice plants at lowest rates. Orders requested at once. Prices on application to
ROBERT NEUMANN, The Nurseries, Erfurt.

SEEDLINGS.—Immense quantities of Thorns, Scotch Firs, Alder, Birch, &c., for transplanting and in strong plants. Apply to
Messrs. LEVAVASSEUR and SONS, Nurserymen, Ussy, Calvados, France.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale
THOMAS RIVERS and SON, Sawbridgeworth, Herts.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
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CHOICE FERNS.—Gleichenia dichotoma, 3s. 6d. each, and upwards; Gleichenia dicarpa and speluncæ, 5s. each, and upwards. Special LIST of other Ferns on application.
W. and J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

STRAWBERRY RUNNERS, in pots and from open ground. A large and fine Stock now ready.
CATALOGUES on application.
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CAMELLIA and AZALEA STOCKS.—A few thousands, in small pots, fit for immediate working, for Sale.
CHARLES B. SAUNDERS, Nurseryman, Jersey.

JAMES LEWIS, Newtown Nursery, Malvern, has about 3000 POLYPODIUM CAMBRICUM and OMNILACERUM, extra good, in 3-inch pots, 12s. per dozen. Cheaper in large quantities.

AURICULAS of every conceivable beautiful colour, including Violet, Primrose, Maroon, Azure, Bronze, Blue, and Fancy, selected, 1s. each, 01 9s. per dozen. Strong Seedlings (ready to bloom) from the above, 1s. 6d. per dozen, Carriage free.
R. WOOTTON, Kegworth, Derby.

WANTED, CUTTINGS of Tricolor, Bronze, Silver-edged, and other GERANIUMS. State lowest price for cash, to
THOMAS MILNER and SON, 102, Godwin Street, Bradford, Yorkshire.

WANTED, CUTTINGS of White and Pink coloured, Silver Variegated, Bronze and Tricolor GERANIUMS. State lowest price per 1000, to
WILLIAM MILES, West Brighton Nurseries, Cliftonville, Sussex.

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EARLY WHITE ROMAN HYACINTHS. Fine white blossoms, deliciously fragrant.

EARLY DOUBLE ROMAN NARCISSUS.

EARLY PAPER-WHITE NARCISSUS.

DOUBLE SNOWDROPS.

SINGLE SNOWDROPS.

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SUTTON'S AUTUMN CATALOGUE for 1878, one of the most practical works on the cultivation of Flower Roots yet published. Price 6d. post-free, or gratis to customers.

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Deutzia gracilis and Cupressus macrocarpa.

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Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH and CO. (established 1822), Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the world.

SNOWDROPS, CROCUSES (Single), LILIES OF THE VALLEY, and WILD FLOWERS large quantities for a Wood. State lowest cash price, to
Mr. T. GRUNDY, 12, Prince of Wales Terrace, Scarborough.

To the Trade.

C. WHITEHOUSE, Brereton Nursery, Rugeley, has to offer nice, straight, young, healthy HOLLIES, two years transplanted, good fibrous roots, 12 to 20 inches, most of them suitable for working, at 8s. 6d. per 100. Also fine one-year Seedling Hollies, at 3s. 6d. per 1000, for Cash. Now is a fine time to plant them.

J. LINDEN'S Exotic Nurseries, Ghent, Belgium.—The CATALOGUE of CAMELLIAS, AZALEAS, RHODODENDRONS, PALMS, NEW PLANTS, and WHOLESALE LIST of PALMS, is now ready, and will be sent on application to J. L. as above, or to Messrs. R. SILBERRAD and SON, 25, Harp Lane, Great Tower Street, London, E.C.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

Bulbs for the Season.

CHARLES TURNER'S consignments of the above have arrived in fine condition. The roots are remarkably sound, and early orders are respectfully solicited.
CATALOGUES post-free on application.
The Royal Nurseries, Slough.

To the Trade Only.

DUTCH BULBS at DUTCH PRICES.—Hyacinths, Tulips, Crocus, Narcissus, Begonias, Christmas Roses, Gloxinias, Caladiums, Novelties in Bulbs and Roots, Anemone fulgens, Snowdrops, &c. Quality extra. Prices low. Catalogue on application to
F. SANDER and CO., Seed Growers, St. Albans.

CYCLAMENS, very cheap, 2s. per dozen; extra strong, 3s. per dozen, 12s. and 18s. per 100. These are all good flowering bulbs, from 1 inch to 2½ inches in diameter, starting into growth with good roots. Sent carefully packed out of pots.
J. CORNHILL, Byfleet, near Weybridge Station, Surrey.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

BEGONIA SEED—Saved from exceedingly beautiful varieties of the handsome-flowered tuberous-rooted section. The flowers have been carefully fertilised, so that splendid new kinds may be expected from this seed. 1s. 6d. and 2s. 6d. per packet.
PRIMULA, CINERARIA, and CALCEOLARIA, from Prize Strains, the best that can be purchased, each at 1s. 6d. and 2s. 6d. per packet
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

The New

PRIMULA SINENSIS COMPACTA GRANDIFLORA.—The finest and largest new double white-fringed Primrose extant, of exceedingly sturdy and robust habit.
Opinion of Mr. WILLS:—"*The best white flower for bouquets.*"
Price £6 6s. per dozen.
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Auction Mart, Tokenhouse Yard, London, E.C.
Opposite the Bank of England.

GREAT UNRESERVED SALES of DUTCH FLOWER ROOTS, of the finest quality, consisting of the choicest varieties of double and single HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, SNOWDROPS, &c., fitted to suit the trade and private buyers, EVERY MONDAY, commencing September 9, and ending December 9, by

MESSRS. PROTHEROE AND MORRIS, Horticultural Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B. Messrs. P. & M. will have great pleasure in executing commissions for Gentlemen who cannot attend the Sales.

Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex.—Three Days Sale.

EXTENSIVE ANNUAL SALE of WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, on WEDNESDAY, September 11, and TWO FOLLOWING DAYS, at 11 for 12 o'Clock precisely each day, 25,000 WINTER-BLOOMING HEATHS, remarkably well grown, and including about 8000 hyemalis, 4000 gracilis, 500 Wilmoreana, large quantities of grandinosa, Cavendishii, ventricosa, and other excellent varieties; 4000 Epacris of the choicest kinds, 2000 Cyclamen persicum, 3000 Genista fragrans, Bouvardias and Gardenias of sorts, Lapagerias, Azalea indica, Tea-scented and other Roses, Solanum capsicastrum in berry, a quantity of miscellaneous Greenhouse Plants, including strong flowering Chrysanthemums; also about 20,000 healthy young Erica hyemalis, and 2500 strong Epacris in small pots for growing on.

May now be viewed; Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Brunswick Nursery, Tottenham, N.

GREAT TRADE SALE of STOVE and GREENHOUSE PLANTS, WINTER-BLOOMING HEATHS, &c. To commence punctually at 11 o'Clock, there being upwards of 900 lots to get through.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Maller to SELL by AUCTION, without reserve, on the Premises, on THURSDAY, September 19, at 11 o'Clock to the minute, an immense quantity of unusually well-grown plants, consisting of 15,000 WINTER-BLOOMING HEATHS in the most forward condition, promising a profusion of flowers, in 60, 48, and 32-pots, including 3500 beautifully-grown hyemalis, 3000 gracilis, 500 caffra, 1500 Wilmoreana, large quantities of propensa, erecta, hybrida, assurgens, 6000 remarkably well-coloured Solanum capsicastrum, 500 Hydrangea Thomas Hogg, fine Camellias and Azalea indica, set with bloom-buds; 1000 extra fine Tree Carnations, 3000 Bouvardias of sorts, 500 Acacia armata, 2000 well furnished Adiantum cuneatum, 200 Ficus elastica, 3000 Poinsettias, 300 Daphne indica rubra, 1000 exceedingly fine Cyclamens, 1000 Genistas, 2000 Grevillea robusta, 500 Euphorbia jacquiniflora, Clematises of sorts, 300 double Primulas, 200 strong Vines, 2000 Cinerarias, 1000 Dracænas, Palms, 500 Gardenia intermedia, &c.

May be viewed any day prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C.

Burnt Ash Nursery, Lee, Kent, S.E.

TENTH SALE.

To the Trade and Public generally.—IMPORTANT SALE of GREENHOUSE PLANTS, WINTER BLOOMING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. B. Maller to SELL by AUCTION, on the Premises, on TUESDAY, September 17, at 11 o'Clock punctually, in consequence of the unusually large number of lots, an extensive and valuable COLLECTION of GREENHOUSE PLANTS, including choice Palms, Dracænas, Camellias, and Azaleas, 1000 Grevillea robusta, 20,000 winter-blooming Heaths, which for vigorous growth and profusion of bloom-buds are the unsurpassed in the trade, consisting of 12,000 hyemalis, also Wilmoreana, gracilis, autumnalis, assurgens, melanthera grandinosa, caffra, ventricosa, and others; 8000 Erica hyemalis, thriving young stock, in large and small 60 pots; also thousands of other varieties, promising young stuff, worthy the attention of the trade; 3000 Solanum capsicastrum in berry; 500 Cyperus, 700 Cyclamen persicum, 1000 Bouvardia longiflora, Myrtles, Aralias, Cytissus, Tea and other Roses, Acacias, Ardisias, Hoyas, Variegated Ivies, and a quantity of other miscellaneous plants in pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; also at the Seed-shop, Granville Terrace, Lewisham, S.E.; and of the Auctioneers, 98, Gracechurch Street, E.C.

Forthcoming Sale by

MESSRS. PROTHEROE AND MORRIS. —SEPTEMBER 26.—EXOTIC NURSERY, TOOTING, S.W., by order of Mr. R. Parker, Sale of GREENHOUSE PLANTS, &c.

Dutch Flower Roots, for Present Planting and Spring Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during September, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Odontoglossum vexillarium.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Gardcn, on TUESDAY, September 10, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., 300 Plants of ODONTOGLOSSUM VEXILLARIUM, many of them extra strong; strong plants of CATTLEYA GIGAS, CATTLEYA LODDIGESI, or HARRISONIÆ, BURLINGTONIAS, LÆLIA PERRINI, ONCIDIUM-SARCODES, strong plants, many with flower-spikes; MESOSPINIDIUM VULCANICUM, and other choice ORCHIDS, just received by steamers *Nile*, *Tagus*, and *Potosi*. At the same time will be offered 200 growing plants of ODONTOGLOSSUM ALEXANDRÆ, two plants of MASDEVALLIA BELLA, described by Professor Reichenbach in *Gardeners' Chronicle*, June 8; MASDEVALLIA HYPODISCUS, described in *Gardeners' Chronicle*, August 24; established plants of PHALÆNOPSIS SCHILLERIANA, P. AMABILIS, P. LUDDEMANNIANA, CATTLEYA DOWIANA, ODONTOGLOSSUM ROEZLII, O. SCHLEIPERIANUM.

On view morning of Sale, and Catalogues had.

Odontoglossum pardinum.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 12, at half-past 12 o'Clock precisely, an importation of the New ODONTOGLOSSUM EDWARDI, in extra good health and freely breaking pieces; also a quantity of ODONTOGLOSSUM HALLII, many of them in large masses, and all in finest condition; quantity of the beautiful MAXILLARIA GRANDIFLORA in unusually fine masses; also ONCIDIUM MACRANTHUM, ODONTOGLOSSUM CIRRHOSUM, ONCIDIUM UNGUICULATUM, ODONTOGLOSSUM CITROSUM ROSEUM; also, by order of Mr. J. Watson, some plants in flower of ONCIDIUM TIGRINUM, and other cool ORCHIDS; also some established Plants of CATTLEYA SCHILLERIANA, C. MARGINATA, COCOS WEDDELLIANA, GLAZIOVA INSIGNIS, PRITCHARDIA FILIFERA.

On view the morning of Sale, and Catalogues had.

Arabin House, High Beech, Essex.

100 Specimen CAMELLIAS, AZALEAS; 200 PINES, ORCHIDS, FERNS; about 80 dozen choice GREENHOUSE, STOVE, and other PLANTS; a capital Brown COB, Harness, DOG-CART, Reversible Stanhope PHAETON, CABRIOLET, HARNESS; 2 COWS, HAY and GARDEN IMPLEMENTS; also the FURNITURE and GENERAL EFFECTS of the Residence.

MESSRS. DEBENHAM, TEWSON AND FARMER will SELL by AUCTION, on the Premises as above, on THURSDAY, September 12, at 11 for 12 o'Clock. On view Wednesday.

Catalogues on the Premises, and of the AUCTIONEERS, 80, Cheapside, E.C.

To Gentlemen, Gardeners, and Others.

TO BE LET, from Michaelmas next, the Business of a MARKET GARDENER, SEEDSMAN, and FLORIST, with House and 2 Acres of LAND, with Vinery, well stocked with Fruit trees; has been carried on for the last 17 years. There is also a good Jobbing Trade in connection with it.—For particulars apply to

Mr. BELLWOOD, Carnatic Lodge Garden, Filey, near Scarborough.

TO BE DISPOSED OF, the TENANCY, STOCK, and GOODWILL of a PUBLIC HOUSE and 2 Acres of Garden Ground, with Greenhouse and Vinery, 2½ miles from London.—Apply to SMITH and ROBINSON, Estate Agents, Hemel Hempstead, Herts.

West of England.—(4446.)

Situate on the confines of an important and most thriving town.

FOR DISPOSAL, an extensive and well-known NURSERY, SEED, and FLORIST'S BUSINESS, which has been in existence for upwards of a century and a half. The Grounds cover an area of about 30 acres, and comprise a convenient detached Dwelling-house, Seed-shop, several extensive ranges of Glass, containing altogether about 55,000 feet super, fitted with all the modern appliances, and offering unusual facilities for turning out enormous quantities of Stock; commodious Outbuildings, and every requisite for doing a very large Trade. Well selected and beautifully grown stock. Extremely productive soil. A certain portion of the Stock would have to be taken by valuation, but the Vendor would be prepared to Sell a considerable quantity by Auction. No charge for Goodwill. Satisfactory reasons can be given for relinquishing the business.

Rent and further particulars may be had from Messrs. PROTHEROE AND MORRIS, Horticultural Auctioneers and Agents, 98, Gracechurch Street, London, E.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained gratis at 98, Gracechurch Street, E.C.

WANTED, about 2 acres of good sheltered GARDEN LAND, with a House, as a Site for the proposed Public Experimental Garden. Must be within easy access of London.—Address

Mr. LASTON, 53, Taverstock Street, Bedford.

LIBERIAN COFFEE.—Strong healthy Plants and live Seed.—For particulars, apply F. R. KINGHORN, Sheen Nursery, Richmond.

To the Trade.

NEW ENGLISH SOWING RAPE SEED.

H. AND F. SHARPE have just secured fine samples of the above Seed, and are prepared to make special offers to the Trade at reduced prices, which may be had (with sample) on application.

Fine Samples WHITE MUSTARD. Prices (with samples) may be had on application.

Seed Growing Establishment, Wisbech.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

FOR SALE, Green EUONYMUS, at 30s., 40s., and 50s. per 100; also AUCUBAS, ARBOR-VITÆ, CUPRESSUS, RETINOSPORAS. Variegated VINCA, all in first-class condition, suitable for pots; together with a GENERAL NURSERY STOCK.

J. B. BUTTERFIELD, Nurseries, Baker Street, Enfield, Middlesex.

To the Trade.

ARALIA SIEBOLDII, very fine plants, in small 48 pots, at 6s. per dozen, or 40s. per 100.

CLEMATIS JACKMANNI, and other fine kinds, at 6os. per 100.

WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.

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For further information, address The CONTINENTAL DEPARTMENT, Liverpool Street Station, London, E.C.

To the Trade.

J. MALLER, Brunswick Nursery, Tottenham, respectfully invites an inspection of his WINTER-BLOOMING and other PLANTS, which are in the best possible condition, mostly in 48-pots, fit for immediate sale, comprising many thousands of Ericas, Poinsettias, Grevilleas, Genistas, Acacias, Cyclamen of a fine strain, extra strong; Adiantum cuneatum and others, Bouvardias, Tree Carnations, Euphorbia jacquiniflora, Deutzia gracilis, Camellias and Azaleas well set with buds, large quantity of Solanums in all sizes, full of coloured berries; Palms, Ficus elastica, &c.

The ANNUAL SALE will take place on THURSDAY, September 19. Frequent trains from Liverpool Street, Great Eastern Railway, to White Hart Lane Station, which adjoins the Nursery.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

Established in 1838 for the Relief of Aged and Distressed Gardeners, their Widows, and Orphans engaged in Horticultural pursuits, by means of Pensions which are granted for Life.

£16 per Annum to Men; £12 per Annum to Women.

☞ The Annual Subscription is £1 1s.; that for Life, £10 10s., which entitles the Donor to One Vote at each Election of Pensioners.

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During the time the Society has been in existence it has relieved 252 persons, at a cost of upwards of £22,780, and it has now upon its funds 77 Pensioners.

The Funded Stock of the Society is £17,300, standing in the names of the Trustees, in the Three per Cent. Consols.

Special attention is requested to the following Rule (No 6) which enacts:—

"That none but those who have subscribed for fifteen years consecutively shall be considered eligible while a sufficient number of such persons shall be upon the list, the object being to give a preference to those persons who have been contributing to assist others; so that if the funds should enable the Committee to call for an election of five persons and there were two or three candidates who had been subscribing fifteen years, such persons would be appointed Pensioners, without an election, in preference to the other Candidates."

Treasurer:—ROBERT WRENCH, Esq., London Bridge, E.C.

Secretary:—EDWARD R. CUTLER, 14, Tavistock Row W.C.

Gardeners' Chronicle Office,
41, Wellington Street, W.C., Sept. 7, 1878.

W. RICHARDS begs to acknowledge the following Donations for the benefit of the above Fund:—

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The Pottery (the Works are little more than twelve months old) is already famed for growing healthy plants.

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ROSES, Tea and Noisette, 12s. per dozen; Queen of Bedders, 12s. per dozen; Maréchal Niel, 2os. and 18s. per dozen.
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Package will be 1s. on each dozen.
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LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly a foot long. 7s. 6d.
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Many Thousands of ERICA HYEMALIS, of flowering size.
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Many Thousands of AZALEA INDICA, in variety.
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BEAUTIFUL FLOWERS
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EARLY WHITE ROMAN HYACINTHS.
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Our stock being very limited, we are offering this Pine-apple now, in good healthy plants, at 42*s.* each, three for 105*s.*

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WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To the Trade.

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100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
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100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
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In the *Revue de l'Horticulture Belge et Etrangère* of April 1, 1877, Mr. Edward Pynaert gives a coloured plate of this beautiful perennial, and says:—"The Lamium maculatum aureum has about the same colour, the same regular growth, as the Pyrethrum parthenifolium aureum, which is generally used for carpet bedding, but is to be preferred to Pyrethrum, because of its being perfectly hardy and keeping its beautiful foliage in winter like in summer."

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Antennaria tomentosa, 10*s.* per 100.	Sedum, in many sorts, 25*s.* per 100.
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CYCLAMEN PERSICUM FL. ROSEO, strong roots full of flower-buds, all grown in pots, 25*s.* to 67*s.* per 100.

Orders to the amount of £2 free throughout Great Britain.

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100 AZALEAS, Indian, named best sorts, with flower-buds, £4, £5, £6, £8, £12.
100 AZALEAS, Indian, Stocks, 18*s.*
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100 AZALEAS, hardy, mollis (Van Houtte's), named, eighteen sorts, with flower-buds, £8, £12, £15, £20
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100 CAMELLIAS, named, best sorts, without flower-buds, £4, £5, £6, £12.
100 CAMELLIAS, Stocks, £1, £1 10*s.*
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100 CHIMONANTHUS FRAGRANS, 1-yr. seedlings, £1.
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12 CHIMONANTHUS FRAGRANS, 1-yr. cuttings, 12*s.*
LAURUS NOBILIS, the finest in Belgium.

Rhododendrons, Viburnum Tinus, Roses, Phormiums, Pæonies, Myrthus flore-plena, Ilex, Thuja aurea, Thuja semper-aurea, and Araucaria Joseph Napoleon Baumann, the finest of all.

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STRAWBERRIES.—Strong plants of the leading sorts can be supplied from the open ground after July 15, at 5*s.* per 100. See Descriptive FRUIT LIST, to be had on application.

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ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
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Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

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PEAT, Brown Fibrous, superior quality for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16*s.* per ton, or £4 10*s.* per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.

Mr. W. TARRY, Bailiff, Bagshot, Surrey.

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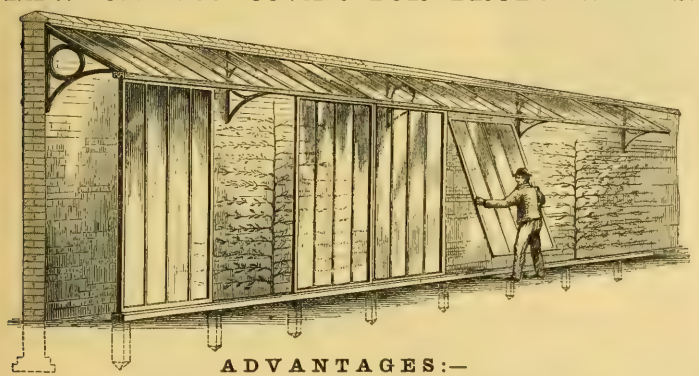
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On view morning of Sale, and Catalogues had.

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Double Snowdrops (extra large selected)	28 0	3 0	0 6
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"Hyacinths formed the most important feature of the show, the principal exhibitor being Mr. William Paul, of Waltham Cross, who was far in advance of any other in the size and beauty of the noble spikes which he placed in competition."—*Journal of Horticulture.*

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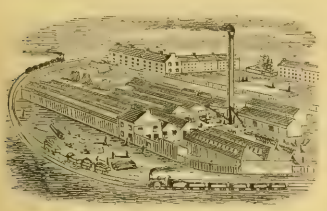
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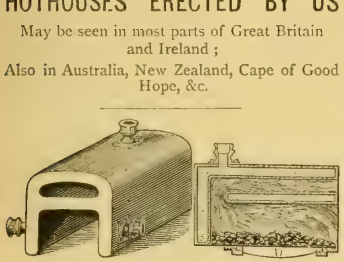
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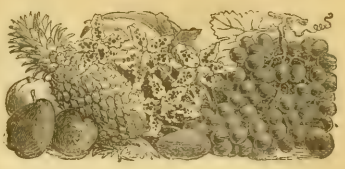
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THE QUEEN'S SEEDSMEN, READING.



SATURDAY, SEPTEMBER 7, 1878.

DUTCH BULBS.

IN these days, when bulbs are grown by the hundreds of acres and imported into this country by the tens of thousands, a healthier state of things exists than in olden times, when they were simply made the means of gambling transactions on a large scale.

How it was that Holland became the head-centre of bulb-culture we do not know. We do know that there are many places in England where the natural conditions are just as favourable for bulb culture, if not more so, than they are in Holland. We know, too, that in Belgium bulb-culture is very successfully practised by Louis Van Houtte, but Belgium and Holland are physically pretty much the same. On our own shores many years ago the late Mr. Masters grew Hyacinths for market at least equal to average Dutch samples. But the public would not buy them: Dutch bulbs they wanted, and Dutch bulbs they would have, and the Kentish roots could not be grown at a profit, so difficult is it to alter established custom in trade matters. We suppose no one will hesitate to believe that the conditions of success, so far as they depend on climate or soil, may be just as well obtained in Kent or Lincolnshire as on the opposite coast.

In our volume for 1877, pp. 526, 559, vol. vii., we gave a full account of the way in which bulbs are grown for trade purposes near Haarlem, the great centre of the bulb trade. Round that pleasant city may be seen in spring the particolored perfume-laden fields, constituting a sight of singular beauty. In order not to weaken the bulbs the flowering spikes are usually cut off before maturation, and so the traveller sees heaps upon heaps of Hyacinths piled up as so much rubbish. We all know of the boy who expected to find London streets paved with gold: many of us have in a measure experienced such an expectation—to be grievously disillusioned in course of time; but in Holland, at least about Haarlem, it is a literal fact that the rubbish-heaps consist of piles of Hyacinth flowers. Canal-boats are weighed down with them, children troop along with handfuls, apronfuls, basketfuls, every window in the place is full of them. It is some matter of surprise that the practical Dutch do not turn these flowers to advantage in the manufacture of perfume. Were the Hyacinth in equal abundance near Nice we imagine the flower-farmers would speedily turn them to account in his way.

But we have told all this before, and need not repeat an old story. Suffice it to say here that the Hyacinths, and also the Tulips, are grown near to the sea, and in light sandy soil most copiously enriched with cow-dung. The method of propagation, the raising of new varieties, all these matters have been described and illustrated in the article above referred to. The prodigious quantities of the bulbs, the vast warehouses, the comfortable homesteads, and complacent proprietors, all tell a tale of thriving trade and commercial prosperity, altogether a different state of things from the time when bulb-gambling was the fashion. At that time bulbs were sold by weight. An old Dutch book that we have seen in the rich library of M. Krelage, of Haarlem, has a curious engraving representing these transactions, buyers and sellers

weighing their bulbs in a large tent in the shape of a fool's-cap, gamblers all around, and poor Flora, unheeded and disregarded, wringing her hands in despair in the corner. This is a sign at any rate that some people even then satirised and lamented the follies of the hour. To what an extent they were carried in the seventeenth century (1634—1637) may be judged from the following extract, with which we close this note :—

"A single root of the Tulip called Vice Roy was exchanged for two lasts of Wheat, four of Rye, four fat oxen, three fat swine, twelve sheep, two hogsheads of wine, four tuns of beer, two tons of butter, one thousand pounds of cheese, a complete bed, a suit of clothes, and a silver beaker ; altogether of the value of two thousand five hundred florins, or about two hundred and twenty guineas. A part only of Admiral Van der Eyk cost one thousand six hundred florins, and a portion of Admiral Liefken was sold for four thousand four hundred florins. It once happened that there were only two roots of the kind called Semper Augustus, the one at Haarlem, the other at Amsterdam, and the possessor of one of these resolved to become the sole proprietor—purchased the other for four thousand six hundred florins, together with a carriage and pair of horses. Other sorts were sold so high as seven thousand florins. . . . In every town some tavern was appointed as an exchange where high and low, rich and poor all traded in Tulips, and confirmed their bargains with the most expensive entertainments. But no one wished to obtain actual possession of the flowers, and during the continuance of the Tulipomania one speculator often paid large sums for plants which he never meant to receive, while another entered into contracts for the delivery of roots which he never possessed. . . . It was thus a mere gambling transaction, in which the difference between the market prices at two stated periods was paid instead of the article itself being delivered, and in fact exactly resembled those operations on the Stock Exchange called time bargains. . . . At length the bubble burst : no new adventurers appearing in the market, the buyers took the alarm, the value of Tulips fell with more rapidity than it had risen ; the sellers then offered to deliver the roots at the prices agreed on, but the purchasers had no desire to receive them at any rate, and refused to fulfil their contracts. The States of Holland were at last obliged to interfere : a compromise was effected between the parties ; and as in the outset nearly all were winners, so in the winding up very few escaped without loss." *Beckman's "History of Inventions."*

New Garden Plants.

ZYGOPETALUM OBTUSATUM, *n. sp.**

This is an unexpected novelty, a neighbour of the old Zygopetalum maxillare, Lodd., which has stood without a companion for nearly half a century. It has a longer laxer raceme, blunt bracts, narrower longer blunter sepals and petals, green with narrow transverse brown bars and a very light violet lip with a more purplish retuse lower callus. The green column has a brown round spot on each side of the base. I have to thank Sir Trevor Lawrence for this curious novelty. *H. G. Rchb. f.*

DENDROBIUM BURBIDGEI, *n. sp.*†

This is a very curious Dendrobe, of the Antennata group of the section Stachyobia. It is near old D. minax, but is smaller in all parts, has the petals much broader at their ends, the nervation of the anterior part of the lip totally different (all nerves nearly contiguous, instead of being widely distant in D. minax), the callus far more developed, the leaves smaller and acute. Then the flower has quite a different colour, being not purplish but decidedly yellowish, and the lips probably whitish. It is one of Mr. Burbidge's discoveries in the vast Madaic territory, and it may bear his name in future after having been a long time in anonymous darkness. Mr. Burbidge praises its most profuse flowering, having seen six to seven flowering spikes, all bearing fresh flowers on one single stem. Those flowers are said to be wonderfully persistent. Some were seen quite fresh on the fruits, which latter were of the size of pigeon-eggs. The ripe fruit itself is stated to be very ornamental, being of a clear soft yellow colour, and as seen at a height on trees it is mistakable for a flower. The materials for this note were sent by Messrs. Veitch. *H. G. Rchb. f.*

SARCANTHUS MIRABILIS, *n. sp.**

This is not much as a decorative Orchid. The ligulate leaves are 0.14 m. and 0.2 broad. The panicle at hand is 0.44 m. high, slender, bearing four short distant branches, which stand upright, are racemose, with small yellowish Sarcanthus flowers, the spur purplish, with some purple on the laciniæ of the lip. It is, however, very interesting for organographic purposes, since its pollen apparatus is a climax of the apparatus of Sarcanthus Parishii, Hook., itself regarded as very interesting. There the androclinium is changed in an oblong, erect body, over which the caudicule is bent as a tendon over a condyle. The caudicule itself has a bifid auxiliary apparatus to bear the bluish (!) pollinia. It is a great curiosity, which flowered for the first time, I believe, in Mr. Hobart's garden, Etherley Lodge, Darlington, grown by Mr. Levy Hartley. Though I felt quite pleased with it, I regarded my scanty materials, obtained twice, once from Messrs. Editors of *Gardeners' Chronicle*, as too unsatisfactory for description. We have quite enough of the numerous riddles which arise from the false ambition of writers who prefer adding their dear name to unsatisfactory descriptions, and I have hundreds and hundreds of Orchids kept unpublished, since the materials are not sufficient. I feel now exceedingly satisfied that I have finally obtained good materials. The origin, however, is unknown to me. It may be British India—perhaps Burmah. *H. G. Rchb. f.*

ERICA OBBATA.

"I DON'T like Heaths," somebody says ; "they are dumpy, formal things, devoid of all the elegance of growth possessed by many plants, and as trained for exhibition they are hideous." As to the first objection, it would apply with equal force to a very great number of subjects, even hardy, both large and small, when placed under the most favourable conditions required for their natural development ; the Rhododendron, the Kalmia, the Ghent Azalea, and many others amongst favourite flowering shrubs, may be instanced ; and as to form in the individual flowers, Heaths are elegance itself compared with the bloom of the Rose, of which it is almost treason even to hint at anything disparaging. I draw this comparison simply with a view to suggest the advisability of consistency in our estimation of beauty in blooming plants. The same principle holds good, and might be carried much further with respect to the arborescent forms of vegetable life that are made use of to adorn the cultivated landscape.

As to the training of Heaths as they are usually seen on the exhibition stage, like everything else necessary to be done at all, it may be carried too far, and frequently is ; but when plants such as Heaths have to be conveyed for even a comparatively short distance, it is requisite to secure each bunch of flowers in its place—that is, in the position it would have been in if the plant had been growing naturally in the open air. I have gone so far simply to enter a protest against the one-sided ideas often expressed against this, one of the most beautiful groups of flowering plants we possess, and which, when even grown with a view to being used for greenhouse decoration, independent of their own attractions, contrast admirably with the many less formal subjects associated with them, and for which alone it would be worth while to cultivate them.

In the filling of our plant-houses, as in the selection of the subjects wherewith to embellish the broad landscape, it is essential to introduce plants of the most opposite habit of growth. Speaking more particularly of the group of plants to which the subject illustrated belongs (p. 301, fig. 54), and which is one of the finest, if not the finest in existence, there are few, if any, more deserving of cultivation, for with a judicious selection it may be had in flower all the year round in every tint and shade of colour, from pure white to the deepest crimson, many lasting long in flower. The variety here represented (fig. 54) is of a beautiful pearly white, slightly tinted with pink round the extremity of the tube. The individual flowers are the largest of any, and when the bloom is produced in profusion from a plant in strong rude health, some of the shoots bearing on their points as many as a dozen of their large waxy tubes—as did the specimen figured at the time it was photographed—nothing could be more beautiful in the way of Heaths. The plant was about 4½ feet through by 3 feet high, and, as will be seen, full of flowers and healthy foliage down to the rim of the pot. The latter I hold as an essential to all naturally bushy hard-wooded plants cultivated in pots.

Heaths have unfortunately got a bad character for being catchy subjects to grow ; doubtless they are not in a cultivated state so long-lived as some things, neither will they submit to having their requirements neglected, especially as to water—that needed to-day must be supplied to-day, to-morrow possibly may be too late. According to the same calculation they must not have water given to-day simply because they might want it to-morrow or the next day. Light and air they must also have in abundance, or they become a prey to mildew, which quickly establishes itself on weak, insufficiently matured foliage ; neither must they have more fire-heat than necessary to keep out frost and dispel damp. Extremes of any kind they do not like, nor will long bear. *T. Baines.*

CULTURE OF THE HYACINTH FOR EXHIBITION, ETC.

THE lists of what are usually termed Dutch bulbs are now coming in, and those interested in their culture will very speedily be making their purchases. The Hyacinth may truly be included amongst the old-fashioned flowers. It has been cultivated for ages, and yet one would almost be safe in saying that never was the Hyacinth so universally cultivated as it is now. In the gardens of the nobility and gentry they are grown by hundreds or thousands, while the amateur of small means, the city clerk or shopkeeper, even the cottager, cultivates a dozen or two dozens. Then as an exhibition flower there is no other so popular in the spring months. In London the Royal Botanic and the Royal Horticultural Societies have vied with each other to produce the best display about the end of March. And as the Hyacinth show is the opening show of the year, it is always looked forward to with pleasure ; it seems to say to us "Winter is gone, the time for the singing of the birds hath come. All Nature wears a face of beauty, and is animated with a spirit of joy." The large provincial towns are also becoming alive to the value of Hyacinth shows. The new Town Hall at Manchester was crowded in March last with a most select company, to admire a grand display in that noble building. Newcastle-upon-Tyne may also be mentioned as having an annual Hyacinth exhibition, at which amateurs compete more numerously than they do at the metropolitan shows ; and the trade growers likewise furnish a grand contingent.

Having been a successful exhibitor for several years, I would like to give the result of my practice in growing the Hyacinth for exhibition—premising that the same method of culture should be followed to obtain the best results, even if it is not intended to exhibit them. Preparation of the soil is the first step. I prepare the compost in July or August, although one of the trade growers told me that he attended to this in May. I take two barrow-loads of turfy loam, and chop it up, add to it one load of leaf-mould, one of sand, and one of rotten cow-manure. This compost is well mixed together, and put into a dry place until it is time to use it. The next consideration is to obtain the bulbs, and they can be had at from 3*s.* per dozen to 30*s.* ; or, if the new varieties are wanted, a higher price still. Those unacquainted with the flower would do best to purchase from a respectable nurseryman, pay so much per dozen, and leave the matter in his hands. A selection of very good sorts can be purchased at 12*s.* per dozen ; it would not include such recently introduced varieties as Vuurbaak, King of the Blues, La Grandesse, &c. ; but if a root or two of such sorts were wanted, they could be bought separately.

When the roots are received I take them out of the bag or box. Each root or variety is, of course, wrapped up separately in a bag or paper. I lay them out in a flat box, only one layer deep, and just cover with the Buckwheat chaff. Some trade catalogues that I have had recommended that the bulbs should

* *Zygopetalum obtusatum*, n. sp.—Affine Zygopetalo maxillari, Lodd. : racemo longo laxo, bracteis obtusis ovaria pedicellata plus tertia æqantibus ; sepalis tepalisque angustioribus, obtuse acutiusculis ; labelli lamina transverse rhombea obtusangula, antice minute medio emarginata, callo antico retuso abrupto humilis Reliqua Zygopetalis maxillaris, Lodd. sepala et tepala viridia anguste brunneo fasciata ; labellum pallide violaceum ; callus intensius violaceus humilis. Pseudobulbum et folia non vidi. Coll. illa Trevor Lawrence. *H. G. Rchb. f.*

† *Dendrobium* (*Stachyobium Antennata*) *Burbidgei*, n. sp. Aff. D. minaci, Rchb. f. Foliis oblongis acutis ; pedunculis porrectis pluribus, mento acutangulo parvo ; sepalis triangulis acutis, tepalis linearibus acutis apicem versus valde dilatatis ; labelli tripartiti partitionibus lateralibus triangulis obtusis isthmo angustissimo longo ; partitione antice valde transversa utrinque oblongo ligulata obtusa medio antice cum apiculo ; nervis lateralibus valde approximatis carinis carnosis quinque latis confluentibus in acumen a disco interpartitiones lateralis in discum partitionis anticæ. Ins. Sondiac.

* *Sarcanthus mirabilis*, n. sp.—Aff. Sarcantho Parishii, Hook : foliis ligulatis apice bifidis, laciniis ligulatis obtusis ; panicula brachyclada elongata gracili ramulis apice racemosis ; bracteis minutissimis ; sepalis oblongis acutis ; sepalo impari dorso gibberoso fornicato ; tepalis ligulatis ; labello trifido, laciniis lateralibus oblongis acutis brevibus erectis ; lacinia media triangula porrecta ; calcari curvo cylindrato conico sulcato, septato ; callo oblongo apice utrinque divergenti cornuto ; basi medio emarginato subcolumna, androclinio umboniformi compreso ; caudicula cum apparatu insidente bifido pollinia cyanea ferente. *H. G. Rchb. f.*



CHOICE HYACINTHS.

not be taken from the parcel, but I have found several roots to be injured by being packed tightly together in a close mass. The packing is sometimes musty, and this causes mould to spread on the roots; it does not do so in an open shallow box, if it is placed in an airy room. The time of potting and the size of the pots must be regulated by the date at which the flowers are wanted. The roots to flower in January and February should be potted early in September, and for succession towards the end of that month and early in October. Those roots that are intended for exhibition I pot about the last week in October. For the early flowering roots the pots should be about 4½ or 5 inches diameter inside measure, and for exhibition 6 inches. The compost at the time of potting should be rather dry; never use a wet compost. I do not put in very much drainage for Hyacinths. One large bit of potsherd over the bottom hole and a few small pieces over it; but the drainage should be kept free by having some of the fibre from the turfy loam placed over it. Press the soil in moderately firm, and make a hole large enough for the bulb with the fingers.

It is a common but mistaken practice to fill the pot with mould, and then to press the bulb down with the fingers. This makes the compost firmest just under the bulb, and it is very likely that it will be thrown out of the soil when the roots are emitted. I make the soil firmer round the bulb than it is underneath it; and when the operation is finished the top of the bulb should just show above the soil. The pots should be placed out-of-doors in an open place on a hard bottom of ashes, and be covered to the depth of 2 or 3 inches over the surface of the pots with cocoa-nut fibre refuse, spent tan, or leaf-mould. It is a great mistake to place the pots under the stage of a greenhouse, as is sometimes done; the water running down from above soaks some, while others suffer for want of it: out-of-doors they require no attention and cause no anxiety.

When it is intended to force as early as possible, the pots must be removed into the forcing-house as soon as they have formed roots. Force very slowly at first, and place the pots within a foot or two of the glass lights if possible. The plants will not require very much water at first, but it ought to be supplied more freely when it is seen that rapid growth has commenced: the night temperature then may be increased to 60° or 65°. Remove the plants into a cooler place as soon as the first bells are expanded. The exhibition Hyacinths are removed to a house as soon as the crowns have started about 1 inch; this will generally be about the first or second week in January. I remove them to a cold frame where the lights can be kept rather close for a few days, and be covered with a mat to exclude light. It is just as well to inure them gradually to the light, and if I have to place them on shelves in any of the vineries or in the greenhouse, I place a small pot over the crown for a day or two. It is as well to keep the plants very quiet at first; after the leaves have become green admit air freely night and day. If it should become necessary to force in order to get spikes open by a certain date, it is better to do this when they are further advanced. All through the period of growth the plants should be kept close to the glass, and air should be admitted as freely as possible; and water must be applied freely, giving manure-water with every alternate watering. I have said water applied freely, but it is proper to state, with judgment. Although the Hyacinth will grow in glasses of water, it will not do so in soil constantly saturated with it.

The varieties I have ordered for exhibition this year are, in single reds: Cavaignac, Fabiola, gigantea, Macaulay, Solfaterre, Von Schiller, Vuurbaak. Single blue: Baron von Tuyll, Blondin, Charles Dickens, General Havelock, Grand Lilas, King of the Blues, Lord Derby, Marie, Mimosa. Single white: Grandeur à Merveille, La Grandesse, Mont Blanc. Single yellow: Ida, Bird of Paradise. Single lilac or mauve: Czar Peter, De Candolle, Haydn, Sir Henry Havelock. Double reds: Koh-i-noor, Lord Wellington. Double blues: Laurens Koster and Van Speyk.

The above list contains very few double varieties, except Koh-i-noor, which is semi-double only. The doubles have not such compact symmetrically arranged spikes as the single varieties, and although I grow the few I have named they are very seldom used. Still there are a few of the double varieties very useful for decorative purposes at home. The best are, besides those named, in reds, Noble par Mérite, Princess Louise, Regina Victoria. White: Anna Maria, La Tour d'Auvergne, Prince of Waterloo, Triumph Blandina. Blue: Blocksberg, Garrick, Louis Phillipe. *J. Douglas.*



Fig. 54.—Erica obbata: specimen grown by Mr. Baines; much reduced. (see p. 300.)

THE TELEGASTROGRAPH.

In this big-Gooseberry season we scarcely expect the enclosed extract to be received with anything but incredulity. Nevertheless there seems to us nothing absolutely impossible from a scientific point of view, and the extract, which must be taken *cum grano* as a basis of truth, has been sent to us from one of the leading scientific men in Melbourne, who, with the Governor, Sir George Bowen, and others, himself took part in the proceedings. When this machine gets

perfected one Pine or one bunch of Grapes will suffice for a large party!

"The telegastrograph is a machine by which, through the aid of electric currents, the flavour of any food or liquor can be transmitted by wire to any distance, and the sensation of eating or drinking conveyed by merely placing the end of the wire between the teeth. The inventor never pretended that any actual nourishment was conveyed by his process. He merely claimed that the sensation of partaking of rich viands and costly wines could be imparted to people a hundred miles away from the operator—written on their palates, in fact; and that the number who could receive this sensation from a small quantity of food, and the length of time that it be could be made to last, were practically unlimited.

"There were five points of observation fixed upon, viz., the *Age* office, Government House, the Minister of Education's office at the top of Collins Street, and the post-offices in Geelong and Castlemaine. At each of these places a number of persons were assembled to watch the proceedings and take part in them. Telephonic communication was established with every station, and at a few minutes past 8 o'clock every gentleman was at his post.

"At the urgent request of the inventor all the observers had refrained from having dinner, but before operations commenced they partook, according to direction, of brown bread and butter, with two or three glasses of cold water. Precisely at a quarter past 8, and when it was ascertained by a preliminary trial that the wires were in working order, a bottle of the best sherry, flavoured with half a wineglassful of orange bitters, was poured into the receiver of the machine, and the electro-magnetic battery was turned on by Messrs. Ellery and M'Gowan. This was hardly fair to the inventor. He had directed that no more should be placed in the receiver for each sensation than an ordinary diner was in the habit of consuming at a meal; but Dr. Bleasdale, unused to the control of the tele-gastrograph, considered that one wineglassful would be quite inadequate to supply the wants of the numerous observers, and he therefore gave sixteen times more than he should have done. The evil effect of this mistake was speedily apparent. The observers at the different stations having taken the wires between their teeth, and the battery being turned full on, the alcoholic essence of the large quantity of sherry placed in the receiver was sent along the wires in full force to the five points of observation, and the thirty-six persons in gastrographic connection with the machine received the impression of having each consumed an entire bottle of sherry and bitters. Some of the observers stood this very well, and showed little signs of having received too heavy a sensation; but others, especially some gentlemen who are prominently connected with the cause of total abstinence, were very strongly affected, and in response to an urgent appeal by telephone from the editor of this paper [*Melbourne Age*], the battery by which the wine was discharged was turned off. From first to last five minutes had elapsed from the time when the sherry was put into the receiver till our message caused the supply to be discontinued. In that brief space five-sixths of the bottle was dissipated, and some of the observers were temporarily disabled from taking notes. Every sign of incipient intoxication was produced. Instantaneously, however, upon the electric current being stopped the ill-effects ceased. The pleasurable sensation of having lately partaken of wine remained, but that, and an exhilaration of spirits that lasted throughout the experiment, was the only result of Dr. Bleasdale's ill-judged zeal.

"Half-a-dozen exceedingly fine Sydney oysters were next exposed to the action of the battery, each having squeezed upon it a few drops of lemon juice. The effect of this was very fine, and proves that the tele-gastrograph is peculiarly well qualified to transmit the flavours of the most delicate foods. Intentionally *menus* had not been forwarded to the various posts of observation, as the inventor wished to have a perfectly unbiassed opinion from the gentlemen who took part in the experiment. A scientific objector had endeavoured, in anticipation, to account for the sensations by declaring that they were produced by the action of imagination. But the fallacy of this argument, on which a great deal of stress was laid, was shown through the whole course of last night's proceedings. Several of those who felt the effects of the wine most would not have had a sensation of the kind if they knew what was coming. And so with the oysters. The general impression among the observers was that soup would have been the next thing supplied, and it came as rather a surprise when the delicious sensation of slowly swallowing the freshest and plumpest oysters came upon them. His Excellency, Sir George Bowen, sent a message himself by telephone congratulating the inventor on the marked success that had up to this time attended the experiments; and Professor Pearson and Mr. Berry simultaneously informed him from Castlemaine and Geelong that they could almost smell the sea, so fresh were the oysters. A glass of Chablis closed this part of the performance, after which there was an interval of about five minutes, that was employed by the observers in comparing notes on what they had felt.

"There were five soups prepared under the special management of Mr. Sayers, and a different kind was sent to each place. Clear turtle was sent to the office of this paper [*Age*], and it was of a nature to make every one regret when the supply ran out. Rather an amusing accident happened with that supplied to Government House. When it was announced that everything was ready, His Excellency and his friends put the wires into their mouths, but no sooner was the soup (clear oxtail) turned on than as one man, and with various exclamations, they withdrew the wires, and so cut off the connection. It turned out that the soup had been put into the receiver scalding hot, and the gentlemen each received the sensation of having burned his mouth. Nothing can prove more plainly than this that the theory of imagination is utterly at fault. It is worthy of note, however, that the unpleasant feeling of scalding disappeared as soon as the wire was withdrawn; while, on the contrary, the pleasurable sensations imparted by the tele-gastrograph to the palate and stomach were felt for several hours after. A glass of East India sherry succeeded the soup, and a feeling of a convivial and social nature became apparent at all the posts.

"In every case the food looked as tempting after being subjected to the action of the gastro-graphic battery as when first brought in from the kitchen; but it was found to be utterly devoid of taste, and some analytical experiments conducted on the spot by Baron Von Mueller and Messrs. C. Newbery and W. Johnson proved it to be utterly valueless for human sustenance.

"The sparkling wines were those that obtained the largest share of approbation. Every bubble on every glass of champagne poured into the receiver was faithfully imprinted on the palates of the observers at every one of the stations, and the only departure from the carefully prepared *menu* was in response to urgent appeals for 'more champagne.' The dissipation of the viands and liquors with their elementary parts, and their distribution along the lines, was protracted or hastened according to the strength to which the battery was adjusted. A slice of the breast of a turkey weighing 4 oz. was distributed by way of experiment in forty-five seconds, while the flesh on a chicken's wing was made to last for nearly fifteen minutes.

"The warmest congratulations poured in upon the inventor [a member of the staff of the *Age*] at the close of the proceedings, and Sir George Bowen stated his intention of recommending him to Her Majesty for some mark of her favour."

The Melbourne Age.

M. ALBERT TRUFFAUT'S NURSERY AT VERSAILLES.

FOR many years this nursery was famous for its fine strains of Asters, which no longer reign supreme, their cultivation having been entirely given up by the present proprietor, who devotes his skill and energy to the cultivation of a general nursery stock of plants, and particularly to two or three special subjects. These specialities are Azaleas, Dracænas, and India-rubber plants, and it is no exaggeration to say with respect to them that better cultivation could not be found anywhere.

Of Azaleas M. Truffaut turns out about 12,000 saleable plants annually, and a better sample we could not wish to see, every plant being perfectly clean and healthy, and with compact heads of foliage ranging to 1 foot across. The plants are easily propagated by striking cuttings of the freest growing sorts, and grafting the choicer growing sorts on to them. Most of them are grown through the summer months in long wide pits, where they do well, and certainly present a fine appearance at this season. We have seen the stocks of the leading Ghent growers, and know well the style of plant they turn out; but fine as they are, our Belgian friends must look to their laurels.

M. Truffaut's success with the Dracæna is, if anything, even more remarkable than with Azaleas, though of course he does not turn out the same quantity. All the plants grown on for sale this autumn are grown in frames about 3 feet or 3 feet 6 inches deep, according to the amount of growth which individual varieties are known to make in a season, and are either planted out or have their pots plunged as circumstances may require. At the present time range after range of pits may be seen full of them, and the plants are of a sound sturdy sort, with the foliage clean, well developed, and beautifully coloured according to their various characteristics in this regard. Most of the cuttings, we learned, were struck in January, since when such fine free-growing varieties as amabilis have attained a height of 4 feet, and are clothed with large leaves down to the pot. Altogether between 4000 and 5000 plants are turned out every year, and about 1200 of this number are of what are technically termed "red-leaved sorts." The varieties Hendersoni, amabilis, and Guilfoylei are the largest grown among light-leaved kinds.

The stock of Ficus elastica consists of some 3000 plants in 48-sized pots, and a splendid lot they are, the growth being strong, the leaves of large size and of a fine deep bronzy green colour. They are all plunged in pits in the open air, and fairly astonish one by their sturdy and handsome appearance. Certain free-growing Palms are also well done in frames, in a similar manner to the Dracænas; and amongst other things exceedingly well grown we may note Pandanus Veitchii. Aralia Sieboldii, and its silvery variegated variety, are another good feature; and yet another is a very fine lot of standard Rhododendrons.

We might use similar words with reference to all the subjects which M. Truffaut grows, so markedly does every plant bear the impress of the grower's skill. The nursery is not the largest we have seen by a great deal, but it is quite a remarkable one for its neatness and excellent all-round cultivation.

HARDY STONECROPS.

(*Continued from p.* 268.)

THE TELEPHIUM GROUP.—We come now to a group well-marked as a whole, but wherein the individual species, if species they are to be called, are very difficult to be distinguished. It is one of those puzzling groups which form the vexation of a botanist. He does not know whether to make one large-embracing species or fifty minor ones. If he make one only, onlookers would protest, and gardeners especially would have cause for complaint, inasmuch as the forms are quite distinct in cultivation, and individually are not difficult to recognise. But when a whole series of such plants is before the botanist, he finds too often that the strongly-marked peculiarities which the single individual possessed fade away or become confused beyond power of extrication. So it is with the Sedums of the Telephium group: one may frame a formula in words which shall fit a particular specimen as well as words can do, one may even draw the plant as M. Fourreau did in the beautiful series of drawings published by MM. Jordan and Fourreau, but the very next batch of specimens will show how difficult, how impossible in some cases, it is to allot these newcomers to their proper places. It comes then to this, that nearly every specimen must have a distinct name or that one or two groups must be made under which the forms can be grouped. Something like a definition becomes possible in the latter case. It is possible to frame a formula which shall serve to distinguish the members of one group from those of another, whereas the attempt to frame an unexceptionable definition to fit each form is an impossibility—the very next specimen that comes under observation may upset the whole. The attempt to define what is naturally indefinite must necessarily be arbitrary and futile. It is not that the forms do not exist—they do exist, but their limitations are vague and confused to a degree only equalled by our own incapacity. The probability is that these forms are, or were, originally, seedling varieties, which have in certain localities become more or less fixed. Every gardener knows that from a seed-bed of Cupressus Lawsoniana or evergreen Oaks, he can pick out a large number of varieties. So with these Sedums, they vary from seed. Moreover, we have no doubt, though we can adduce no absolute proof, that they intercross freely. The bees are very fond of these plants, and they must necessarily convey the pollen from one form to another, and so help to bring about that multitude and variety of forms that we see but cannot rigidly define. All that we can pretend to do is to define one or two groups which we may take to be species, and to range under each as nearly as we can the forms (we use the word "form" purposely in a vague sense) which have been described as tenants of our gardens or which have come under our own ken.

The Telephium group, then, consists of herbaceous perennials with tuberous rootstocks, from which are sent up "turios" or shoots, not unlike those of the Asparagus in spring; these form the flowering shoots, which die down in the winter. Barren shoots are scarcely ever present.

The specific distinctions are to be sought in the

shape of the leaves, the form of the inflorescence, the colour of the flowers, but none of these are absolute. You may have opposite, alternate, and verticillate leaves on the same specimen—leaves spreading or leaves reflexed, leaves with rounded base and leaves with tapering base, and so forth, on one and the same specimen; and such cases, which are by no means infrequent, shake our confidence in the neat formulas and pretty pictures which some indulge in and consider as well nigh infallible.

Following our plan of arrangement we classify the garden forms known to us under the two main groups of S. Telephium, with alternate leaves generally tapering at the base, cymes with short stalks of nearly equal length forming a more or less compact panicle, and S. maximum, with opposite leaves more or less cordate or broad based and corymbose panicled inflorescence, the cymes being raised on long ascending stalks, the lowest longest and forming a more or less flat-topped loose corymb. These distinctions are generally sufficient to distinguish a plant of one group from one of the other, but strictly speaking there are so many intermediate forms that we believe there is really only one species, as Linnæus thought, and that it is a mere matter of expediency to make two.

†† Leaves flat, broad, toothed, but never deeply divided. Roots tuberous.—Sect. TELEPHIUM of authors.

8. S. TELEPHIUM, Linn. Sp., 618; partly.

Stem erect, 12—18 inches.

Leaves scattered, rarely opposite, ascending or spreading, 2 3 by 1—1¼ inches, oblong-ovate, obtuse, dentate; lower ones wedged-shaped at the base, upper somewhat rounded.

Flowers numerous, pink, red spotted, or sometimes pure white, in dense terminal or lateral subglobose stalked cymes; peduncles short and nearly equal in length.

Calyx tube very short, sepals lanceolate.

Petals lanceolate, 2—2½ lines, spreading, somewhat recurved, reddish or white.

Stamens as long as the petals. Carpels oblong, purplish-white.—Rchb. Ic. Pl. Crit., t. 726; D.C. Pl. Grasses, t. 92; S. purpurascens, Koch. Synop., 284.

Central Europe to Siberia.—Fl. Aug., Sept.

Subspecies FABARIA, Koch, sp.—Leaves narrower than in the type, lower ones slightly stalked; peduncles short, arranged in a terminal cyme; flowers smaller, petals less recurved. Flowers earlier than the larger form.

Under the head of this species und subspecies may be classed a large number of forms more or less constant, described by Boreau in his *Monographie de quelques Sedum*," *Memoirs* of the Société Académiquedl'Angers, t. 20 (1866), and others which are figured in the splendid work of MM. Jordan and Fourreau under the head of Anacampseros. In cultivation these forms are distinct and generally constant, nevertheless we have observed alternate and opposite leaves on the same plant as well as those which are cordate or tapering at the base, &c., so that the characters relied on as distinctive are not entirely to be relied on. We shall confine ourselves to very brief mention of these forms, except where we have had the opportunity of seeing the types of M. Boreau, through the kindness of the Rev. H. N. Ellacombe. Some of them are quite intermediate between S. Telephium and S. maximum, and may be placed indifferently in either.

Var. *repens*.—Leaves alternate, ascending, tapering to the base; cymes few, terminal, short-stalked, globose; flowers of a bright pink hue. = Anacampseros repens, Jord. et Fourr., Ic. Pl. Europ., t. 99.—This is very near to the typical S. Fabaria, Koch.

rubella.—In this the stems and leaves are red, the latter tapering to the base, narrow, oblong and coarsely toothed, the inflorescence consists of globose cymes, the lower ones on long horizontal stalks, forming an elongated oblong panicle; the flowers pink. = Anacampseros rubella, Jord. et Fourr., Ic. Pl. Eur., t. 98.

Borderi.—Stems reddish, leaves distinctly stalked, oblong, obtuse, tapering to the base, irregularly and coarsely toothed. Cymes corymbose, flat-topped. Buds ovoid, acute, flowers pink. = Anacampseros Borderi, Jord. et Fourr., Ic., t. 96.

lugdunensis. — Stems stout; leaves in verticils of three, spreading or ascending, rounded at the base, coarsely toothed. Cymes numerous, loosely corymbose, on long stalks. Flower rose-pink. Buds ovoid, acute. = Anacampseros lugdunensis, Jord. et Fourr., t. 94.

rhodanensis.—Leaves alternate, spreading, tapering to the base and apex, coarsely toothed; cymes corymbose, globose, long-stalked; flower-buds oblong acute; flowers pink. = Anacampseros rhodanensis, Jord. et Fourr., t. 94.

pycnantha.—Stem green; leaves alternate, ascending, tapering at both ends; inflorescence compact, many-cymed; cymes globose, lower cymes on long stalks; flower-buds oblong acute; flowers greenish. = Anacampseros pycnantha, Jord. et Fourr., t. 93.

Of the following forms we have been favoured with specimens from Mr. Ellacombe, who received them from M. Boreau himself. We may, therefore, describe them a little more at length.

Jullianum, Boreau, Mon. de quelques Sedum, p. 10.—Stems 12—18 inches, erect, glabrous, finely spotted. Leaves alternate, appressed, glaucescent, 3 inches by 1½ inch, obovate, tapering to the base, irregularly toothed in the upper half. Cymes terminal and lateral, stalked, roundish, compact, forming a large terminal panicle. Buds ovoid, pointed, not angular. Flowers ¼ inch diameter, greenish, ultimately pinkish. Calyx-tube short, sepals linear lanceolate, one-third the length of the lanceolate pinkish petals. Filaments whitish. Anthers yellow. Carpels glabrous, erect. —Hort. Ellacombe. Fl. August.

thyrsoideum, Boreau, *l.c.*, p. 11.—Stems about 2 feet, reddish. Leaves opposite or verticillate, lower ascending, 3 inches by 1 inch, oblong-acute, broad-based, irregularly toothed in the upper two-thirds, upper leaves smaller, subcordate. Cymes numerous, globose, many-flowered, on long ascending stalks, forming a large compact panicle. Buds oblong-acute, slightly angular. Flowers ⅛ inch diameter, greenish. Calyx-tube shallow, cup-shaped. Sepals linear, one-third the length of the lanceolate spreading petals. Filaments and carpels white. Anther yellowish. = S. confertum, Boreau, Fl. Cent., ed. 3, t. ii., p. 253; non Delil; Anacampseros conferta, Jord. et Fourr., Ic., t. 95.—Fl. Aug., Sept. Hort. Ellacombe. Boreau describes and Jordan and Fourreau figure the flowers as *rouge-clair* in colour; in cultivation, however, they are yellowish.

arduennense, Callay, ex Boreau, *l.c.*, p. 17.—Stems robust, purplish, 8—12 inches. Cauline leaves alternate appressed, nearly 4 by 2½ inches, ovate oblong-obtuse, subcordate, purplish-green, coarsely sinuate dentate. Cymes numerous, forming a loose terminal panicle. Flower-buds ovoid-acute, not angular. Flowers whitish, ⅜ inch diameter. Calyx-tube very short. Sepals deltoid, one-third the length of the whitish lanceolate erecto-patent petals. Filaments white, anthers deep orange. Carpels white, glabrous; scales white.—Fl. Aug., Sept. Hort. Ellacombe. Boreau describes the flowers as red, but in cultivation they are paler.

Brunfelsii, Boreau, *l.c.*, p. 12.—Stem 6—18 inches, robust, terete, the thickness of the little finger. Leaves glaucous, appressed, sessile, oblong-obovate, 3 inches by ¾ inch, subcordate, irregularly toothed, reddish along the midrib, upper leaves subcordate. Cymes terminal, rounded. Flower-buds ovoid-acute, subangular. Flowers ⅜ inch diameter, pink. Calyx tube very short, sepals linear-lanceolate, one-third the length of the pinkish, spreading, oblong-lanceolate petals. Stamens included, filaments purplish, anthers orange. Carpels glabrous, erecto-patent. Scales yellow, emarginate. To this form Boreau refers Reichenbach's S. Telephium, Ic. Crit., 968.—Fl. Aug. Hort. Ellacombe.

S. affine, Boreau, *l.c.*, p. 13.—Stem 12—18 inches, greenish or spotted with red spots. Leaves alternate, appressed, sessile, 2 by 1 inch, ovate oblong-acute, subcordate, irregularly toothed in the upper portion. Cymes terminal, loosely fastigiate, sparingly leafy. Flower-buds oblong ovate, rather acute, prismatic. Flowers ⅜ inch, pink. Calyx-tube short. Sepals linear lanceolate, one-third the length of the spreading oblong lanceolate pink-splashed petals. Anthers orange. Carpels glabrous, oblong, pointed. Scales yellowish.—Hort. Ellacombe. Fl. August.

S. occidentale, Boreau, *ubi* (?).—Glabrous. Stems robust, reddish. Leaves alternate, ascending, 3 by 1¼ inch, obovate-oblong, obtuse, tapering to the base, irregularly toothed in the upper two-thirds; upper leaves subcordate. Cymes numerous, many-flowered, compact, leafy. Flower-buds prismatic, ovoid. Flowers ⅜ inch diameter. Calyx-tube very short. Sepals deltoid-linear. Petals spreading, lanceolate, pinkish. Anthers yellow. Scales yellow, emarginate. Carpels glabrous, pinkish. Scarcely different from Brunfelsii.—Fl. Aug., Sept. Hort. Ellacombe.

The following additional forms referable to S. Telephium are cited by Boreau, but I have seen no specimens:—S. corymbiferum, intermedium, Bulliardi, grandidentatum, Lobelii, controversum, and Carioni.

All the forms of Sedum Telephium are suitable either for the rockery or for the front rows of the herbaceous border. The young shoots in spring are very pretty objects, and differ in appearance in the different forms, so that a nursery foreman or an amateur who had them constantly under his eye would recognise them by this means only. The larger forms with brightly coloured flowers are obviously preferable for ornamental purposes, but, as we have seen, the colour of the flowers varies.

De Candolle describes the root as "ramosa fibrosa," but this is an obvious error. The same writer also mentions the circumstance that the leafy stems, which have a long-enduring vitality, are made use of in Savoy as ornaments to conceal a fireplace in summer, being tacked to a frame, and moistened occasionally to preserve their freshness.

(To be continued.)

BEDDING VIOLAS AND PANSIES.

JUST before starting for the Bishop Auckland show, Mr. Thomas Sibbald, the well-known nurseryman there, wrote to me, saying, "Look in at my nursery and see the bedding Violas and Pansies; they will interest you:" and they did both interest and instruct me. The day previous heavy showers of rain had fallen, and all the floral life appeared to have been washed out of Pelargoniums, Lobelias, Calceolarias, &c., but the Violas were as gay and attractive as if rain could have no effect upon them. I wish Mr. Hinds could have seen them; he would, I think, at once have taken out a new lease of favour on their behalf. There was a slightly sloping narrow border on the side of a walk, having as a background a line of dwarf shrubs and Conifers, with some pretty dashes of variegation thrown in. At the back was a line of a pink Pelargonium, then a line of the sulphur-coloured Viola Corisande, then one of Viola Blue Bell, with an edging next the grass verge formed by Flower of Spring variegated Pelargonium. The combination was as simple as it was strikingly effective. In a series of beds close by Mr. Sibbald had planted out patches of these Violas, and I noted the names of the most striking among them, grouping them as far as possible in their colours. They had made a vigorous growth, as they always do in the cool moist districts of the North, but they had also flowered with remarkable freedom. There was not a trace of the mildew that is sometimes so destructive in the drier climate of the South. The lilac-coloured varieties are charming, especially lilacina (Dean), rubra lilacina (Dickson), Mrs. Beasley, in the way of Princess Teck, but rather paler; Duchess of Sutherland, which is very like lilacina; and The Lady, also in the same way, but with the top petals flaked with purple. The soft beauty of the foregoing was charming. There are some who vote all such tints "washy" in a spirit of masculine vigour that appears to see beauty only in dazzling hues of scarlet, blue, and yellow, but they are much liked by ladies, and show to great advantage in the flower gardens. Of white Violas, Mrs. Henry Pease was very effective; the flowers are of the purest white, but lack substance, yet it is of great value. Vestal was also good, and never "blues," *i.e.*, the white does not take on a blue tinge as the flowers age. Lady Gertrude is also a fine and useful white Viola in the same way, coming near to Vestal. White Swan was very effective: it is a variety well suited for the North. Nonpareil is also a good white, but apparently not very free-flowering. Of purple varieties the best were Crimson Gem, a purple Pansy, very like Cliveden Purple; and Mulberry, with its compact habit and free-blooming character. Of the blue varieties, the best were Holyrood, a large rich purple Pansy, very showy; Royal Blue, and Blue Bell, which appears to have found its way into almost every garden in the country. The best yellow varieties were Corisande, Crown Jewel, and a fine type of Notabilia grandiflora. Peach Blossom, a very distinct Viola, with its novel tint of pinkish lilac, was also very pretty and effective.

In the flower-garden at Auckland Castle, the residence of the Bishop of Durham, were some large beds, the centres formed of Viola Corisande, with a broad band of blue round it, the foreground filled with various bedding plants. Looked at from the carriage drive, a distance of 80 or 100 yards, these beds were most effective, and the masses of colour in the centre were in striking contrast with the washed-out appearance of other beds from the heavy rains of the day before.

At Hutton Hall, Guisborough, the residence of J. W. Pease, Esq., M.P., Mr. J. McIndoe finds the Violas most serviceable this summer. They are the gayest subjects in the flower garden. Blue Bell, Admiration, and Viola lutea grandiflora, were masses of bloom, even though drenching rains were visiting the district. Mr. McIndoe is so pleased with their

effective service that he has several of the newer varieties on trial this summer, and will in all probability use them largely another year.

One great advantage possessed by the Violas is that they supply distinctive tints of colour scarcely to be found in other bedding plants. They also bloom early and continuously—their durability is one of their leading claims to recognition; and with raisers in various parts of the United Kingdom doing their utmost to make the new types as serviceable as possible, there is a prospect of the bedding Violas and Pansies being of great usefulness in gardens in the time to come. *N. D.*

THE POTATO DISEASE.

(Concluded from vol. iv., pp. 430, 463, and 625.)

THE results of further observations and inquiries, to which my attention has been directed by the very useful critical remarks which have been offered, to ascertain the relation between the colour of the tubers and the disease, have led to the conclusion for the present (my field of observation being comparatively limited) that, if both the colour of the skin and the flesh are taken into account, it will then be found that, as a rule, Potatos escape disease almost entirely in proportion to their colour.

As regards the colour of the skin I have nothing to add further than that the Belgian Red, which has a good character for resistance, has such a white flesh that, if it were not for the red skin and the colour extending in some degree into the flesh it would be below the average as regards escaping the disease. At first sight I thought it was not a pure white, but had a faint blueish cast; that, however, was probably from contrast with the red colour of the skin. (*Gardeners' Chronicle*, p. 430.)

With regard to the flesh of the tuber there are three principal tints observable. 1. The pure white which is seen in the Regent, but not in all the varieties, *e.g.*, the Champion Regent, which is regarded as intermediate between a Rock and a Regent. The white-fleshed Regent is very liable to disease. 2. Yellow. The Rock has a very deep yellow, and is much less liable to disease than the average, to which, however, its hardiness probably lends some aid. (*Gardeners' Chronicle*, p. 463.) 3. The greenish-yellow, of which the Fluke, the Victoria and the Magnum Bonum are examples, and these are all noted for standing well against the disease. Messrs. Carter & Co.'s Improved Magnum Bonum is the greenest fleshed Potato I have seen, although of first-class table quality; but the Flukes and some of the Victorias closely approach it. Sometimes, especially in the Flukes, it is deepest in the centre, from a slender column about the size of a wheat-straw, extending from the base nearly to the apex. This column of tissue, which is about one-eighth of an inch thick, has apparently a greener tint than the surrounding flesh; but this not improbably may be owing to its containing less starch: it is, however, quite distinct in the Flukes and in some Victorias, and might be tried in selecting tubers for planting by simply dividing them down the centre.

The General Grant sent to the competition for the Royal Agricultural Society's prizes in 1874—which proved to be the one best able to withstand the disease—was imported from America by Mr. D. Cunningham, who informs me that it is "a large, round, pale brown, rough-skinned Potato, in shape not unlike Paterson's Victoria;" so that, supposing it agreed (which may be expected) with the Victoria in the colour of its flesh, its success in standing against the disease in common with the Victoria would in some measure be accounted for; but he adds that "when boiled the Potato had a slight pink tinge at the upper end"—a character very often absent in red-skinned Potatos. It was of second-class table quality, and having been grown only by himself it has been accidentally lost in his removal to another part of the country; the pink tinge, however, which seems to have been apparent on a cursory inspection of the flesh even after boiling, appears to me, together with its resemblance to a Victoria, to go far to explain its success. Next to the General Grant in freedom from disease in the competition of 1874 was Gleason's Late or Hundredfold Fluke. The late Fluke is known as one of the best varieties for standing against the disease, which immunity I attribute to the colour of the flesh, and as a farther protection the tubers of Gleason's Late have "large bands or patches of rosy purple, and the stem is of a reddish tinge, and the leaflets are green, with coloured veins."* If colour is really the cause of the freedom of this variety from disease, it might, as the tubers are large, be improved in one season by selecting the most coloured tubers at the time of taking up, because the pale ones might become, I should expect, more or less of a rosy purple after they had been taken up. Next to this Potato in freedom from disease were two coloured varieties, the Peach Blossom (a Fluke?), and Carter's Improved Red-skin Flourball; and the most diseased were two varieties described as uncoloured. There were only six varieties on the Society's trial. (Report, vol xi., part 2.)

It appears therefore quite within the bounds of possibility that if the reddest skinned Potatos (which, I expect, are the Belgian and Early Purple Shaw, the purple colour of which extends in some degree into the flesh, which is otherwise very yellow †), and the greenest fleshed kinds (as distinguished from the yellows), viz., the Magnum Bonum, Fluke, and Victoria, are selected year after year for planting, selecting from each those tubers which have most colour—varieties that will stand against the disease better than any hitherto have been known to do will soon be produced. As the greenest fleshed Potato, Carter's Improved Magnum Bonum, is of first-class table quality, and also the Flukes, there is for the present no danger of deterioration from too much colour, especially as they are among those which bring the highest price. It seems also from Gleason's Late Fluke that it is possible that a deeply and uniformly coloured fluke, either red or purple, may be produced, and if so the two *desiderata* might be obtained in the same variety of Potato. The hardy Swede Turnip has three colours quite distinct from each other—the chocolate-red skin, the green under-coat or rind, about the eighth of an inch thick, and the yellow flesh.

INJURIES FROM BRUISING.

A gardener informs me that he cannot understand how all lots of Potatos, whether gathered for the household or for market, can be considered as more or less bruised (*Gardeners' Chronicle*, p. 625). An example of one of the physical laws of no small interest, is that if a cotton thread could be made to go fast enough, it would cut any solid body asunder—and even our planet—without being itself broken. From this it follows that if a Potato—especially a large one—is thrown into a collecting skip or vessel already containing some (which is the usual way of collecting previous to carting), it of course hits one of them, by which it is itself bruised, unless the distance which it is thrown is very small, and the one it hits is bruised much more than itself by the collision; and although on cutting the two across nothing could be seen, yet in the course of the winter, if not before, there would come, I expect, the light grey spot, not visibly externally, about an inch in diameter, fainter and evanescent at the margin, and turning darker or almost black in boiling. (See *Gardeners' Chronicle*, p. 625.) An interesting experiment would be to take two large ones of equal size, lay one on the ground, and let the other fall from a height of 30 or 40 feet; then lay them by for a week, boil them—by which the exact extent of the injury will become more evident, and they could be cut in pieces to see which suffered most by the collision.

As other incidents, showing more or less the effects of contusion, it may deserve notice that it is stated in the report on the results of the competition of 1874 that "the Potatos in the experimental plots at Garbally, Ballisnasloe, sent by the Royal Agricultural Society, came up so badly that Mr. Nesbitt unfortunately laid aside his report book, thinking it would be unnecessary to keep the record." And the general crop produced by the growers in the twelve localities from which only any returns were sent of their own crops, was, on the average, considerably over one-third greater than the average produce of the six varieties sent to them for competition by the Royal Agricultural Society. (Report, vol. xi., part 2, table viii.).

In p. 625 of this journal is related a short anecdote of an unbruised Potato, which produced "a full bushel." The grower further states that it was a large Oxnoble, and that it produced "a bushel heaped measure," and describes the situation as "low and sheltered, the soil new, deep, and rich, so as not to require any manure." A number of his men, he states, "have tried in their gardens or allotments all that earth and manure could do, but have not produced more than a peck at one root."

Turnips are clearly not liable to injury from bruising from the cause referred to as are Potatos, but it appears that large Mangel Wurzels are; it being a well-established fact that roots of a moderate weight keep much better than the large kinds; being lighter they would do and suffer less injury on being thrown the same distance. Onions, it may be suspected, have been bruised when the decay commences on the bulbous surface, not at the root or apex, which may be seen in large ones, especially the Spanish, to which their weight would contribute. This may be of some importance, as it is very contagious.

P.S.—Two tubers of the Belgian Red were planted some time since, one of them very red, and the other made as green as possible by long exposure to the light, as the red soon turns green. The foliage of the latter is of a deeper green, from which it appears not unlikely that the light green foliage of a first-class Potato, such as the Magnum Bonum, might without difficulty be made deep green, giving it a greater degree of resistance to fungi. *B. Clarke, Mount Vernon, Hampstead.*

* *Journal of the Royal Agricultural Society*, vol. xi., s.s., part 2. † Grown in Devonshire.

PASSIFLORA HAHNII.*

THIS is one of the most elegant but least known of its race. We first met with it the Jardin des Plantes in Paris, to which establishment it was introduced from Mexico by M. Hahn. M. Decaisne was good enough to furnish us with cuttings, which we distributed, but we have seen no more of the plant till we met with it a few weeks since at Sir George MacLeay's, at Pendell Court. The species was originally described and figured by M. Fournier as Distemma Hahnii in the *Revue Horticole*, but the differences between Distemma and Passiflora proper are not such, in our opinion, as to warrant the formation of a separate genus. The botanical history is given in the works cited in the foot-note, so that we may confine ourselves here to recommending the plant for cultivation in warm greenhouse temperature, for its elegant habit, peltate leaves, purplish on the under-surface, and its creamy white flowers. It is one of the most distinct and singular of its class, and among the most elegant. The pollen, as observed by Mr. Worthington Smith, is different from that of any other Passion-flower known to us. (See fig. 55, p. 305.)

* Passiflora Hahnii, Masters, in *Flor. Brazil.*: (Passifloraceæ) *fasc.* 55, p. 535: *Transact. Linn. Soc.* xxvii., 628, and *Journal Royal Horticultural Society*, n.s., vol. iv., p. 144; Distemma Hahnii, Fournier, in *Revue Horticole*, 1869, p. 430.

Foreign Correspondence.

THE VINE IN JAMAICA.—It is an interesting study to observe the difference in the growth of plants situated in the Tropics, and the same plants in more temperate regions; it is also an interesting physiological study to watch and admire the different forms which Nature takes for the accomplishment of her ends. The Vine in all temperate climates produces its fruit in a totally different manner to the same plant when growing under the influence of tropical heat.

In Jamaica, a few feet above the sea level, and on the south side of the island, the Vine grows and flourishes admirably, producing its fruit in abundance and of good quality when planted under favourable conditions. Its fruit, however, is not produced in the same manner as it generally is under the conditions of a temperate climate from the large buds situated in the axils of the leaves on shoots of the previous season's growth, but from the secondary growth situated on the laterals of those same shoots. It may be asked, Why were those laterals allowed to grow? We know they are not allowed to grow in the practice followed in temperate climates, or, if allowed, they are continually kept pinched; but here the conditions are different. If these laterals are cut off the growth is produced in the terminal shoots, and Grapes are produced from the small laterals at the end of these for shoots of current season's growth—quite the opposite to its mode of production in a temperate climate. It is, I think, generally supposed that the rudiments of the fruit are deposited or stored up by the large leaves of shoots or stems of the preceding season's growth, and rests in the buds at the axils of the leaves of such stems,

leading many and well-experienced men to do so themselves, and teach their subordinates, as I have been taught, to "prune to a good bud." There is not the least doubt that it is correct in practice, and that the good results of this practice in a temperate clime has given rise to the theory that the assimilated sap is stored in these large buds for the production of fruit. Such, however, is not the case in the Tropics. The Vine here is an evergreen and not a deciduous plant, the old leaves not being shed until the new ones are produced.

In following the same practice of pruning here and the same method of cultivation a great mistake would be made, and is generally made, by those European residents who would follow the same course of practice as exists in more temperate regions, without giving due regard to the altered climatical conditions, and of course resulting in failure.

To obtain a good crop of fruit here from Vines, the following course of practice has proved successful :—To plant in a border prepared in a similar manner to the most approved practice in England, and to allow the plants to grow on, providing a trellis for them.

The only pruning required is to see that the Vines do not ramify into too many heads so as to form weak growth, but to encourage them to make strong healthy and large growths, which in the season of rest must be spread over the trellis at equal distances, thinning out all the weaker, but taking off no laterals, or if taken off they should be left with three or four eyes, for when the Vines again commence growth it is from these laterals that fruit is produced. I may mention that great growth takes place. A Vine planted here eighteen months ago just rooted is now 9 inches in circumference at the base of the stem. (Temperature, cool season, 70° to 85°; hot season, 80° to 95°.) I am aware that fruit is produced in almost the same manner in English vineries where high temperatures are maintained; but in that case the Vines, on making their first growth, produced their main crop of fruit, and that the bunches formed on laterals in mid-season are only secondary, and are generally cut away by good cultivators.

The questions arising from these facts appear to me to be these, What are the particular conditions of growth and rest to cause the production of fruit? Where does the first formation of the germ of the fruit-buds commence? and what are the conditions under which the formation of fruit-buds may be assisted in all climates? *J. H., Kingston, Jamaica.*

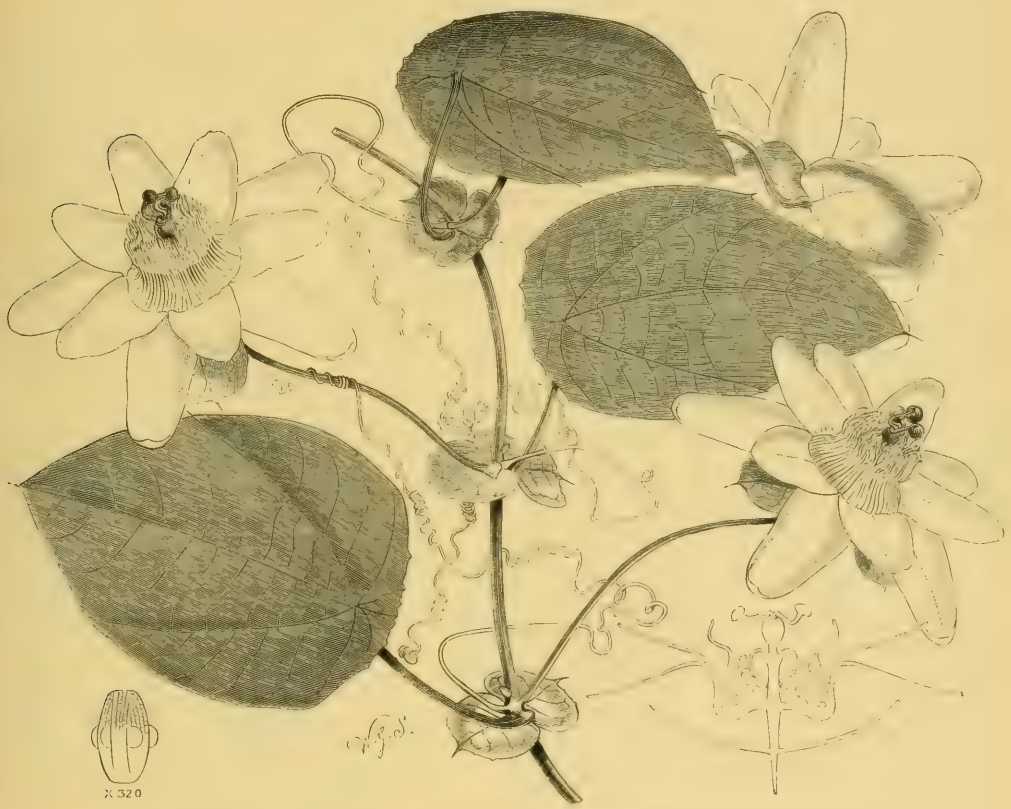


Fig. 55.—Passiflora hahnii. (Nat. size: pollen × 320. see p. 304. leaves purplish, flowers creamy white.)

Apiary.

When to Secure Stocks.—What is the best time of the year to begin beekeeping? is a question we often hear asked by those who wish to commence this delightful occupation. Many old-fashioned bee-masters would at once answer, In the spring; because then you have the whole summer before you. There are several reasons why the early part of the season is unadvisable. First, because those who have any knowledge of the value of their stocks take advantage of you, and generally charge exorbitant prices. Again, changing the position of the hives after the early spring flight has commenced, especially if it is in the same village, is often attended with a serious loss, for the bees naturally make for their old stand and thus perish; not only so, it is seldom that any but worthless stocks are sold, often they are very old, and at the best filled only with old rotten combs. Our experience is, buy your stocks only in September or October; the reason for this we will now explain.

Any beekeeper would prefer to sell his current year's stocks to destroying them over the brimstone fumes, if he could thereby secure a few shillings for the stock, and take the honey at a fair valuation, say an estimated value of a shilling per pound upon the supposed weight in the hive. In taking this course be sure to secure a hive weighing not less than about 15 lb. nett, after deducting the weight of the skep and bottom-board. We have purchased many cottage hives in the autumn for our friends in all parts of the country, and we find very little difficulty in securing any quantity of those marked by their owners to take up for the honey. Now a hive worth about 20*s.* in September would be valued at 30*s.* the following spring, thus a great saving is effected. But most cottage bee-keepers are most willing and anxious to sell all their surplus stock for the value of the hive and honey in the autumn; thus it needs very little conjuring to tell the best season for purchasing stocks. Take it as a fact, the taking of honey and wax is the most disagreeable thing in connection with the apiary, therefore, without loss of time, be on the look-out amongst the village apiaries to secure the surplus or honey stocks.

However, in purchasing in the autumn a little caution should be exercised. If you are only a beginner secure the services of a friend, to examine the stocks before concluding the bargain. An old author remarks, "Let it be with the bees as with a wife, never take them upon the recommendation of the owner." The chief point is to ascertain if any drones exist in the stocks; if you detect any it is probable it is a queenless colony, therefore worthless. Carefully search around the stand; if it is a vigorous stock the drones will be seen dead all around it; then watch the entrance about noon some fine sunny day—if they are working heartily they are generally in a good state.

Young swarms can be easily known by the colour of the comb. Puff a little smoke into the entrance of the hive, then gently lifting it from the board, if the combs are dark coloured or almost black we would not advise you to purchase such; on the contrary, swarms of the same year have combs of a light straw colour. The hive, whether it be old or new looking, is no criterion by which to judge. Wildman's advice is worth following:—"The person who intends to erect an apiary should purchase a proper number of hives at the latter end of the year, when they are cheapest. The hives should be full of comb and well stored with bees. The purchaser should examine the combs in order to know the age of the hives; the combs of that season are white, those of a former year are darkish yellow, and when the combs are black the hive should be rejected, because old hives are most liable to vermin and other accidents."

Another fair test which we never knew to be very far wrong is the watching on damp or rainy days: if they are flying in and out on such days in the autumn, it is a sign they are in a starving condition. Although such stocks may with care be fed up sufficiently to stand the winter, as a rule they never turn out very profitable.

Having ascertained satisfactorily that the stock is a strong and vigorous one, the next point is the weight; if they do not average 15 lb. nett weight they should at once be liberally fed with syrup. We make our food by boiling 3 lb. of lump sugar with 2 lb. of water, then if no feeder is at hand give it them from a wide-mouthed or pickle bottle. It is only needful to tie a little fine muslin over the mouth of the bottle, then invert it over a hole 2 inches in diameter cut in the centre of the skep. We have known many bee-keepers to be strongly averse to cutting the hole in a hive when it is full of comb, believing it would injure several combs—the support being cut away they must fall; so it is generally believed. This is quite he opposite of our experience, after mutilating scores of hives which we have purchased for our friends. The bees will take care the combs do not fall; if they are weak at any point it is quickly strengthened and made secure. Take care the stocks are strong—this is the golden rule of Langstroth—and in good vigour, headed by a young queen, then you need not fear to purchase. *R.*

PLANT PORTRAITS.

ALPINIA NUTANS, Roscoe, *Flore des Serres*, t. 2339.—A noble plant, an old inhabitant of our stoves. We thank our colleagues of the *Flore* for once more calling attention to these splendid plants, most undeservedly neglected now-a-days.

ANTHEMIS BIEBERSTEINIANA, Boiss., *Gartenflora*, t. 936.—A yellow-flowered Composite, with leaves pinnately divided into linear three-lobed segments, which are covered with white silky pubescence. Native of the Caucasus.

AZALEA MOLLIS, *Ill. Hort.*, t. 311.—Two varieties unnamed, one of a fine orange colour, the other pure white shaded yellow.

BEGONIA VEITCHII, Hook. fil, *Flore des Serres*, t. 2326.—See *Gardeners' Chronicle*, 1867, p. 734, and *Botanical Magazine*, t. 5663.

BIGARREAU NAPOLEON, *Florist*, April, 1878.—Called by Mr. Miles, "unquestionably the most magnificent Cherry in cultivation." The tree is vigorous, prolific; the fruit large, heart-shaped, yellow, dotted with red, the exposed side changing to a rich deep crimson, the flesh firm, and full of rich perfumed juice. July—August.

BOMAREA BREDEMEYERANA, Herbert, *Flore des Serres*, t. 2316, syn. B. acutifolia var. punctata, B. edulis, Morren, Linden, non Hook.—Introduced in 1840, but nearly lost to this country.

CALCEOLARIA FLEXUOSA, R. et P., *Flore des Serres*, t. 2331.—A shrubby species, with ovate acute crenate leaves and terminal panicles of yellow flowers. See *Botanical Magazine*, t. 5154.

CLEMATIS FAIR ROSAMOND AND STELLA, *Flore des Serres*, t. 23, 41-2.—Two of Mr. Jackman's seedlings, both of great beauty, and well known to amateurs; repeated from the *Florist and Pomologist*.

CLEMATIS GREWIÆFLORA, De Candolle, *Botanical Magazine*, t. 6369.—A distinct-looking Clematis, native of the Himalayan Mountains, with ovate leaves covered with rusty-coloured down. The flowers are about 1¼ inch long, campanulate, and of a tawny colour. It requires a cool greenhouse.

CYPRIPEDIUM CONCOLOR, Batem., *Flore des Serres*, t. 2321.—A reproduction of the plate in the *Botanical Magazine*, t. 5513, representing this now well-known yellow-flowered Lady's Slipper.

EPACRIS, *Florist*, April, 1878.—A group of garden varieties of Epacris with the beautiful double-flowered Australian form of E. onosmæflora (nivalis), with flowers like miniature rosettes, occupying the centre.

EPIDENDRUM SANGUINEUM, Sw., *Flore des Serres*, t. 2315, syn. Broughtonia sanguinea. An old but still beautiful West Indian Orchid.

EREMOSTACHYS LACINIATA, Bunge, *Flore des Serres*, t. 2338.—A grand Labiate, with pinnately cut foliage, and large yellow flowers with orange lip, the ordinary type of the species having purplish flowers.

ERICA SPENCERIANA, hybr., *Flore des Serres*, t. 2323.—A form approaching E. perspicua, with large tubular flowers, slightly constricted at the throat, and of a delicate pink colour.

EUGENIA OLEOIDES, Planch. et Lind., *Flore des Serres*, t. 2327.—A plant polymorphic as to its leaves, those of the young plant being narrow linear, those of the adult broader and like those of the Olive. The present plate is acknowledged to be incorrect, the artist having associated the flowers to the small leaves characteristic of the juvenile stage. The editor frankly acknowledges this to be "a Chimæra, a fantastic, illogical, incorrect thing." Surely it would have been yet better to have suppressed the plate altogether.

GLOXINIA MAMMOTH, *Flore des Serres*, t. 2324.—One of M. Van Houtte's seedlings, with large pendent flowers of a carmine colour.

GRAPE CHASSELAS DE TOURNAI, *Bulletin d'Arboriculture*, May, 1878.—Bunches large, well formed, berries medium-sized, very sweet, amber-coloured. The fruit is said to hang well on the walls, but is specially valued for its earliness, as it ripens a fortnight earlier than the Chasselas de Fontainebleau.

GYNANDROPSIS COCCINEA, Benth., *Ill. Hort.*, t. 310.—A pretty Capparid with digitate leaves and racemes of pink flowers. Native of Colombia, introduced into cultivation by M. André.

HYDRANGEA THOMAS HOGG, *Revue de l'Horticulture Belge*, July, 1878.—A good figure of this beautiful white-flowered Hydrangea.

IONOPSIS PANICULATA, Lindl., *Flore des Serres*, t. 2333.—A charming epiphyte, with loose panicles of small pale violet coloured flowers, which are produced in great abundance.

IRIS KOLPAKOWSKIANA, Regel, *Gartenflora*, t. 939.—A lovely Iris with globose corms covered with a brown network, linear leaves like those of a Crocus, and lovely flowers, the falls purple with a central gold stripe, and the base white with pink veins, the standards violet-coloured. Native of Turkestan.

LATHYRUS TINGITANUS, *Flore des Serres*, t. 2330.—The Tangier Pea of old-fashioned gardens, now rarely seen, but too good-looking to be banished. It was figured quite in the early days of the *Botanical Magazine*, t. 100.

LILIUM ELEGANS, Thunb., var. CITRINUM, *Flore des Serres*, t. 2319.—The buff-coloured Lily called L. Thunbergianum by Lindley in *Botanical Register*, 1839, t. 38; and also known in gardens as L. venustum citrinum.

LYCHNIS HAAGEANA, *Flore des Serres*, t. 2322.—A supposed hybrid between L. fulgens and L. Sieboldii. M. Planchon, however, doubts its being a true hybrid. Be this as it may, it is a very handsome border flower.

MASSANGEA LINDENI, André, *Ill. Hort.*, t. 309.—A tufted Bromeliad with ligulate oblong abruptly acuminate leaves, of a greyish colour, marked with transverse narrow wavy bars. The plant is a native of Peru, and was shown at the last Ghent Quinquennial by M. Linden. Its botanical position is not known with certainty, as it has not yet flowered.

NECTARINE PEACH, Rivers, *Bulletin d'Arboriculture*, March, 1878.—Fruit large, ovoid, with a short-pointed beak and well-marked furrow. Skin glabrous except near the summit and near the middle, where it is slightly downy. When ripe it is yellow, strongly tinged with red and marbled with stripes and purple spots. Flesh semi-transparent, greenish, with a yellowish tinge around the stone, from which it parts readily, melting, with a rich aroma and fine subacid flavour; flowers large, glands reniform. Middle of September.

NEPENTHES AMPULLARIA, W. Jack, *Flore des Serres*, t. 2325.—A repetition of the plate in the *Botanical Magazine*, t. 5109. M. Planchon refers us, *apropos* of this plate, to a treatise of M. Faivre, of Lyons, on the structure and functions of these plants in the twenty-third volume of the *Memoirs of the Academy of Science, &c., of Lyons*, 1877, a treatise which has not yet reached this country to our knowledge.

OPUNTIA RAFINESQUEI, Engelm., *Flore des Serres*, t. 2328.—The special interest attaching to this Opuntia is its hardiness, which has now been tested for some years. As a species it is very like O. vulgaris, but the joints are more obovoid, not so thick, clearer green and smoother.

PLATYCODON GRANDIFLORUM, A. DC., *Flore des Serres*, t. 2329.—The Campanula grandiflora of Sims in *Botanical Magazine*, t. 252. An old favourite, deservedly brought under notice in the *Flore*. It is a native of Siberia.

PRIMULA LONGIFLORA, All., *Gartenflora*, t. 937 *a*.—A species, native of the Alps of Central Europe, closely allied to P. farinosa.

PRIMULA SINENSIS, var., *Flore de Serres*, t. 2334—2337.—The varieties figured belong, one to the Fern-leaved section with red leaf-stalks, the other is of the original type with flowers which have a yellow eye surrounded by a white rim, and this again by a broad marginal zone of rose-pink spotted with white spots, from which combination the name quadricolor has been given.

RHODODENDRON CALOPHYLLUM, Nuttall, *Flore des Serres*, t. 2340.—A repetition of the figure in the *Botanical Magazine*, t. 5002.

RHODODENDRON SOUVENIR DE JEAN BYLS, *Flore des Serres*, t. 2320.—A form with medium-sized spreading flowers of a rosy pink colour, spotted with rosy violet spots. The truss is full and the habit vigorous and free flowering.

SALVIA CACALIÆFOLIA, Benth., *Flore des Serres*, t. 2318.—A Mexican species with blue flowers, previously figured in the *Botanical Magazine*, t. 5274.

TOXICOPHLÆA THUNBERGII, Harvey, *Gartenflora*, t. 940.—A handsome greenhouse shrub with oblong deep green leaves and clusters of white Jasmine-like flowers. Nat. ord. Apocyneæ. Native of Cape of Good Hope.

VANDA BENSONI, *Flore des Serres*, t. 2329.—A repetition of the plate in the *Botanical Magazine*, t. 6511.

VERONICA SPECIOSA, var. IMPERIALIS, *Flore des Serres*, t. 2317.—The handsomest of the shrubby New Zealand Veronicas, having dense spikes of reddish purple flowers.

WESTRINGIA LONGIFOLIA, R. Br., *Gartenflora*, t. 937 *b*.—A pretty greenhouse labiate shrub, with linear leaves and pale violet two-lipped flowers. Native of North Holland.

Garden Operations.

FRUIT HOUSES.

PEACHES AND NECTARINES.—Remove the fruit-bearing wood of the current year and all useless spray from the trees in late houses, as they are cleared of fruit, in order that the young growths intended for carrying next year's crop may have the full ripening influence of sun and air. Wash the trees well on fine evenings with the garden engine, and give the inside borders liberal supplies of water, with some stimulant added where the trees show signs of weakness or exhaustion. Give abundance of air at all times, or remove the sashes, if movable, for a few weeks. Early and mid-season houses should always have sliding lights, the removal of which exposes the trees to the invigorating and cleansing influence of the autumnal rains, while the internal borders become thoroughly and evenly moistened to an extent that reduces the danger of bud-casting to a minimum. Where lifting, root-pruning, and rearrangement of the trees in early houses is contemplated this important

operation should have attention as soon as the leaves begin to part freely from the wood. Strong calcareous loam, with an admixture of burnt earth and old lime rubble, form a compost best adapted for all stone fruits, and few subjects pay better for annual additions than Peaches and Nectarines under glass. The latest Peaches in unheated houses, where judiciously managed and fed, will now be ripening off very fine fruit, greatly superior to that obtained from open walls. If, as is generally the case this season in wooded districts, wasps and flies are troublesome, the openings for ventilation may be covered with Haythorn's Nottingham Netting, a material which neither impedes the influence of light nor air. Pot trees intended for very early forcing should be overhauled, and if the drainage has become unsatisfactory it should be removed and replaced with nice clean crocks and crushed bones. Top-dress and place the trees in an open situation free from worms. Protect the roots from the drying effects of sun and wind by placing a little light litter or Fern round the pots, and water sparingly during the resting period. *W. Coleman, Eastnor, Ledbury.*

Melons.—During the last fortnight the weather has not at all been favourable to the production of highly flavoured fruit, more especially in the case of Melons approaching maturity in pits and frames not heated by hot-water pipes, inasmuch as heat acquired by fermenting material, is almost, if not quite, useless in dispelling moisture, moreover it is accompanied by ammonia, which is tantamount to moisture. But where hot-water pipes are at command the case is different, because though the day may be sunless and cold, a warm and dry atmosphere can be maintained by setting the hot-water apparatus in motion. Moisture in every shape and form must be used very sparingly now, otherwise canker is almost sure to appear. Do not wait its approach, but as a preventive—and cure if required—place some quicklime and new dry soot around the collar of each plant, which will quickly absorb any unnecessary moisture that might arise or settle in the neighbourhood of the plants. With the end of this month the Melon season will be drawing to a close, after which they are, as a rule, not much worth, being watery and insipid. Let stopping, &c., be attended to in the usual way. *H. W. Ward.*

Pines.—In the calendar upon this subject for the week ending July 13 we pointed out the process of cultivation which we pursue with suckers which are obtained from the stools of the successive fruiting plants at that period. If these plants have been subject to the conditions of treatment then advised, they will at this time be in a proper state for the next shift. Before this is done, the forthcoming requirements should be well considered, in order not to be encumbered with a larger stock of plants through the winter months than is absolutely required, as the overcrowding of such plants at this season will not only upset all well based calculations but moreover oftentimes is a fertile source of mischief to the plants which are specially reserved and positively indispensable. We therefore divide this batch of plants into two classes. The first section comprises the strongest and best Queen plants or others if necessary and we put these into the fruiting-pots—11 inch ones, at once, potting them in the manner described in the calendar for July 13. In the case of our own plants this operation is just completed, and they occupy a light, close pit, 2 feet asunder every way, the surface of the bed in which they are plunged being within 3 feet of the glass. For the present the following conditions will be enforced:—Heat at the roots 95° constantly; night temperature 70° to 75°, day temperature from 75° to 90°, according to exterior influences. Ventilators slightly opened at 80°, and gradually increased, but so that 90° is maintained in the house: this should also be the point for closing up the house when sunshine begins to wane, under which condition a slight syringing over of the plants may be given twice or thrice a week. Watering, which is an all-important affair, will require much care until the roots have taken hold of the fresh compost. The second section of these plants comprises the lesser ones, out of which we select a proportionate number, discarding the rest, which are put into pots from 6 to 8 inches in diameter; these have only a moderate degree of heat supplied to them, in order that growth may proceed slowly and be sturdy in its character, so that they may be in a proper condition for shifting early in the subsequent spring into the fruiting pots, and form a successional lot to the former which have been already referred to; for these plants a temperature at the roots of 80° will be ample; night temperature about 57°; day temperature 70° or 80°, given on all suitable occasions liberally. *George T. Miles, Wycombe Abbey, Bucks.*

Cucumbers, if they were sown and have been treated as recommended in the number for August 10, will now be ready, if not already done, for transferring to their fruiting pots, boxes, or hillocks, in the compost previously described, after which they should be supported by thin sticks, which can be fastened to the first wire of the trellis. Should the weather be bright and the sun powerful at the time the plants are being shifted, it will be advisable to put on a light shading for a few hours daily for three or four days until the plants have established themselves, when it can be discontinued altogether. The treatment of these plants should be regulated in a great measure in accordance with the time when they are expected to produce a supply of fruit. Water must be applied sparingly to the roots until such time as they have become well-established, with lots of hungry roots permeating the soil in all directions in search of food. Established plants will require the usual stopping, thinning, tying, and removing of superfluous fruits; shutting up the houses and damping the plants early in the afternoon, and setting the fires going at night so as to prevent the temperature falling below 65° or 60°. The damping of Cucumber plants in frames and pits which are heated only by fermenting material should be discontinued, as the ammonia from the fermenting material will be amply sufficient, otherwise mildew will in all probability attack them. If it should appear, apply the usual remedies, viz., the dusting of the plants so affected with flowers of sulphur when they are damp, after which maintain a moderately dry atmosphere and ventilate freely. See that the linings are regularly attended to. The young plants referred to above should be stopped when they have reached the third or fourth wire, or two-thirds of the allotted space. *H. W. Ward, Longford Castle.*

HARDY FRUIT GARDEN.

It is to be hoped that other parts of the country have not been visited with such a wind as we have had raging here during the greater part of to-day (August 30), for it is quite distressing to see such a large portion of the few Apples and Pears we had, torn off and lying bruised and battered on the ground, with many leaves and branches strewn among them; but in case of such a disaster having happened, it may be as well to point out to those who have suffered a like misfortune, that it is useless trying to keep the fruit, as, independent of the injury it has received, its immature condition is such that decay is sure to set in rapidly and spoil it for use. If taken up at once, there are many purposes to which fallen Apples may be put, one of the best of which is that of converting them into jelly—a most delicious compound, that will keep at least for a year or so; while, as to Pears, the dessert kinds are far better for stewing than any of the sorts usually grown for that purpose, and they may therefore be now turned to good account.

Such varieties as Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Superfin, and other Pears of that class, will now require close watching, as their time of ripening varies much according to the aspect or district in which they may be grown, and to leave them too long on the trees causes them to become mealy, and to lose much of their flavour. It is a mistake, however, to gather the whole of the crop at once, as more mischief is caused in that way, for none of the above-mentioned Pears will keep long, and are always at their best a few hours or days after being plucked from the trees. There is perhaps more art or knowledge required in this matter than in anything else connected with the management of fruit, as so much of their quality depends on the time and way they are harvested, and unless great discrimination is exercised much disappointment will be the result. Not only is it of the greatest importance that both Apples and Pears should be gathered at the right time, but it is of equal consequence that they should be carefully handled, and not pitched into hard wicker baskets in the way too common, whereby they receive such injury as to quite spoil their appearance, and sadly deteriorate them for keeping. The proper way is to take them one by one from the trees, and lay them gently on some soft dry hay or other material as tenderly as if they were eggs, and in like manner when transferring them to the fruit-room or sending them in for dessert.

Although we have had a succession of heavy rains, it is astonishing how dry the subsoil is, and as this is the part of the ground that contains the principal portion of the roots of trees it cannot be too strongly urged on fruit cultivators how important it is that these rains should be supplemented with a good watering, so as to ensure a thorough soaking. More especially is this necessary in the case of Peaches, Nectarines, and Apricots that seldom, if ever, get anything like sufficient water during the summer and autumn, when they most require it for finishing off their fruit, and plumping up and perfecting their buds. The more I see and have to do with the above-named trees the more convinced am I that the principal cause of failure in obtaining good crops and keeping them in health (seasons alone excepted) arises from an insufficiency of moisture at the root, and this soon engenders red-spider or causes bud dropping, and a whole train of disorders that ultimately end in death or else bring on such decrepitude and languor that fine fruit is out of the question. Those therefore who have trees they value and wish to preserve in full health and vigour should see that they do not suffer from lack of water either above or below, for of all cultivated plants there are none that pay better than Peaches for any attention that may be bestowed on them in this way. In order to ensure that they get what is given them the best course is to remove a portion of the top soil, so as to form a basin-like receptacle extending around nearly as far as the roots are supposed to reach, and if this space is then filled two or three times after a few days' interval between each, the trees so treated will derive immense benefit therefrom. A slight mulching given previously or immediately after will prevent any cracking or undue escape of moisture by evaporation, and keep all snug till the final forking over of the border takes place in the winter, when it should be removed, as any half-decomposed vegetable matter buried so near to the roots and stem is highly injurious, through breeding fungus, which fastens itself on the bark and poisons the sap. This insiduous enemy cannot be too strongly guarded against, for it works unseen at the plant's vitals, and is little suspected by many, till the mischief is done and the injury beyond remedy. The time for planting young trees will soon be here, and it is well to make early preparation for the work by getting what soil is likely to be needed for the purpose carted while it is in good order, and that it may lie after being chopped up to get a little mellow and decomposed before using. Nothing answers better than the top spit of an old pasture that has been closely fed by sheep or cows, and is rather of a stiff nature than otherwise. *J. Sheppard.*

KITCHEN GARDEN.

At this season of the year it is always, even under most favourable circumstances, a somewhat difficult task to keep walks clean, and other surfaces in gardens, or elsewhere, free from weeds; this is chiefly owing to the humid state of the weather, which usually prevails at this particular period, being, on the one hand, so favourable to increase and encourage growth, whilst, on the other hand, the ordinary means of extirpation are rendered utterly impracticable under these conditions, and with rain falling every day consecutively, which of late has been the case, it is no wonder that almost every description of weeds abounds everywhere most profusely. Such being the case, no time should be lost whenever more auspicious conditions exist, to eradicate this crop, by going over the whole surface of the ground with the hoe, and afterwards having all the refuse entirely cleared off. This is a commendable practice, which should be applied early in the autumn every year, and before the power of sunshine is too much reduced to be advantageous. Considerable time will also, under present circumstances, be required to be given to recent plantings of Cabbage and Lettuce, as slugs are most numerous, and very destructive amongst these plants. Under ordinary circumstances a dusting of quicklime, soot, or ashes over the soil will in a great measure mitigate their depredations; but these means are quite inoperative this season from the effect of continuous rains. The surface soil between these plants should be well stirred about frequently, and so also should it be done in like manner between the rows of autumn-sown Onions and Spinach. When these plants are large enough to be handled, thin them out to about 3 inches apart, and the latter to 6 inches. Look well after the plants in seed-beds, as Cauliflower, Cabbage, and Lettuce, and prick out or transplant at the earliest moment after they are ready, as at this damp season mildew will be sure to be troublesome, or otherwise damping off will speedily ensue.

As the planting out of Cabbages for the ensuing year's crop will now be proceeding, it may not be amiss to recommend strongly that estimable variety, Carter's Heartwell Marrow. This has proved to be a fine kind, not only for spring use, but for the whole year round. As soon as the spring crop of Onions is pulled and removed, the ground will without digging afford suitable space for planting out at once strong plants of Lettuce and Endive, to come in for winter use, and for taking up for frame-work. Keep the Parsley plants which are intended to give the winter supply of this indispensable subject free from decayed leaves, and as much exposed as possible. This operation is also necessary in the case of Globe Artichokes, or similar tender subjects, which require as much extension as possible in order to harden the leaves before severe weather comes. Late Peas already indicate the want of sunshine, and unless we are soon favoured with more of this element they will not yield much produce. Any which are very late in flowering should be pinched out at the top, as by so doing they will sooner be perfected. The time is fast approaching when the frames which are required for subjects belonging to this department will be in requisition; see therefore that the necessary repairs or other requirements are attended to, so as to have them in readiness by the time they are wanted for use. *G. T. Miles, Wycombe Abbey.*

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 7, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Sept. 9—Sale of Dutch Bulbs at Stevens' Rooms.

TUESDAY, Sept. 10—Coventry Horticultural Exhibition (two days). Royal West Renfrewshire Horticultural Society's Show (two days). Sale of Imported Orchids at Stevens' Rooms.

WEDNESDAY, Sept. 11—Newcastle-upon-Tyne Horticultural Society's Autumn Show (two days). Royal Caledonian Horticultural Society's Show. Brighton Horticultural Society's Show (two days). Sale of Dutch Bulbs at Stevens' Rooms.

THURSDAY, Sept. 12—Brentwood Horticultural Society's Autumn Show. Northampton Floral and Horticultural Fete (two days).

SATURDAY, Sept. 14—Sale of Dutch Bulbs at Stevens' Rooms.

WHAT is a bulb? It would seem as if some people had very vague ideas on the subject, or else gave extremely large significance to the word. A book now before us includes, among bulbs, Ranunculus, Anemones, Lilies of the Valley, Pæonies, and others beside, which no botanist would ever dream of calling a bulb, or even of classing together, so diverse are they in origin and structure. Acting on this principle we see no reason why Dahlias and Potatos, Jerusalem Artichokes, and the Victoria Regia should not be called bulbs. A bulb in its proper and more restricted signification is such as we meet with in an Onion, a Tulip, or a Hyacinth. It is, in fact, simply a bud or eye invested with more or less fleshy leaves or scales. A Crocus does not materially differ from a bulb proper, except in so far that it is a terminal bud on the dilated end of the stem, while a bulb is a lateral production from the axil of a previous existing scale, or from the scale itself. Some may think these things mere botanical technicalities, of no consequence to practical cultivators. This, however, is a mistake, as the well-being of the plant under cultivation depends very materially on the peculiar structure and mode of growth of the bulb in question, and those are the most successful cultivators who consciously or unconsciously adapt their cultural proceedings to the natural habit of the plant. What a difference there is, in fact, between the bulbs which must be rested and those which must be kept in an active state if success be desired. It is not, however, our purpose to dilate on these matters now, but rather to make a few observations on the nature and history of bulbs. Whether we take the word in its widest or in its most restricted signification, we mean a plant, or portion of a plant of succulent texture, and more or less globular shape—the shape, in fact, that we call "bulbous." If we analyse the matter further, we find that all these structures which we term bulbs are capable of reproducing the plant pretty much as the seed would do. Moreover, this reproductive process is prepared for beforehand, and remains in abeyance for a certain time. There is a resting stage in fact in most cases, and this resting stage is preceded by an accumulation and storing up of food-material which will be available when the dormant stage shall give place to renewed activity. This also is very like what happens in the case of most seeds in which we have a similar storing up of food, a similar period of rest, a similar awakening to a renewed life.

As has been already stated, the bulbs may originate in and from the stem, or in and from the leaf. They may originate superficially, or in the substance of the tissues; but in whichever way they may be produced they go through essentially the same stages, and fulfil the same purposes. All this to our thinking gives support to the notion that the parts of full grown plants which seem so different to the eye are really in essence one and the same. These apparently varied structures, with their common origin and their similar purpose, all testify to a primitive uniformity of structure. In the life history of each individual plant there is a period when the whole structure is uniform and homogeneous throughout. Growth and development go on, and differences arise; evolution takes place, the previously simple becomes complex, new conditions are provided for, new requirements fulfilled, or at least provision is so made that if the conditions alter, and if other requirements ensue, the means of fulfilling the one and of adaptation to the other are provided in the organisation of the plant. This evidence of provision for possible consequences is then a necessary part of evolution and an irrefragable testimony of design.

But, as these stages in life history occur in the life of every individual, plant or animal, and are one of the few things that we know for certain, is it not a fair inference to suppose that what we know to be true in the case of the individual is true also in the mass or aggregate of different individuals? Each begins in the same and in the simplest conceivable manner, and gradually developes into complexity—why may not different groups of individuals, therefore, similarly arise from simpler groups by a similar process of creative evolution? If we credit it in the one case as true—and we cannot help ourselves so far—surely we must admit it as not only possible but probable in the other case also. Looked at from this point of view it is surely no unwarrantable hypothesis to suppose the derivation of one group from another as offspring from their predecessors, according to laws and provisions ordained by an omnipotent and omniscient Creator; for we cannot imagine these things creating themselves, still less of themselves providing for possible future contingencies and requirements.

But these are tremendous speculations to be suggested by Dutch bulbs, though it is true that every created object, no matter how apparently insignificant, gives occasion for similar reflections. Our object will have been attained if we have directed the attention of our readers to this example of unity in variety, to the provision for the future, to the rhythmical intervals of rest and action, to the death of the old and the growth of the new. These are matters of the utmost concern in the growth of bulbs, and, as we have seen, they are not less important when considered from the side of philosophy.

—— THE HYACINTHS represented in our coloured plate are portraits of some of the remarkable specimens grown by Messrs. VEITCH & SONS, at Coomb Wood, in the spring of 1877, when it will be remembered they made a grand exhibition of these charming spring flowers. General Cavaignac, represented at the top of the plate, is one of the best of the pinks, but the colour-printer has scarcely realised the fawny-salmon tinge peculiar to this variety. King of the Blues is represented on the right hand of the group, one of the best deep indigo-blues—is a noble variety, especially effective in a group. Grand Blue, shown on the left, is a most striking variety of the pale or grey-blue type. Than these there are no better varieties grown; and that they possess good qualities, which may be brought out by superior cultivation, these examples sufficiently prove. At the present season they may serve as useful reminders that the supply of Dutch bulbs has reached us.

—— HARDY SHRUBS AT KEW.—Striking to the eye, as we rapidly walked through the newly-planted dell near the temperate-house at Kew, were several fine plants of acknowledged value yet too rarely used in landscape gardening. Azara microphylla (*Gardeners' Chronicle*, vol. i., 1874, p. 81) is graceful beyond measure; the branchlets grow in the same plane, so as to give the branches a very Fern-like appearance; the leaves are of the darkest green, like Berberis Darwini, and about the same size. It is an evergreen of free growth and elegant habit. Idesia polycarpa is the next of note, and greatly in contrast to the last. It is a rapidly-growing tree with heart-shaped leaves, petioles red, and rather less than half the entire length of about 14 inches, they are bright green, white underneath, acuminate, and with distant shallow serratures. This flowered last year in the very interesting collection of Mr. LUSCOMBE at Combe Royal, and the flowers are described as yellowish green with most delicious fragrance. It was unknown to science till 1866, when it was described by MAXIMOWICZ, who found it cultivated in Japan, where it is native of the island Kinsin. Though so recently introduced, it has had time at Ferrieres, near Paris, to reach the development of a small umbrageous tree. A fine clump of Bocconia cordata is highly effective, not only in its greyish handsome leaves, but also in the masses of white flowers which are now passing into orange fruit. Nandina domestica is very handsome. It is a dwarf shrub allied to Berberis, with few erect branches, but with dense foliage of ternately compound leaves, the younger of red colour. The flowers are white, borne in panicles, but not showy. It is a great favourite with the natives of China and Japan, and may be recommended to further notice in this county for its dwarf and elegant habit. Holboellia latifolia, often grown on walls and in the greenhouse, appears to do perfectly well when trained only on stakes. It claims attention as a vigorous climber for its masses of handsome dark green foliage and young stems, purplish in colour. It fruits every year in the temperate-house. Here are planted several varieties or forms of Hibiscus syriacus, which also in some of the shrubberies are producing an attractive display of flowers. At this season there is no other flowering shrub to equal this very old favourite—the Althæa frutex of many gardens. Two Hypericums, and one in particular, cannot be passed over; these are H. urulum and H. oblongifolium, which latter we think the best. It has fine golden flowers nearly 2 inches across, produced in the most profuse manner. H. urulum has very handsome foliage, but the flowers are smaller; both are fine habited dwarf shrubs, valuable for their bright effect.

—— SUCCULENT PLANTS FOR WINDOW GARDENS.—Mr. PEACOCK, with his tried liberality in such matters, is desirous of encouraging the growth of succulents as window plants. To this end he proposes to give a hundred plants to each of a number of window garden societies, and to offer, moreover, a prize of £2 2*s*. for successful cultivation. A schedule of prizes is now before us, comprising four prizes of 5*s*., 3*s*., 1*s*. 6*d*., and 1*s*., respectively, in nineteen classes, as follows:—Aloe any sort; Agave, Gasteria, Sempervivum, Echinopsis Eyresii, Pachyphytum roseum, Crassula coccinea, Crassula or Cotyledon glomeratum, Sedum acre, Mesembryanthemum (any sort), Echeveria glauca, Echeveria any other sort, Kleinia repens, Rochea falcata, Hoya carnosa, Opuntia elatior, Sedum adenotrichum—the best five of any sort; and, lastly, the best rendering into English of the names attached to the exhibit written on a card. As these prizes are to be competed for mostly by inhabitants in back streets, with little or no means of acquiring any information of the history and nature of the plants in question, it might be suggested to the managers of such societies that during the winter some one might supply information to the growers not only as to the best method of growing the plants under the circumstances, but also as to the conditions under which they grow naturally, the way in which the structure of the plant is adapted to the climate where they grow naturally, the uses to which they are put by the natives, the English representatives of similar character, and so forth. This might be done in a popular elementary fashion, and would add much to the interest of growing the plants in question. The parish schoolroom might perhaps be used for this purpose. We offer this suggestion to Mr. PEACOCK and the managers of these societies; in the meantime we are requested to ask the managers of such societies as may be desirous of participating in Mr. PEACOCK's liberality to forward their addresses to him at Sudbury House, Hammersmith.

—— MR. PEACOCK'S COLLECTION OF SUCCULENTS.—We are informed that Mr. PEACOCK has made arrangements with the authorities at Kew to establish a permanent exhibition of his succulent plants in one of the octagons of the temperate-house, for which purpose he has sent twenty-five waggon-

loads of his choicest and finest specimens to Kew. Considering the collections already publicly exhibited by this enthusiastic gentleman at the Royal Botanic Gardens Regent's Park, and the Alexandra Park, it must be admitted that he is doing his best to popularise these plants; and considering how well adapted many of them are for town culture on roof-tops, in windows, and the like, no doubt great good will result.

—— THE LATE M. THOZET.—The funeral of this gentleman, whose death we lately announced, took place at Muellerville. It was the spot that he loved above all others in Australia. By his enthusiastic genius, says an Australian paper, by the strength of his own arm, and by incessant personal care, he had reclaimed the land from the wilderness, and transformed it into a fruitful garden, studded with a great variety of valuable trees and plants. Nor are the charms of Muellerville lessened by the profusion and wild luxuriance of its vegetation. M. THOZET was not a landscape gardener, but a scientific botanist who regarded utility rather than ornamentation in the cultivation of his grounds. He had an affection for every plant, and shrub, and tree—for had they not been planted by his own hand?—and it seemed the most natural thing possible that he should be there interred, and that his body should return "dust to dust, ashes to ashes to ashes," on the spot which had been the delight of his most vigorous as well as his ripest manhood. M. THOZET leaves a widow and an only son, who, we are sure, will receive the heart-felt sympathy of a large circle of regretful friends.

—— THE MELBOURNE BOTANIC GARDEN.—We learn that there is a proposal to reinstate Baron VON MUELLER as the head of the scientific department of the garden, and to give him the assistance in the more strictly practical departments of a skilful horticulturist. It is to be hoped that some such arrangement may be made, and Baron MUELLER's powers for good not be crippled in the way they have been.

—— MR. ELWES' MONOGRAPH OF LILIUM.—The fifth part of this sumptuous publication is before us, comprising splendid illustrations of L. speciosum, canadense, auratum, elegans, cordifolium, Washingtonianum, a noble spike grown in Kensington by Mrs. BATEMAN; and Wallichianum. We shall revert to this number on a future occasion.

—— THE FERNS AND CONIFERS OF NEW ZEALAND.—The Botany of the tenth volume of the *Transactions of the New Zealand Institute* comprises amongst other matter some interesting papers on the Ferns and Conifers of the island. Mr. T. KIRK publishes a revised arrangement of the species of Dacrydium, of which he enumerates seven species, including four new ones. Only three species are described in HOOKER'S *Handbook*. The same writer contributes a paper on the New Zealand species of Phyllocladus. Several new Ferns are described, including a Polypodium and a Hymenophyllum. One of the most interesting articles is that by KIRK on the naturalised plants of Port Nicholson and the adjacent district. The author argues that there is not so much danger of native plants being extirpated by introduced species as might be imagined, inasmuch as the latter soon lose the extraordinary vigour they at first exhibit. In fact he regards the introduced element in a much more favourable light than many previous writers, though it is true that some have become troublesome weeds. Under the title of *Manibus Parkinsonibus sacrum*, Mr. W. COLENSO gives a brief "Memoir of the first artist who visited New Zealand." This was SYDNEY PARKINSON, who accompanied Mr. (afterwards Sir JOSEPH) BANKS, and whose excellent drawings of New Zealand plants are in the Banksian collection in the British Museum. "Unfortunately this good, able, and active young man died at sea on the voyage home." His brother, STANFIELD PARKINSON, subsequently published his journal, though not without encountering the most determined opposition from Sir JOSEPH BANKS and Dr. HAWKESWORTH. The latter even obtained an injunction in Chancery to prevent the printing and publishing of the work, though subsequently PARKINSON succeeded in his prayer for a dissolution of the injunction. In his sympathy for SYDNEY PARKINSON, Mr. COLENSO seems to take it for granted that his brother acted right, and was badly treated by BANKS and others concerned. Whoever was right, there is no doubt that the memory of SYDNEY PARKINSON suffered through this disagreement, in which his brother forfeited the friendship of several of his Quaker friends, including the well-known Dr. FOTHERGILL, as well as incurred the displeasure of BANKS. In his preface he accuses the latter of robbing him, and as the book is now very rare, COLENSO hints that it was bought up and destroyed.

—— MAGNOLIA GRANDIFLORA. — Amongst the many objects of interest to gardeners to be seen in the horticultural section at the Paris Exhibition is a group of handsome pyramidal trees in tubs of this noble foliaged plant. They are all about 15 feet high, are perfect in health and development, and are exhibited by M. L. PAILLET, of Chatenay les Sceaux. In the beautiful garden of the Little Trianon at Versailles there is also a remarkably fine specimen—a large round headed tree—growing in the open air in front of the orangery.

—— SAPONARIA CALABRICA.—Mr. A. FORSYTH writes thus of this annual:—

"When I first grew this plant it was not more than a couple of inches in height, with a charming colour, but now we see it in quite another character, and although still dwarf as compared with many annuals it is too long in the leg and too small in the flower, while the deep colour that it had when I first made its acquaintance is by no means maintained. I used to sow it in the autumn, and it stood the winter in Devon, and it flowered early after the fashion of many Californian annuals. The rosy-pink flowers completely hid the foliage and the soil like a carpet. Now I can see no other reason for this great change in the plant than that the seed-time is altered; and I would therefore ask my friends to try the old plan of sowing in autumn to get short-stemmed plants and bright colours, with flowers much larger than those we see in the gardens. The plant, although still pretty, does not give one the surprise it used to give when it was new to our gardens, and made itself manifest at some distance. The colour is still good, and we can ill afford to lose the services of such an effective annual. Perhaps the lady gardeners might be induced to protect and patronise this pet so easily got from seed, and so get it into its proper position."

—— ABUTILON VENOSA.—At the late Versailles show a conspicuous object in one of the supplementary tents was a very fine bushy-headed tree in full flower of this very useful white Abutilon. It must have been quite 6 or 7 feet high, and about 5 feet through, and was growing in a large round tub. In many a conservatory such a specimen would prove a welcome change, besides being useful for the supply of cut flowers which such a fine specimen would afford. We were unable to ascertain the name of the grower, and so are unable to give him credit for his exhibit.

—— THE SILVER WEDDING OF THE KING AND QUEEN OF THE BELGIANS.—The Federation of the Horticultural Societies of Belgium was determined not to be behindhand on this occasion. An appeal was made to the leading Orchid-growers of the country, and on August 20 a very large mass of flowers, received in answer to the appeal, were duly arranged by M. VAN DRIESSCHE-LEYS, of Ghent. The bouquet was presented by a deputation from the federated societies, including most of the leading Belgian horticulturists. The bouquet was of enormous dimentions, including superb spikes of Dendrobium, Saccolabium, Cypripedium, Masdevallia, Odontoglossum, &c. Certainly the King deserves the gratitude of the Belgian horticulturists, but we question the good taste of these enormous bouquets.

—— HORTICULTURAL EXHIBITIONS.—A provincial newspaper last week had in its columns a report of six horticultural shows held within the radius of its circulation during the preceding week. This simple fact affords useful evidence of the large number of shows there in existence, and of the valuable work they are accomplishing.

—— M. LEON DUVAL'S GLOXINIAS. — The magnificent display of Gloxinias made by M. LEON DUVAL, of Versailles, at the late show held in that historically interesting town, tempted us to pay his nursery a visit, and very well indeed were we repaid for "hunting him up." The Gloxinia is the all-prevailing speciality in M. DUVAL'S establishment, and he grows annually about 20,000 plants, including a vast number of seedlings, some of which even at this late season were in bloom, and well exhibited the great excellence of his strain, though not being named it would be useless to indicate them individually. The named varieties, and seedlings selected for further trial, are all propagated by the leaves, and mostly grown on in dung-lined frames, where they develope such a wealth of foliage, and as a natural sequence of flowers too, that we have never seen equalled, much less excelled. Whether they are planted out in the frames, or grown in pots, the soil is the same—sandy peat; and it is worked up so lightly in the frames, and put into the pots with so light a hand, that after the tuber has been planted there is no difficulty in pushing one's fingers right into it. At other places that we visited, where the Gloxinia is grown to perfection, and notably so at Ferrières, Baron ALPHONSE ROTHSCHILD'S fine estate near Ozoner la Ferrière, the same system is adopted, and no doubt in this practice lies the secret of their success. We pot them as a rule in too firm a compost; and our growers would do well to make a note of this. When the plants have made a good growth and are showing signs of flowering, M. DUVAL gives them an occasional application of liquid manure made with dried blood, a valuable stimulant no doubt, but any other would answer the same purpose when that cannot be obtained. M. DUVAL grows Gloxinias like weeds, as any one may see who will visit his nursery, and we cannot do other than compliment him on his skill.

—— SCOTTISH HORTICULTURAL ASSOCIATION.—This Association held its ordinary monthly meeting on Tuesday evening, the 3d inst., in 5, St. Andrew Square, Edinburgh. There was a large attendance of members. The President occupied the chair. After the usual routine business, Mr. A. MCKINNON, Melville Castle Gardens, read an excellent paper on the culture of the Peach. He described its early history and introduction into this country, and referred to the many difficulties that attended the growing of Peaches in this northerly latitude. He also spoke of the various means that were adopted to combat the evils referred to, and explained the pruning generally required by this tree. He concluded by stating that, after taking into account all the facts of Peach culture, it was necessary to have a glasshouse heated to insure a crop each season. A spirited discussion followed the reading of the paper, some of the members contending that artificial heat was not needed in ordinary seasons to produce a crop, each side citing instances of failure and success with and without the application of artificial heat. Mr. JOHN DAVIDSON, of Messrs. DICKSONS & Co., next read a paper on the culture of fruit trees generally pursued in the nurseries. After speaking of the ignorance that generally prevailed on this subject, he detailed the system of budding and grafting, mentioning the different stocks required for different trees, and the adaptability of certain stocks for various soils, and urged the more general planting of fruit trees for profit. Mr. ROBERTSON MUNRO made a few remarks on autumn flowering Chrysanthemums, exhibiting twelve sorts at present bearing a profusion of bloom. Miss HOPE, Wardie, sent some beautiful flowers of Dianthus atropurpureus, raised from the Chiswick strain of seed. Messrs. DOWNIE & LAIRD exhibited two fine new Phloxes, named Lady Belhaven and Mrs. Bowyer. Mr. JOHN BROWN, Dalkeith, exhibited the wonderful growth of a Rose from a cutting put in on April 27 this year. Mr. WM. BLACK exhibited a curious Lobelia, with blue and white flowers on the same plant. Mr. MCLAUCHLAN exhibited and explained the working of one of his verge-cutters. Mr. A. MCINTOSH, Paxton House, received a certificate for an excellent new round Potato, named Premier White, of unexceptional qualities.

—— ESPARTO IN TUNIS.—After what has been so often said of late regarding the scarcity of Esparto-grass, and its probable exhaustion owing to the great demand for paper-making, it is satisfactory to learn, on the authority of the British Consul at Susa, Tunis, that although the competition between Tunis and Algeria in the supply of this grass becomes more and more felt, the quantities in the Oran districts seem inexhaustible, and the railways lately completed offer the collectors there every facility for bringing it to places of shipment. Owing to the calamitous droughts which prevailed in Tunis in the autumn of 1876 and

the spring of 1877, the Esparto trade fell off considerably, added to which the demand for Tunisian grass is much less than that for Algerian, consequent on the heavy export duty imposed upon the former, while the latter is free. If this heavy impost is still maintained it is feared that the Oran grass will beat the Tunisian altogether out of the field. The Esparto of Tunis is said to be superior in quality to that of Algeria, being second only to Spanish grass. As much as 44,500 tons of Esparto are said to have been exported from Tripoli alone in 1876. Although most of the Tunisian Esparto comes to this country from Susa, yet the quantities collected on the more southern coast and shipped at Spax and Gerba are very considerable, and may eventually exceed those at Susa on account of shortness of distances and conveyance by water, rather than by camels, which is always costly. "It is brought during a few months of the year, loose in bundles, from a number of places to Spax and Gerba in boats, containing from 2 to 20 tons. A good deal comes from Shebbah, some 35 miles to the north, and not an inconsiderable quantity by land transport from Agareb, 20 miles inland. From the hills of Hamamah also and Zlass large supplies have lately been sent. Much comes from Shirah, 50 miles south, during four months of the year. Here, at two or three days' journey inland, the grass grows over a large tract of country, as is the case at Gabes, a name pretty well known, and some 30 miles further south, round the coast. Here the Akariat flows into the sea, being one of the few rivers in this country which sends water to the sea all the year round. It irrigates a strip of land about half a mile in width on its left bank, extending many miles up its course. Here a luxuriant vegetation is seen, in strong contrast with the bare plains around. The staple product is the Date of the different qualities consumed in the country." Much difficulty is experienced in getting the bales of grass down the rivers to the ports. As an illustration of this difficulty, the bank of one of the rivers is described as being so high and steep that the bundles of grass have to be pitched over into the barges beneath. The Esparto growing nearest the coast of course becomes exhausted first, and that which has to be sought for further inland can only be procured at an increased cost. On the whole, it seems that a great deal more Esparto would be exported from Tunis, were it not for the prohibitive duty. It is on this account, and not from lack of material, that its cost has increased in this country.

—— CULVERWELL'S AUTUMN MARROW PEA.—This fine new Pea, raised by Mr. W. CULVERWELL, Thorpe Perrow Gardens, Bedale, and to which reference was made on p. 209, was exhibited at the annual show of the Bishop Auckland Horticultural Society, on August 30. Its value lies in its late character, in the size and handsome appearance of the pods, which much resemble those of Superlative, but, unlike that puffy imposter, the pods, which are very long, are filled with large Peas. It found much favour among the gardeners assembled at Bishop Auckland, who particularly fancied it as a valuable late variety for table, as also for exhibiting in August. Mr. CULVERWELL reports it to be a capital cropper. It is a wrinkled marrow, and grows to the height of 6 feet.

—— HARRISON'S NEW MUSK AS A FORCING PLANT.—To the many excellent uses to which this plant can be put may be added that of blooming in winter and early spring. Mr. J. MCINDOE, Hutton Hall Gardens, Guisborough, uses it largely in this way, putting in cuttings in October, which quickly grow into fresh and vigorous young plants, which flower with great freedom in winter and spring, and are very useful for conservatory work. What a splendid basket plant this Musk makes; and if grown in combination with the pretty mauve-coloured Convolvulus mauritanicus it is charmingly effective. Cottagers who make a point of growing the Musk as a window-plant are finding out the value of HARRISON'S Musk, and are growing it in place of the old type. It certainly surpasses it as a continuous blooming plant.

—— TUBEROUS BEGONIAS. — The most distinct new varieties of tuberous-rooted Begonias that are noted amongst the number exhibited at the recent Versailles show were Madame Thiers, a large semi-double pink, which may not inaptly be described as Anemone-flowered; Défenseur de Belfort, a very large orange-scarlet; Edmund Puteaux, of the same size and style as the la-t, but of a darker shade of colour; M. Albert Truffaut, a fine scarlet flower with a light centre; and Amie Cessier, a nicely-formed orange-scarlet flower. These are all good, but Madame Thiers is the best. The exhibitor was M. Lateaux-Chambault.

MIGNONETTE:

RESEDA ODORATA.

THIS hardy and fragrant annual herb is so well-known that it seems almost affectation to give it a botanical name. When Mignonette is sown it sends up two pale yellow seed leaves, as if it had fared badly in its first contact with the earth that is to nourish it, and after a time a miserable weedy looking plant appears. Those who look to make a display with Mignonette may be told that it has no conspicuous petals, but though scant of flower it is strong or rather delicate in scent, and its wondrous sweetness is peculiar to itself—it has no proxy, or fellow, and rival.

It is an annual, generally speaking, although we may have Tree Mignonette trained standard fashion, and I have seen Mignonette three years old, where it has been kept in a greenhouse and not allowed to flower, but this is more a curiosity than an effective display. Improvements have been made lately, and one handsome variety raised, which is duly advertised in your columns, but I speak here of the treatment of the normal form, as it was with that kind that my experience was gained.

When I lived at the West-end of London some nurseryman kept a man to grow his Mignonette for market, and paid him handsomely, and it found its way to the windows of the aristocracy regardless of the high price set upon it. It could be grown in a 48-sized pot, but a 32-size was best suited to it; and when it had got about 6 to 9 inches in height it was tied up within three lath props and matting ready for the user, and in that state left the grower's hands. But what concerns us most is the way that these professional growers got up the splendid samples of Mignonette which they exhibited at such untimely seasons as February, March, and April—the London season properly so called.

At Thorneycroft, Cheshire, I saw a fine sample of Mignonette growing on a Vine border that had just been renewed, and on which the gardener would not allow any crop, but just sprinkled a few seeds of Mignonette to hide the red earth. The thin sowing and the maiden loam did all the work, and the effect produced was a perfect bed of this fragrant herb, each plant branched like some old Oak tree.

I once had occasion to plant a very steep bank of earth with Roses, and in order to keep up the bank and to support the plants large stones were stuck in. In short, it was made rockwork—a series of stone shelves; and in order to give finish to the work some riddled soil—peat, loam, and sand—was made to fill in all the spaces where it could lie, and by way of hiding the bare earth a thin sprinkling of Mignonette seed was carelessly cast over the whole, but certainly not more than one or two seeds to the square foot. It grew most luxuriantly, standing about a foot in height; and as it was on high ground alongside a raised terrace its odour was felt for more than a furlong, whichever way the wind carried it. Mignonette is said to require fresh soil every year, and, like Clover and many other plants, gets sick of the same soil year by year, and my own experience tends quite that way, for new soil or maiden loam suits it best. Now there is no doubt that thin turves from an old pasture, with the fine fibrous roots holding them together, will grow Mignonette in pots, and if carefully watered will winter them in cold frames nicely in green winters—those with only moderate frosts, admitting air freely on fine days, but watchful of every change, for neglect is death in this case.

But some may say, Why all this fuss about this tiny plant? The answer is plain. Pine-apples can be grown in foreign lands and brought here in high condition; so say the best judges, and they cease to be growers of this king of fruits. But there is no fear of importations of Mignonette in pots, and its character is established. Most fragrant plants, like the Rose, delight in plenty of rotten dung, as if they needed such strong stimulus to do their work. Now, whatever may be done with Mignonette in summer is no rule to go by in winter, for in fine weather it grows like a weed; and in winter, when it can get a shelf in the front of the greenhouse, it gives no trouble; but this is rather keeping it than growing it, and it is very apt to draw up long and slender if away from the glass. Now the professional grower has the happy knack of having it nicely stunted, stiff, and bushy. Six-inch pots save so much watering in winter, and thereby save the crop from damp and injury from cold. There is scarcely any branch of horticulture so liable to abuse as watering in winter. A pot of wet earth will be a lump of ice, whilst a pot of fine dry fibrous loam will be safe. The fine threads of the fibre itself being vegetable matter are of some service, as it has never borne a crop before. It is said that decayed leaf-mould will suit any plant; perhaps it may, but the practical gardener must have a safer guide than such generalities.

I recollect well when collections of succulent plants were grown in lime rubbish according to the books, but when Mr. Green exhibited at Chiswick a cone 3 feet high, and as much in width, of an Epiphyllum in full bloom, grown in loam and dung, we all took the hint, and followed his leading. Who knows but that the family of the Hendersons, originally of Pine-apple Place, Edgware Road, London, may have copied some successful grower of Mignonette, for they did it long and well. Surely there can be no harm in examining what sort of soil the plant has been grown in after it has done flowering; this will give a clue to the raw materials, but the skill of the grower is hard to be got hold of. Maiden loam, leaf-mould, and silver-sand, are all safe ingredients in this line for culture under cold frames, and dearly-bought experience must do the rest. *Alexander Forsyth.*

PENDELL COURT.

AT the foot of the chalk downs near Bletchingley stands a mansion built in the time of the first James—an excellent specimen of its class, pictural, substantial, comfortable, with square-headed, straight-mullioned, oriel windows, open porch, projecting bays, and clustered chimney-stacks. The national prosperity waxed great in the reign of Queen Bess; and for this reason is it, probably, that so many country mansions are still to be found built in this style. With the mansion itself we are not concerned in this place further than to note that the garden is in harmony with the building, and does not present those violent contrasts we sometimes meet with.

Nature has done much for this garden and its surroundings. Soft undulations, wood-capped, and with green valleys, letting in more distant views, form as it were the setting for the garden itself, which is nearly level, or slightly sloping to a piece of water, so artfully managed by the designer that it is difficult to realise that this pretty natural-looking lakelet, with its flower-decked islets, was only a very few years ago a straight ditch. The margins—those tests of an artist's work—look as though they had been framed by Nature herself, and the numerous water-fowl add to the illusion. The walls of the mansion are covered with choice climbing plants, such as the blue-berried Vitis humulifolia, Akebia quinata, many Roses, Clematis, &c. In a snug corner between two wings of the house is a small plant of Chamærops Fortunei, which has been in its place for some winters unscathed. The Olive also is unhurt so far. Tree Ferns are placed in the midst of the Rhododendron beds, the plants being knocked out of tubs in the spring, and planted out, to be lifted and re-tubbed in the autumn. On the stem of one of these Tree Ferns may be seen growing a Pteris and a tall plant of Erigeron canadense, which have sprung from seed or spores imported with the Fern itself. On the lawn near the house is a small bed of tuberous Begonias, the rich crimsons of the hybrids going well with the yellow flowered B. Pearcei. This little bed is one of the most successful of its kind that we have seen. Bedding-out, however, is not made a special feature here; enough of it is carried out to secure variety; but Sir George MacLeay and his gardener too are both of them too good plantsmen to be satisfied with mere displays of colour, however attractive. It is, then, to the herbaceous borders, the shrubberies, and the plant-houses, that we must look for the special characteristics of Pendell Court gardens.

The herbaceous border stretches for a long distance under the sheltering lee of an old wall, itself capped

with velvety moss and fat Stonecrop. This border is richly stocked with herbaceous plants, tall and short, proudly uprearing their coronets of gold, or forming a carpet of green along the margins. In the spring this border is filled with bulbous plants, Narcissus and Tulips, Hyacinths and Squills; but when we saw it in August little or no trace was to be seen of these plants quietly awaiting their turn in the coming spring. To enumerate a tithe of the fine things to be seen in this border would be to write a catalogue. We must content ourselves with the mention of a few of the more conspicuous plants, arranging them in a manner which may possibly be serviceable to others. Taking low-growing things first, such as are suitable for the front rows, we could but notice the beautiful carpet made by Frankenia lævis, and by Margaricarpus setosus, a plant remarkable for its neat prostrate habit, deep green pinnate leaves, with linear segments and inconspicuous flowers, the latter being succeeded by white pearly berries which have suggested the name. It seems hard at first to recognise a Rosaceous plant in this pretty undershrub, nevertheless inspection shows its near affinity to Alchemilla and Agrimonia. Ballota acetabulosa is a remarkable plant from its densely woolly or hoary leaves, and its very large cup-like calyces, in which the relatively small purplish corollas are set. Artemisia glacialis is a remarkably neat habited hoary leaved plant, the leaf segments being elegantly cut. Borago laxiflora, with its pale blue flowers, supplies a colour not common in flowers. Of taller growing plants we noted Rudbeckia laciniata and purpurea, Eryngium serra, a plant of stately aspect, but deficient in colour, a defect not shared by the intensely blue E. amethystinum. Monarda purpurea, with its whorls of lilac-purple flowers, should be in every similar collection, as should also Achillea corymbosa, a regal Milfoil, with fine heads of golden-yellow flowers. Lysimachia clethroides and some allied species with their elegant spikes of white flowers resemble some of the shrubby Veronicas, and are excellent for bouquet work. Helianthus orgyalis is a most effective plant here; its proper place is backed up by dark shrubs, when its fine masses of linear drooping leaves suggest the idea of so many cascades in miniature. Aralia Hendersoni is striking in foliage, which recalls that of the widely different Actæa. Its panicles of white flowers are very effective. The Globe Thistles, Echinops, are sure to attract attention from their singular appearance, and, as in the case of E. Ritro, bright colour. Polygonum Sieboldi is a graceful bushy-looking plant, which is also sure to court notice; but the little leafless Ephedra has charms only for the botanist. We must not attempt to enumerate more of the inmates of this rich border, the numerous Asters, the Silphiums, the Helianthus, and others that were making the borders gay; enough if we have succeeded in conveying some notion of the richness and variety of the collection, and of the care and accuracy in the nomenclature of the plants. At the end of this border is a small rockery and fountain, strongly charged with iron.

Retracing our steps towards the house, and starting again along the long walk on our right hand, we noted, under the shelter of some high shrubs, which cast a shade and keep the bed moist, such a belt of Primula japonica as we have nowhere else seen. The plant was not in bloom at the time of our visit, but the vigour of the plants and the size of the foliage were extraordinary. In front of these, also out of bloom, but evidently thriving, is a fine collection of hardy Orchids, such as the noble Orchis foliosa, the lovely Cypripedium spectabile, and other species; but the time for these had passed. Near here was a fine plant of Olearia Haastii. Rubus Eglanteria is remarkable for its fragrant leaves. Mimulus alatus has blue flowers, hardly suggestive of its lineage, and the same may be said of the noble Hyacinthus candicans, which proves quite hardy.

Protected by sheltering shrubs are some interesting "sub-tropical" plants, notably a Solanum-like plant with bold cordate ovate leaves, and stems as thickly clad in the upper part with greyish scales as the root-stock of a Fern. Passing under an arch devoted to Clematis and other climbers, we come, on the right, to a sunk garden of oblong form and geometric design, the beds filled in with bedding-plants of the usual type; this sunk border with its sloping banks and geometric parterres is in strict harmony with the architectural character of the mansion and the long wall bounding the herbaceous border. Near it is a wirework arcade or temple, covered with Clematis Jackmanni and other varieties. Further on, we note the fine Saxifraga peltata, more like a Rhubarb than a Saxifrage, and then low banks of rockwork, tenanted, like the herbaceous border, with all manner of interesting plants, such as the curious Fuchsia procumbens figured in our columns, 1874, vol. ii., p. 291; Sedums, Sempervivums, close-growing Thymes, and in damp spots Sarracenias and Darlingtonia.

Turning off to the right, across the well-kept lawn, we come upon the lake, with its islands all aglow with Tritomas, besides which such things as Epilobiums and Lythrums pale their ineffectual fires. At one end of the lake is a noble clump of Gunneras, G. manicata, here far exceeding in the magnitude of its leaves (4 feet across) its near ally G. scabra, growing in juxtaposition. A nobler composition than this group of Gunneras on a slightly sloping bank at the end of the lake, with a thriving young Oak as a background, would be difficult to realise. Passing round to the further side of the lake we come to a portion of the garden only lately annexed, but planted with Rhododendrons and with masses of annuals interspersed. So treated the annuals are very effective, and their weedy character is not so apparent as usual. From this point the golden-leaved Elder planted at some distance glows with a splendour that only the golden-leaved Catalpa can rival. Yuccas, Tritomas, Lilies, have their separate quarters devoted to them, Lilies being also scattered about in various places. L. auratum was doing well, but we learnt that some of the other species had not asserted themselves so well as might be wished.

Nor must we omit to mention a fine Weeping Ash, grafted only three years since on a tall standard, and now over 30 feet high—a beautiful object with its slender pillar-like stem and crown of drooping foliage.

THE FERNERY.

The house so called was once a Mushroom-house, but it has been transformed into a delicious fernery, suggestive of a ravine in a tropical forest rather than a greenhouse in the county of Surrey. Walls and rafters are alike covered with moss, kept in place by wire-netting; and amid the moss, in all directions, protrude Ferns, Begonias, Bromeliads and Gesnerads, the mottled leaves of the Begonias, and the bright flowers of the others yielding an element of colour too often lacking in similar houses. Fine plants of Platycerium alcicorne break up the monotony of finely-cut foliage, while at one end of the building is a patch of Thamnopteris australasica delighting the botanical visitor with a like impression to that which he would experience if he came upon a number of the plants in their native home. So successful is this fernery that it is with no surprise that we learnt that it is proposed to extend it in size. From the fernery we pass to the cool Orchid-house, where, in addition to the Orchids (few of which were in bloom at the time of our visit), were some thriving Todeas and Hymenophyllums and a pretty little plant of Impatiens Jerdoniæ, with its striking red and yellow flowers. In an adjoining house is a fine collection of Cypripediums and Cattleyas. This house opens into a corridor filled with various interesting succulent plants, while Bomareas and other fine trailers occupy the rafters. From this corridor access it also obtained to a large span-roofed tropical house with a tank at one end, a very garden of delight to the botanist. In a central bed are planted out fine tropical plants like Browneas, Hevea brasiliensis, Posoqueria longiflora, Bauhinias, Ravenalas, Carolinea insignis, the scarlet-flowered Goethea, Pandanus Veitchii, Dillenia speciosa, noble Marantas, Palms, Tree Ferns, Gardenia Stanleyana, Dioscoreas, Mackaya bella, a fine plant of Lycopodium dichotomum, very suggestive in appearance of a fine-leaved Abies like A. Smithiana. A carpeting of Selaginella with such things as Fittonia and Episcia fulgens, with its dark leaves marked by a central white stripe and its scarlet flowers, add to the natural look of the house. Cyrtandra bicolor is another noteworthy Gesnerad to be seen here, with dark bronzy leaves and primrose-coloured flowers. The tank is filled with Nymphæas, Nelumbiums, Papyrus, and the usual occupants of such structures. Palms in the summer are here treated as semi-aquatics with great success. We must not omit to mention one of the finest ornaments of this house—Carica cauliflora. Its columnar unbranched stem nearly reaches to the rafters, terminating in a crown of noble palmate leaves larger and not so deeply cut as in Carica Papaya, and therefore bolder-looking, but the main feature about the plant is its habit of throwing out its masses of white Stephanotis-like flowers on long stalks from top to bottom of the otherwise bare stem. We understand that the plant remains in bloom for months, and it is certainly strikingly beautiful. The Papaws have always had the reputation of making meat tender when hung among its leaves, and the recent researches on the so-called carnivorous plants suggest the notion that these plants have similar properties. At any rate we believe that Sir George MacLeay intends to try the experiment.

Near this house is a lean-to stove also containing some interesting plants, such as a noble plant of Medinilla magnifica and a variety of rare or interesting creepers, among which we may note the grotesque Aristolochia brasiliensis, the singular Ceropegia Saundersoni and Gardneri, various Passion-flowers, and among them the rare and scarcely known P. Hahnii (p. 305, fig. 55). In this house, as in the foregoing, the plants are planted out in a bed which occupies the greater part of the house, a side stage accommodating the pot plants.

It must not be supposed that the fruit houses and kitchen garden suffer for the loving attention paid to more ornamental but less useful plants. The kitchen garden within the walls is small, but it is admirably cropped. The vineries have been but recently established, and at present have no features that need be recorded here. The orchard-house, however, is sufficiently remarkable, as the trees were, we were informed, turned out of pots in the spring into the border. The trees are some 4 feet high and bear 12—20 Peaches. The Nectarines especially were of the richest colour we ever remember to have seen off an exhibition table. The back walls are devoted to Plums, Cherries, and the like. The border is some 4 feet deep, of good loam, turf, and broken bones.

Longer enumeration of the treasures and beauties of this garden would weary the reader. We shall have failed if we have not conveyed the impression that this is no ordinary garden, if we have not made it apparent that an intimate knowledge of and a thorough love of plants for their own sakes are the guiding principles of the courteous proprietor, who is fortunate in having as his gardener a man so thoroughly sympathetic with his master's tastes and with so wide a knowledge of plants and of their management as Mr. Green, who matriculated, as it were, with the late Mr. Borrer, graduated under Mr. Wilson Saunders, and is now appropriately superintending the gardens of so accomplished a naturalist as Sir George MacLeay, whose knowledge of New Holland plants in their own clime and general scientific attainments are of the greatest service in the management of his garden in Surrey.

NOTES ON FRENCH HORTICULTURE.

ASPARAGUS.—The literature of Asparagus culture would fill a fair-sized library. Articles and pamphlets without number have been published about it in England, and they seem to be almost as numerous in France. Hardly had it begun to appear that yet another Englishman was interested in the matter than pamphlets, instructions, catalogues, on the culture *des Asperges* began to arrive. It was, however, slow work to understand these, and as I was fortunate enough to obtain the personal company and introduction of M. Joly, a gentleman well-known to French horticulture, to some of the most successful growers of Argenteuil, the latter of whom were courtesy itself, it will be more interesting and instructive to describe what I saw than what I read. There may not be much new to tell, but the tale cannot be too often told until the English Asparagus equals the French in size.

To those who like myself have been running down bare fallows in fields and gardens for years as alike wasteful and unnecessary, it was rather humiliating to find that the Argenteuil growers attributed very much of their success to this old-fashioned mode of ameliorating, enriching, and warming the earth. Having seen a good deal of close-cropping in the market gardens around Paris, it was a sudden surprise to come upon considerable spaces of ground wholly destitute of crops. Neither was the fallow ground roughed up — on the contrary, the surface was smooth and free from weeds, as if it might have been hoed and raked. At intervals of 30 inches or 3 feet there were, however, small raised ridges from 8 to 14 inches high. These were also fine and even

rather than rough, in fact the soil was so finely comminuted that it could hardly be made to stand up rough, if this had been attempted. But no effort seemed to have been made to make it do so. The summer culture of this fallow ground consists in keeping it free of weeds.

Neither did the ground seem particularly rich nor full of manure. It had been dunged early in the winter, but not very heavily. The cultivator dwelt little on the richness of the soil, but very much indeed on its fineness—taking up handfuls and scattering like dust out of his hands, to exhibit its extremely fine condition.

Being kept clear of weeds and crops through the season the earth also absorbs much heat and all the quickening and enriching gases of the atmosphere. The raised ridges, too, at such considerable distances get fully exposed to solar and atmospheric influences, and get warmer, richer, finer than the soil on the flat. These ridges are made, in fact, with the single or chief object of manufacturing a superior earth for the roots. Exposed to the heat of summer and the cold of winter, vivified by the quickening breath of the following spring, these ridges of ripe mellow earth, split down the middle from an inch to four or five below the surface level of the ground, form the best possible soil for the Asparagus roots to strike away into at once with strength and vigour.

The French attribute much importance to a free and vigorous start, and this thorough preparation of the soil is one of the best means for insuring it. Not that all French growers sacrifice a year's crops by fallowing the whole of the ground intended for Asparagus the following year, but where the highest results are aimed at the bare fallow is adopted, as I had ample opportunities of seeing at Argenteuil.

Nor does the principle involved in the fallowing of land end with the preparation or the ground, or the planting of the Asparagus. The wide distance apart between the plants—the incessant movement of the soil over, off, and on to the roots, and the care taken by staking and earthing up to keep the tops as near as can be vertical over the bottoms, expose the earth between and around the plants as much as possible to sun and air, and powerfully tends to keep it rich and sweet as at first. The French, in fact, attribute far more importance to the surface culture of the soil than to its depth. It is a common saying in English gardens that soil cannot be too rich nor deep for Asparagus culture. This saying is not seldom verified by fine fat facts, that is, examples of Asparagus of unusual size, crispness, and sweetness. Some of the finest Asparagus ever seen by the writer in an English garden was grown on the crown of an old ditch that was termed bottomless. The roots had made a rush for the bottom of it and the tops had bounded off in the opposite direction with amazing strength and size, to the delight of the cultivator.

But the French neither advocate nor practise deep culture, the ground being seldom cultivated to a depth greater than 18 inches or 2 feet. To this, however, there is mostly added from 6 to 8 inches of earth over the crown throughout the growing season. This is virtually so much added to the depth of the Asparagus roots, and the earth being so fine and loose it probably represents more food and protection to them than a similar depth of ordinary earth. Be that as it may, this movement of the earth twice a year from off and on to the crowns constitutes a most important process of earth culture, and is a vital feature in the culture of French Asparagus. The earth is always laid up in a semi-ridge form either over the crown or midway between the rows.

Next to their care about the earth is that in the selection of their plants. Each single plant stands for far more in the French system than the English; hence, partly, perhaps, their extreme care in the saving of seeds and the selection of plants. Both have been carried to such perfection for many years around Argenteuil till several clearly defined forms have been developed and confirmed, differing from each other in earliness, size, habit, colour and quality. When a single plant occupies a square foot its individual quality is obviously of far less moment than when each plant fills a square yard or more, as in the French system of culture. Judged, too, by the test of price, we found the so-called different sorts of Asparagus differing as widely as from 1 franc to 10 francs. The whole of this wide difference was not owing to the size, but a large part of it at times attributed to quality; in fact, some of the Argenteuil growers, such as V. T. Lebeuf, Louis Lherault, and others, call their Asparagus after their names, just as our nurserymen at home christen their Beans, Cauliflowers, and Cucumbers. This alone proves the careful selections that have been made. In endeavouring to fix upon some general characteristic on the spot as the more prominent feature of the finer varieties, I found as a rule that the more tall and upright-growing plants invariably produced the finest heads. Mons. Joly also confirmed the truth of this observation, and I was advised by others never to plant the dense-spreading squat plants of Asparagus, as they never grow fine heads or stems—in other words, the fewer and higher the stems, also, and of necessity, the thicker, and that in accordance with the law of the concentration of force. Not only are the best plants placed in the most suitable positions, but each has ample space afforded it for its full development. The average distance at Argenteuil is 4 feet by 3. Each plant has thus sufficient earth and air for its full development. Instead of a crowd of units, there is seen a stately array of giants, and the produce bears a true relation to its progenitors, for it is as obvious as that two and two are four that fewer and larger plants, provided they grow well, will yield finer produce. Whether, however, the ground yields more gross weight on the French plan may be questioned; but as, in Asparagus, size largely determines value, the larger grass is doubtless far more profitable, though it may not prove the heavier in the gross.

The plants are assisted in various ways to do their best. Salt seems little esteemed or used. Artificial irrigation, either with foul water or clean, is but little adopted about Argenteuil. Even manure in any large quantities is but little employed, and that generally at intervals of two years; but the plants are staked-up or fixed with lines to prevent them being broken down or twisted off, and every spring the earth is heaped up over the crowns to a depth of from 4 to 6 inches; this is removed almost to the crowns in the autumn, at which period a little rich compost or manure is scattered over them to remain all winter as a feeding mulch. This process of mounding is supposed to have an invigorating effect, only an inch or so of earth being left over the crowns. Others take still more trouble, such as picking off the seeds, removing all insects, &c. There can be no question that the removal of seeds will tend to strengthen and enlarge the crowns and produce finer Asparagus.

One of the facts that most deeply impress one in the midst of the Argenteuil Asparagus is the amount of labour bestowed upon it. The natural character of the soil the growers assured me was of little moment, neither has it chemical constituents, nor poverty, nor richness of most vital import. The great point was its mechanical texture, and this almost everywhere was so friable and fine that the mere fingers would bare the roots of the giant plants down to the fangs in a moment, though those in full bearing had mostly from 8 inches to 1 foot of earth over them. The growers are obviously enthusiasts, and hardly is a question put relating to stem or root till either or both are bared, with the hands only, which are also largely employed in gathering the grass, though a goodly array of Asparagus knives, saws, and other gatherers are displayed in the department for horticultural implements in the Paris Exhibition. The French are also careful planters, choosing chiefly March and the first fortnight in April for the purpose. They seldom sow their permanent beds and plant mostly with one, or at the oldest, two-year-old seedlings. During the first year's growth any plants that show a weak drooping habit are weeded out so, that only the true strains are left for final planting.

The manner of planting is also a speciality, and is only possible in a fine friable soil. The long ridge is broken down with the hand, and a small hollow, ranging in depth from 3 inches to 6 inches, is made with the hand. In this the plants are placed with their roots displayed, like the feelers of a star-fish, they are then covered with an inch or two of fine compost if available, and another inch or so of soil is added, and the planting is finished. On poor soils a little better stuff may also be sprinkled over the tops. But the compost over the crown and the mulching of manure on the surface are quite the exception: generally only the soil is employed. The Asparagus is kept clean, moulding up and denuding annually, up to the third or the fourth year from the stool, before any is gathered; it has thus time to ramify and strengthen in every way. Some growers crop between for the first few years with salading, &c., but this is not approved by the best growers. The Asparagus should have the ground from the first, and even a year before it is planted, all to itself. The apparent prodigality of space devoted to Asparagus strikes one as singular in such a densely populated country as France. Neither is it confined to this crop. Rent and labour must indeed be heavy items in the cultivation of Asparagus on the French system. But it is usually successful, and obviously pays.

Even the gathering of the crop is a work of time, and a severe trial to patience. Each stem as it shows about an inch of pink on its upper surface is traced out with the finger generally down to the root-stock. It is then nicked off as a rod of glass might be snapped in two, the earth restored that has been removed in the process, and the process of finger digging or gathering repeated. Of course other modes of getting the grass are sometimes adopted. But finger gathering is by far the more perfect and best for the plants. In the best grounds little sorting is needed, nearly every head coming up to the regulation size of from 2½ to 5 inches in circumference. Most of the Asparagus is also left intact as gathered, and the barbarous mode of cutting it all off level at a certain length, and leaving all the tender puny stems bare, and bleaching is quite unknown in the Parisian shops and markets. The French cultivators not only know how to grow Asparagus, but they have also learned the yet more rare of art of taking good care of it after it is cut. It is immediately packed in loose grass or other stuff in close wicker baskets, and kept in them in the markets till sold, so that its fresh juices are preserved intact, and its crispness also till it appears at table. The fruiterers, however, in Paris have fallen into the bad habit so common in London and elsewhere, of setting up these huge hundreds in the windows to gratify the eyes of the public at the expense of the purchaser and eater of the Asparagus. *D. T. F.*

Home Correspondence.

Corn and Grass for Trial in Queensland.—Would it not be of service to those who might aid in this useful work and have not Mr. Bailey's circular or the report of the Queensland Board for reference to be furnished (if space might be asked in the columns of the *Gardeners' Chronicle* for that purpose) with a list of the English grasses and fodder plants that have been tried or are now under experiment? Having had some communication on the subject with Dr. Bancroft, of Brisbane, during his recent stay in England, I should be happy to copy the list from the report, with the addition of such few grasses and fodder plants as I have been able, chiefly through the assistance of Mr. Wheeler, of Gloucester, to procure seeds of, and which I purpose forwarding, with samples of Wheat for experiment as to possible freedom from rust, as soon as these are in my hands. I have procured, or rather collected, a small quantity of Triticum repens (common Couch-grass), which was particularly requested, in the hope it might, though a "pest" in our damp climate, succeed in bearing the droughts of Australia, as well as the Cynodon Dactylon; and as, from previous trials, as mentioned in the report, it is especially the grasses and fodder plants, of which seeds are not usually found in our seed-shops, that are wished for, it might possibly save trouble on both sides if the short list necessary was in reach of the many whom the columns of the *Gardeners' Chronicle* constantly aid in these matters. I have tried, but without success, to procure Poa bulbosa, a grass of the Yarmouth dunes, and Carex arenaria; if any correspondent would be good enough to send a small packet it would be a most acceptable addition. *O.*

Peaches and Nectarines on the Same Branch.—As regards the question of Peaches and Nectarines growing on the same tree, it was fully discussed some years ago in the *Gardeners' Chronicle*. There is a Peach tree in one of the houses at Slebech Park, in Pembrokeshire, which bore Peaches and Nectarines for many years in succession. I have seen as many as six or eight Nectarines on in a season. Mr. Young, the late gardener, told me that it had borne Nectarines every season for over fifteen years. Perhaps the present gardener could tell whether it continues to do so. *G. F., The Gardens, Moss Bank, Bolton.*

Anthurium Dechardi.—At p. 247 I find an historical account of the old Pothos cannæfolia, which is not completely correct. Pothos cannæfolia was one of the first Aroids with which I became familiar. It bloomed in 1852 or 1853 (I cannot recall the exact year) in the royal garden of Sans-Souci, near Potsdam, which gave me the opportunity of examining it. I found that the plant had nothing in common with Pothos, and that it must be regarded as the type of a

separate genus. In the *Botanische Zeitung* of the same year I described it as Massowia cannæfolia. This therefore is its oldest scientific name. At the last spring exhibition at Ghent of plants M. Linden exhibited Anthurium Dechardi, which had been figured in the *Illustration Horticole* of the previous year. The plant was included amongst Linden's new plants. Then, as I was the president of the jury in the first division, which had to pass judgment on the new plants, I had again an opportunity of studying this plant. I pronounced it to be a variety of the old Pothos cannæfolia, a new plant, and a Massowia. Unfortunately, with regard to this genus, Schott in his excellent monograph is entirely silent. My Massowia he wrongly placed in his genus Spathiphyllum. The old Pothos cannæfolia he some years after the publication of my Massowia called Spathiphyllum cannæfolium, a name by which it is now generally known. *Karl Koch, Ems.*

Bellegarde and Violette Hative Peaches.—"R. D.," to whom I am obliged for his interesting article (p. 266), says "these Peaches seem to be identical." No doubt Galande or Violette Hâtive is sent out for Bellegarde, but they differ in four respects. Bellegarde or French Galande is larger, later, darker, and has deep dense green foliage; the Violette Hâtive or English Galande is dark and of a violet tint. The former when fully exposed to the light is purple splotched on a dark blackish ground. I have sent the true Bellegarde to the *Florist*. Out of eight Bellegardes here five at least are Violette Hâtives, the others are true. "R. D." says the Royal George is subject to mildew, which is true under glass, and that it is tender. I have thirty-one Royal Georges, thirty are out-of-doors, six facing the north, but the trees are very hardy; it is the best fruiter here, and does not suffer out-of-doors from mildew, the one under glass suffers from it. *W. F. Radclyffe.*

Dutch Bulbs.—The remarks made by "Zamy" on the action of the Dutch growers would lead to the conclusion that he regards the purchase of goods from the foreigner, and in the cheapest market, as illegitimate. No doubt the practice adopted by the growers of not only issuing retail lists to English purchasers but having here also their own agents to travel and tout for orders, has greatly interfered with the home bulb trade; but the fact remains, that they have a perfect right to do so. No doubt the wholesale buyer gets the best bulbs, and the small retail buyer the refuse, but that is the buyer's look out. To be "penny wise and pound foolish" is an English characteristic. Why do not the wholesale buyers combine and agree to purchase only at lower prices: they could then sell retail on even terms with the Hollander. *A. D.*

Pea, Sharp's Invincible.—I have grown this Pea for the last two seasons, and find it an excellent variety. This season I have grown it side by side with Marvel, Dr. McLean, Criterion and others—all excellent Peas, and I consider Sharp's Invincible second to none. Sown April 12 it came in flower June 20, gathered July 1; pods in pairs, from nine, ten and eleven Peas in each pod, very productive and flavour excellent; foliage light green; height from 2½ to 3 feet, quite distinct. Invincible Pea was shown at several of the horticultural societies' meetings in this county, and has taken prizes where shown, viz., Ruskington Horticultural Society's Show 1st prize in the amateur class; Nocton Horticultural Society Show 1st prize, and also at Claythorpe Horticultural Society Show 1st prize; at the latter show it was pronounced by the judges to be the best dish of Peas they had ever seen staged. *David Lumsden.*

The White Clove, Susan Askey.—A typographical error has crept into your columns at p. 283, concerning the beautiful white Clove Carnation, Susan Askey. It is wrongly called Susan Arkey at p. 283. As this charming flower must become very popular where cut flowers are in request, it would be as well that the correction should be made. The plant is very robust in habit, and not at all particular as to the soil it grows in. It strikes root most readily, but the knife should not be used to make the cuttings. The cutting should be taken in the right hand, holding the lower part in the left hand, then pulling the cutting out at a strong joint, and planting under a hand-glass in a shady place. In this way you may safely root ninety-nine in every hundred cuttings. The same treatment applies to all Carnations and Pinks. *William Culverwell, Thorpe Perrow.*

Salvia as a Pitcher Plant.—Some time since we received through the courtesy of Mr. E. M. Mills a curious specimen of a Salvia, in which the four topmost leaves were more or less united to form a cup—the space between the two pairs of leaves not being developed. From the axil of one of these leaves a bud proceeded, and as it grew it pressed on the united leaf-stalks, ultimately causing them to rupture and turn upwards, as in the illustration (fig. 56), where A represents the burst petiole upturned; B is the bud. This at least is the interpretation we put on this curious specimen, which affords an illustration of the manner in which the fruit of Myrtles or Roses is formed by the expansion of the top of the stem and of the calyx



FIG. 56.—PITCHER-LEAVED SALVIA. NAT. SIZE.

leaves, and the consequent enclosure and embedding of the carpels. *M. T. M.*

Harber's Worcester Fumigator.—A few weeks ago, when a correspondent inquired through our columns far a good and efficient fumigator, Harber's "Worcester" was so well spoken of by Mr. Coleman, of Eastnor, Mr. Cox, of Madresfield Court, and others, that we have had an illustration of it prepared



FIG. 57.—HARBER'S WORCESTER FUMIGATOR.

in the interests of our readers (fig. 57). Mr. Coleman—a practical man of wide experience—says that it works best from the outside of the house or pit, on account of the draught; is easily started, and creates a great saving in material, as every particle is rapidly converted into a dense volume of cool smoke sufficient to fill a large house in a very short time. There is no danger to the most delicate foliage, as it cannot flame, and all impurities are condensed and fall to the bottom.

Variegated Plants, &c.—I send you a specimen of a variegated Borage found in a field some ten or twelve years ago, and of whose seedlings about 75 per cent. come true to colour; also a variegated Ballota, both very pretty variegations. A shoot of Rosa canina, which I also enclose, is striped longitudinally with bands of yellow, but the leaves are wholly green. *J. S. Corderoy.*

Plants Above and Below.—Practice and observation have convinced me that town gardening is more a matter of sufficient moisture than anything else, not water at the roots only but also overhead—given regularly, plenteously, and with discrimination. There can be nothing to account for the disparity between London gardens and London window-boxes except this—that some are attended to regularly and others are the victims of spasmodic action. Gardens, side by side, planted with similar subjects, show most opposite results at the end of the season. The cause is not far to seek. Planted in a circumscribed space and exposed to a dirty vitiated atmosphere, there is but one chance for life for vegetation in London—plenty of nourishment to the roots, and the greatest possible cleanliness of the respiratory organs. In the Bayswater Road there are at the present time two conspicuous specimens of the possibilities of town gardening; the one is a long broad balcony opposite Hyde Park, the other an area-garden in the same locality. The first of these is richly planted with very handsome Pelargoniums, Lobelias, Ivy Pelargoniums, and Tropæolums, the latter being the dark-leaved, crimson-flowered variety, hanging in long trails and forming graceful festoons, twining here and there with the drooping sprays of the Ivy Pelargonium; both foliage and flowers are profuse and healthy, and this miniature hanging garden forms a pleasing relief to the bare fronts of the long line of stuccoed houses. In the area garden effect has been gained by an artistic grouping, many handsome foliage plants being massed together, and much good effect obtained from the free growth of that most excellent of all town outdoor plants, the Virginian Creeper. Flowers are here in a minority, but in sufficient numbers to avoid all idea of paucity of bloom; indeed for density of growth, beauty of arrangement, and general effect, this very circumscribed spot is the *beau ideal* of a town garden below stairs. *T. S. J.*

Leucojum autumnale.—At the present time there is quite a display of this neat and lovely little snowflake in the nurseries of Messrs. J. Backhouse & Son, of York. The flowers are borne in threes on very slender stems about 9 inches high; they are pure white, with a slight tinge of rose or pink near the base. Three to five flower-stems are produced from one bulb, so that each bulb, when fully developed, will have from twelve to fifteen blossoms. It thrives well in rich well-drained sandy loam in a sunny position. *R. P.*

Glass Extension at Wilton House Gardens, Salisbury.—To a gardener it is at all times both interesting and satisfactory when visiting a "brother of the craft" to find him in the execution of some chain of improvements. Whether it be in the extending and remodelling of the kitchen garden, the making of walks, and the planting and beautifying of ornamental grounds, including the formation of fountains, the laying-on of water, and the fixing hydrants at suitable and convenient places in the kitchen and flower garden—it matters not, as they are one and all interesting to and familiar with the duties of all practical gardeners. But perhaps at no time is the field of improvement looked upon with more favour and interest by the gardener than when it assumes the shape of the "helping down" of the old glasshouses to make way for new ones, or the erection of a new range on a new site. It was in the latter category we found Mr. Challis a short time ago, just shaking off, only for the time being it is to be hoped, the dust of bricks and mortar. The range of houses in question is built immediately behind the range of old vineries, which are in a very dilapidated condition simply from old age, and the wonder is that they have so long weathered the storm. The total length of the new range is 200 feet, and comprises two Peacheries and three late vineries, viz., one early and one late Peach house, each 35 feet long, 15 feet wide (inside), and 17 feet high to ridge. Two of the vineries are each 40 feet long, 17 feet wide, and 18 feet high. The central or largest house is 50 feet long, 19 feet wide and 20 feet high. Each house has a short back roof, so as to secure plenty of light on, and at the same time reduce the height of the back wall, but not to such an extent as to prevent some good shedding being built on the north side. There is a sash about 2 feet 6 inches wide on each side of the ridge for ventilation, running the whole length of the range, also a sash at the front 3 feet 6 inches deep. In addition to these there are iron ventilators 18 by 9 inches at intervals both on the front and back walls, the air through which comes immediately in contact with the hot-water pipes on entering the houses, the air at the back of the houses being conducted through hollow shafts down the back wall, which are so

arranged as to prevent the warm air passing outwards. The whole of the ventilators are to be regulated by machinery which is not yet finished. The foundations and division walls are built of concrete made from gravel taken from the bed of the river which runs through the garden, mixed with a small portion of cement and lime, as are also the rain-water tanks, fruit store (which is under the potting sheds), sheds, and covered channels for main pipes. Each house is provided with a heated water-tank, which is supplied direct from the roofs, the surplus water passing into a large reservoir situate under the sheds, which is capable of holding 20,000 gallons and from which it can be pumped into the tanks in the houses as required. All new houses should have a like provision made for the water supply. With the exception of the movable lights on either side of the ridge, the roof is fixed, the elevation being 37½, and principle of glazing is what is generally termed the dry system, no putty being used. The glass used is English sheet, 26 oz., in squares 24 by 18, which are secured to the purlins by small copper clips and tacks, two clips and four tacks being used to each square. The sides of the squares are butted and the laps at the lower end of each square come immediately over the purlin, so that looking at the roof from the inside the whole appears to be an almost uninterrupted sheet of glass, which on the outside is only broken by the rounded ends of the clips. By a simple arrangement in the manufacture of the clips all drip from condensation of moisture is effectually prevented, and all the glazing can be easily done from the inside of the house, thus the necessity of scaling the roof for this purpose is obviated. These houses, although not yet quite finished, were glazed in June last, and in order to save a season's growth the Vines were planted in the middle of that month. They consist of the following kinds:—Mrs. Pince's Black Muscat, Lady Downe's Seedling, Black Alicante, and Gros Colman. The permanent Vines are planted 8 feet apart, the ultimate object being to carry two rods from each at 4 feet intervals. Temporary Vines are planted between, in order to secure some fruit while the permanent Vines are being established. The Vines are now 18 feet long, strong, short-jointed and healthy, although scarcely any artificial heat has been used since they were planted. These houses may be truly called "traps to catch sunbeams." They are all most efficiently heated by Messrs. J. Weeks & Co., the well-known horticultural builders and hot-water apparatus manufacturers, of Chelsea, London. The pipes are furnished with the necessary quantity of evaporating troughs, each trough being about 4 or 5 feet long, and forming part of the pipe; these troughs are supplied with two taps each, one to let the hot-water, when so required, into the trough, and the other for the purpose of emptying them, and washing them out occasionally; thus the operation of filling the troughs is not only rendered simple, but a great saving of time is effected, inasmuch as all that is required is for the man in charge to walk round each house twice, first time to turn the water on in each trough, and second time *vice versâ*. The sheds are capitally built, and good provision is made in each compartment, in accordance with the special requirements of the purpose which it is intended to serve. For instance, in the potting-shed, if I remember rightly, there are several divisions immediately over the hot-water pipes (the main pipes) set apart for the different kinds of potting material, thereby rendering the temperature of the potting compost such as to prevent the slightest possibility of chilling the roots of the most delicate and heat-loving plant, the soil being in good condition for use during the most inclement weather. Whilst speaking of soil, I would remark for the satisfaction of those (including myself) not so well provided for, that Mr. Challis has his general stock of loam, &c., under cover in a large shed erected some years ago for the purpose, and in which large quantities of soil of the various ingredients appertaining to the formation of new Vine borders, &c., can be mixed and turned over occasionally till in a fit condition for use, without the slightest chance of its getting wet, and in which also can be stored away "waste" soil for various purposes in sufficient quantity for one year's demand. In conclusion, I may remark that the glass accommodation in these fine and well-kept gardens will be complete when the old vineries above adverted to have been taken down, and in their stead a range of new plant and other houses substituted. Mr. Challis is not only a good practical gardener, but also a skilled engineer, as evidenced by his having a few years ago had a wheel constructed by the water's edge, by which means, and by pinning back the water a little, he obtains sufficient force of water to work a pair of two horse-power engines. This has enabled him to have the water laid on and hydrants fixed in various parts of the gardens—gardens, the keep of which reflects great credit on Mr. Challis. *W. H. W.*

Grapes at Ernispie.—Having heard about some extraordinary Grapes which are growing in the gardens of Mrs. McKie, Ernispie, Castle Douglas, I, a few days ago, having occasion to be in the neighbourhood, availed myself of the opportunity of seeing them. There is only one small vinery about the place, but it contains some remarkably fine Grapes, reflecting the utmost credit on the skill of the gardener, Mr. Kirk. The Vines were planted in 1875, and have since made good but not unusually strong growths. There are not many varieties grown. I observed as being particularly fine, Black Hamburghs and Black Alicantes, equal in size of bunch and finish to any I have ever seen. There is a bunch of what I take to be the Syrian, from 18 to 25 lb. weight, growing on a graft put on two years ago. There are also some remarkably fine Buckland Sweetwater, and Lady Downe's Seedling Grapes; but perhaps the most wonderful is the Duke of Buccleuch. One bunch grown on a graft put on in the spring of 1877 has been cut, which weighed 4 lb. 12 oz. Another Vine on its own roots had six bunches. One has been cut and five remain, averaging at least 3 lb. each — perfection in every respect. I would say to all lovers of fine fruit who can conveniently see them, do not miss the opportunity. *Archibald Fowler, Castle Kennedy, Stranraer.*

A Novelty in Window Boxes.—We have lately fallen in with a novelty in window-boxes, a substitute for the well-known encaustic tiles and popular rustic virgin cork. The new-fangled plant receptacles are fitted with fronts of looking-glass, set in an inch-wide mahogany frame. Some persons may like and copy the idea; we do not greatly appreciate it, nor see what advantages it possesses over other less expensive materials. The effect is, in fact, at first sight more startling and bizarre than pleasing; nevertheless, the clear reflection of blue skies and verdant trees seen in these outdoor mirrors was suggestive of the possibility of picturesque effects to be attained by the use of looking-glass. Verbenas, Pelargoniums, and similar plants standing above the glass looked formal, stiff, and out of place; its capability of reflection, however, being similar to that of clear water, it might be employed with advantage where Ferns, Myosotis, Creeping Jenny, and other such moisture-loving plants are grown. The trailing stems of the Creeping Jenny, the drooping fronds of the Ferns, and the natural as well as æsthetic connection of the Forget-me-Not with water would render its use appropriate for these and similar subjects; but anywhere and everywhere the mahogany beading, so suggestive of an elongated toilet-glass, is ugly and out of place in connection with horticulture, and should be discarded for something more appropriate. We first observed these window-boxes some three months since, and fancied they would be liable to suffer from damp and change of weather; they are, however, as bright and clean as at first. We should like to know how they stand the frost and snow of winter. *T. T.*

Vines Affected with Phylloxera.—I have read with great interest your remarks respecting the Phylloxera, and as you ask for information from those who have suffered from it, I will try to describe briefly the injury it has done in the vineries here. In the spring of 1874, when I took charge of these gardens, I found one of the vineries newly planted; old Vines which had been lifted from another house were planted alternately with young ones procured from a nursery. The latter, which made very unsatisfactory progress—their growth being weak and spindly—were ultimately, with the exception of one, all cut out, their places being filled with young rods from the old Vines, which were doing well. These old Vines continued to do well until last season, when they showed unmistakable signs of distress, their foliage scorched, and their wood refused to ripen perfectly. On examining the roots I found them infested with Phylloxera; we uprooted them and cleared away the border. In October we found the roots in very bad condition, many of the old ones being quite rotten. The Vines appeared to have been supported almost entirely by young roots which spring annually from the collar of the plants, and run and feed in the surface mulching, composed of cow-dung and horse-droppings. We hoped by clearing out this house to escape any further damage, but on close examination we found the pest in the adjoining house. The Vines in this house were planted in April, 1876; they were grown by ourselves, and are all Muscats. They made strong, firm wood in 1876 and 1877, which was well ripened. This season they broke well, and promised to carry a good crop of fruit, but have disappointed; their foliage has scalded, the Grapes are not finished, and some of the bunches have shanked; the wood also is ripening imperfectly. The varieties of Grapes that were most severely attacked here are Muscat of Alexandria, Mrs. Pince's Muscat, and Madresfield Court; Lady Downe's and Alicante are less affected. There is little doubt the insect was introduced with the Vines, which came from a nursery. Vines suffering from an attack of Phylloxera, when liberally treated, may do well for a few seasons, but from experience I find they get weaker each year until they are useless. I have no faith in dealing with it by half-measures. It is a foe too formidable to trifle with. We shall uproot our Vines, thoroughly cleanse the houses, and replant. *Thomas Coomber.*

Grape Duke of Buccleuch.—Some months ago I recommended this Grape to be worked on the Hamburgh, since which many have written about it in favour or otherwise. I feel it my duty to record an instance in which the Duke has done well. Some four years ago my foreman, Mr. W. Johnstone, went as gardener to Bayham Abbey; a new range of vineries was built, and the Duke was planted in a mixed house, and has certainly done well, for although the Vine has only been three years planted yet it showed thirty-nine bunches; twenty-six were taken off and thirteen left, which averaged 2 lb. each; these took the 1st prize at Tunbridge Wells on June 4, and again at Tunbridge in July. This I call good, for the berries were large and as clear as a bell. I asked if any difference was seen in the largeness of pith of this variety, and the answer was "Yes, it was larger." Now what about the border? Well, it was made of a nice friable loam, charcoal, chalk, and half-inch bones, and the border is on a sort of terrace, but every facility is afforded for watering where required. The houses are one sheet of glass, so I suspect the wood of the Duke is well ripened. I have just heard of another instance of the Duke doing well near Tunbridge, where the gardener "got more praise for the Grapes of this variety than for all the others put together." So much for the Duke. Now I would mention the Golden Queen. At Ashurst Park, near here, it is growing splendidly in a span-roofed house, and although only two years old has a quantity of fine Grapes on it. Mr. Allen also made his border well up, and has made a provision for covering with shutters in winter. In the same house are some fine bunches of well-known kinds, but I will only stop to notice Waltham Cross, which is also doing well; it ripens a fortnight before the Hamburgh, and six weeks before the Muscat; and if it keeps, as has been said, will be invaluable. I have it here, and can say that the constitution is excellent, and that it ripens a month before Lady Downe's and other late Grapes in the same house. *J. Rust, Eridge Castle.*

—— A great deal has been written both for and against this Grape, and I consider it is only just for every gardener to give his candid experience regarding it. When I first saw the Duke (some years ago, at Clovenfords) I was so very much struck with its fine appearance that I at once concluded to grow it here. I was only prevented doing so by hearing the repeated bad accounts of it from time to time; however at last I was persuaded to have one grafted on a cane of the White Frontignan (which I intended cutting out) two years ago this season, and at the present time I am perfectly satisfied at having done so, as the graft soon made a strong cane, and this year showed twelve bunches, five of which were cut off; and, as I do not force early, it was subjected to a cool temperature and had a long period to ripen. The Duke received the same attention as the other Vines in the same house, only I endeavoured to keep it drier towards the finishing period than the others, and that it has done to my entire satisfaction; the bunches average about 1½ lb. each. By the same post I forward you a few berries, which are a fair sample. [Very good.] Where it does as well as it has done here, it is well worthy of a place. We followed up the advice given by Mr. William Thomson some short time ago in your pages, viz., cutting the spurs half way through just at the commencement of the second swelling. *R. G.*

—— It may serve the discussion now going on as to the merits or demerits of this Grape if I attempt to describe it as I recently saw it in one of the vineries at Hutton Hall, Guisborough, the residence of J. W. Pease, Esq., M.P. If only one man out of twenty can grow this Grape well, it effectually disposes of the question whether or no the Grape can be grown well, as the twentieth man establishes a fact the other nineteen thought incapable of being demonstrated. At Hutton Hall the Duke of Buccleuch occupies a span-roofed vinery which is used as a late Hamburgh house. There are two plants of it, one on either side, and it is worthy of notice that in both positions it is carrying fine bunches. In both cases it is on the Black Hamburgh stock, but Mr. McIndoe has grafted it 2 feet higher up the stock than is usually the case, for the purpose of leaving a few side branches to the stocks. He is of opinion that these perform the important function of assisting the flow of sap to the scion. The graft has made a splendid growth, and each carried five very well finished bunches. One of these was shown by Mr. McIndoe in the class for six bunches of Grapes at Bishop Auckland, and it weighed 2 lb. 10 oz. In the form in which the Duke can be seen at Hutton Hall, it is a commanding-looking Grape, the berries large, very plump, free from spots, and very pleasant to the palate. Those persons who do not care for sugary Grapes with a Muscat flavour can scarcely fail to be pleased with the Duke. When it is quite ripe the skin

becomes yellow, with a clear rosy tinge. Mr. McIndoe finds it to hang well, and can keep it till December. Golden Champion in the same house was in fine condition also; and the frequency with which it was shown at Bishop Auckland suggested that somehow or the other it is a Grape suited to this district. It is on its own roots, and when the berries may be said to be perfected it loses any acidity of flavour and becomes of a honied sweetness. At that stage it is highly esteemed on the dessert table. In this case there was not the slightest blemish on the berries. I have no intention to take part in the current discussion, but the statement of a few facts of this character may have an interest for those who are watching the course of the debate now being carried on in the columns of the *Gardeners' Chronicle*. I may further add that Venn's Black Muscat, as supplied to Mr. McIndoe, cannot be separated from the Muscat Hamburgh, as now growing in the same house at Hutton Hall. It seems impossible to resist the conviction that they are alike in every respect. Supposing they are distinct varieties, as some have asserted, it is possible that either by accident or design the Muscat Hamburgh was put into circulation under the name of Venn's Black Muscat. *R. D.*

Judging Melons.—The judging of Melons is about one of the most unsatisfactory functions that can fall to the lot of those who are called upon to adjudicate on the merits of those fruits, when they are represented in large numbers as happens at some of our large exhibitions. Take for instance the late show held at Preston, where there were over twenty fruits staged in one class. It must have been rather a difficult duty for the judges to taste so many different fruits, and be able to arrive at a satisfactory decision as to which was the best. I mean in flavour, for I suppose every other consideration is left out of the question. It is a question of flavour and nothing else, and is not flavour a question of taste? What a pity this should be the case! Can we not infuse a broader spirit into such narrow principles of judgment, which are anomalous in the strongest sense of the word? The probable remedy—or, at least, a mitigation of the existing evil—would be to have more "classes" for Melons. At present there are only two classes, and this only at large exhibitions. Smaller exhibitions and local shows generally can only afford to offer a prize or two in one class only. What I would propose is this—to have a class for flavour alone, and to have two classes each in scarlet and green-fleshed Melons, say a class in each for fruit not to exceed 2 lb. or 3 lb. in weight, and a class for fruit of any size; and the judges to give their awards, not on a point of flavour alone, but on a summing-up of the various points which are known to be appreciated on our employers' tables, viz., weight, size, and general appearance as well as flavour. It is not an uncommon occurrence to see scrubby-looking little fruits not exceeding a pound in weight awarded honours where large handsome fruit are not even noticed. If you ask why, the answer is, flavour takes precedence of all other qualities combined. What say some of our exhibitors? *W. Hinds.*

Royal Tree Planting.—The remarks upon this subject, referring to trees at Southampton, to which exception is taken by Mr. W. H. Rogers (p. 282), were based upon a statement made some time since in the Southampton Town Council in the course of a discussion upon the state of the public parks—and certainly at that time not contradicted—to the effect that the two Oak trees planted on the occasion of the marriage of the Princess of Wales had died, and that others had been planted to succeed them. Of course, if Mr. Rogers, who doubtless, excepting the park superintendent, knows as much about the Southampton parks as any one, can give an authoritative denial to that statement that will suffice. Certainly there was no intention to reflect upon Mr. Rogers, who seems to have made the subject a personal one. *Your Correspondent.*

Melons at Longford Castle.—I have read with interest the various communications which have appeared in the *Gardeners' Chronicle* from Mr. Ward, head gardener to the Earl of Radnor, in reference to the system of Melon culture pursued in the gardens at Longford. The other day, through the kindness of a gentleman who had business at the Castle, I had an opportunity of examining for myself the practical results of Mr. Ward's course of treatment. He is no mere theorist, as the accompanying drawing of a fruit of Duke of Edinburgh, which I saw growing, will amply testify. It was cut some days after my visit, and I am informed that it measured round the middle 25 inches, and lengthways 28 inches. Its weight was 11 lb. 12 oz., and although I have seen "any quantity" of Melons in my time, I considered it, without any exception, one of the largest, most evenly shaped, and most beautifully reticulated fruit that has ever come under my observation. I saw numbers of other fruit which at the time of cutting must have weighed from 8 lb. to 9 lb.; and it is not unworthy of remark that Mr. Ward expects to make his last cuttings at the end of this month from vines which fruited in April. I never saw a healthier lot of plants. Well may a gardener, and his employer, too, take a pride in such a display. *C. H. S.*

Fuchsia Venus Victrix, &c.—In answer to "W. B.'s" enquiry of August 19, as to which of the Fuchsias, viz., Venus Victrix, Dr. Jephson, or Purity was the first introduced, I may state that all were raised before my time, but I have grown them all, and possess the former to this day. But as Venus Victrix was the first light-coloured Fuchsia, it is obvious that the others must have been obtained from it. Dr. Jephson, which gloried in a very dark purple corolla with light tube and sepals, was, I should say, the next; this no doubt followed by Purity, which has a very light-coloured corolla, somewhat like the present Rose of Denmark, and was much grown and even shown twenty years ago. Venus Victrix was sent out by Mr. Cripps, of Tunbridge Wells, many years ago, and was, I am assured, raised by a Mr. Hollingsworth. Of the remaining two, I regret being unable to afford any further information. *H. Cannell.*



Notices of Books.

The Bulb Garden; or, how to Cultivate Bulbous and Tuberous-rooted Flowering Plants to Perfection: *a Manual adapted for both the Professional and Amateur Gardener.* By Samuel Wood. Crosby, Lockwood & Co.

We entirely sympathise with Mr. Wood in his desire to recommend for more general adoption in gardens of humbler pretensions the culture of bulbous plants, but we cannot so fully congratulate him on the way in which he has fulfilled his self-imposed task. He first of all gives his readers some directions how to lay out and prepare the beds and borders, and then enumerates in detail the Tulips, the Anemones, the Ranunculus, and other plants which are to fill them. Mr. Wood's cultural directions are not too much elaborated—a great fault in a work intended for beginners—and they are, generally speaking, judicious. It is in the knowledge of plants that our author is most defective. Bulbous plants with him include Lily of the Valley, Hellebores, Dielytras, Ranunculus, Anemones, and even Lychnis fulgens! Classes, tribes, species, varieties, families, orders, are all mixed up in such inextricable confusion, that we are sure the reader can either have no notion which is the correct term to apply in a particular case, or will suppose that they are all of equal significance. The Hyacinth, we are told—meaning, of course, the cultivated species—is a "native of our country," and the author has seen it growing wild in abundance in various parts of England. Doubtless he has seen the Bluebell, but few of us, we fancy, would confound that with the Hyacinth of the gardens.

Few or none of the newer kinds of Tulip and Lily are enumerated, and such a grand hardy plant as Hyacinthus candicans is not even mentioned. Triteleia is spoken of as a new introduction. The diseases are dismissed in two or three pages with such remarks as this:—"The Gladiolus is not liable to any particular disease, but will pine away in poor ground." "The Snowdrop is eaten by slugs, and will pine away from frequent removals and planting in poor soils." "The Calla æthiopica is liable to pine away from want of sufficient water," and so on. Really, one would think the author had never grown a bulb. Certainly the gardening papers, with their descriptions of bulbs new and old, and their frequent references to the diseases of Tulips and Gladioli have been studied with but little practical result, if at all, by our author. The glossary is equally indicative of scanty knowledge and imperfect research. "Crocus," we are told, "refers to some local inference, no doubt given by Theophrastus." The coloured illustrations to the present volume do not add to its attractions, and some, as the Squill, are hardly recognisable, while the woodcuts have, for the most part, done duty over and over again in catalogues. Mr. Wood would do well in future to confine himself strictly to cultural matters, where his observation and experience may be useful. Book-making is decidedly not his forte.

Monographiæ Phanerogamarum; Prodromi nunc continuatio nunc revisio. Paris: Masson.

When, some few years since, it was announced that De Candolle's *Prodromus* was to be brought to a conclusion at the end of the Dicotyledonous series of orders, something like a wail of regret went up from the botanists of the world. A complete descriptive list of all known plants was so urgent a want, that the prospect of the discontinuance of the *Prodromus* was looked on with serious apprehension. We cannot indeed wonder that M. de Candolle should have shrunk from further toil on a work which had cost his father and himself fifty years of irksome labour. So vast a work, it is obvious, required the co-operation of other workers, and those other workers were not always so systematic as the de Candolles, and for various reasons could not be so punctual. The difficulties in the way of an orderly sequence became insuperable, and M. de Candolle resolved to bring the work, which has cast so much honour on three generations of his family, to a conclusion. But it was impossible, nevertheless, for the engineers to remain idle; the machinery could not be suffered to rust from disuse, and thus it was soon announced that a continuation of the *Prodromus* on a somewhat different plan would be undertaken. The plan proposed was to issue a series of monographs of different orders without any definite sequence, such monographs to be devoted to the elucidation of families hitherto not treated in the *Prodromus*, or of such as required revision and extension in consequence of the lapse of time and the progress of science. The first volume of this supplement to the *Prodromus* is now before us. It forms a handsome volume in large 8vo of nearly 800 pages, with nine plates from the pencil of Fitch. The change of size is, we think, a misfortune, as the new volume, will not range with the old. The typographical arrangements are decidedly more convenient than in the older series, and would have been still further improved had the synonyms been relegated to a separate paragraph or at least have been printed in italic or some other distinctive type. The three orders treated of in the present volume are the Smilaceæ, by M. Alphonse de Candolle; the Restiaceæ, by Dr. Masters; and the Meliaceæ, by M. Casimir de Candolle. The systematic description of the species is, in each case, preceded by some general observations in French or in Latin.

The Smilaceæ consist of three genera only, two numerically of little importance, and one, Smilax, with over 200 species. It is curious and not altogether creditable that so little that is definite should be known as to the species of Smilax producing Sarsaparilla. The peculiar leaves and tendrils of Smilax, of course, form subjects of comment, the tendrils being considered to be leaf-segments reduced in size. With reference to the use of the words "fusion" or "cohesion" in describing the modifications of these organs, we are glad to see M. de Candolle preferring to write "absence of division," as the word "fusion" applies to parts primitively separated. The morphology of the flowers and of the inflorescence offers no very peculiar features. The characters relied on for the primary subdivisions of the genus Smilax are the number of ovules (one or two) in each cell of the ovary, the inflexed or reflexed perianth-segments and the number of stamens. The variations in the inflorescence furnish other characters, and, lastly, the characters furnished by the leaves are taken into account. A geographical arrangement of the species is in some cases adopted, the author stating that this mode of grouping, formerly considered artificial and unscientific, has become more important in these times, when the origin and genealogy of species are sought to be determined, inasmuch as it may be presumed that the species of any one region have probably been derived from a common stock indigenous to that region. The discussion of this point naturally leads to the consideration of the geographical distribution of existing species. They are abundant in the Himalayas, Japan, the Fiji islands, the United States, Mexico, and

the West Indies, being nearly equally distributed in point of numbers in the Old and New Worlds respectively. S. herbacea is common to Japan and the United States, one of the many proofs of kinship between the two floras. M. de Candolle considers that the diffusion of these plants to the north and south is checked, more by the insufficient heat which prevents them from flowering and ripening their fruit, than by the winter frosts. M. de Candolle is borne out in this opinion by the fact that several species are hardy in British gardens, though it is but rarely that they flower, and at the moment we do not remember to have seen one bear fruit. M. de Candolle considers the Smilaceæ to be among the oldest of flowering plants, for, although few if any of the so-called fossil Smilaceæ are known with certainty to belong to the order, yet their wide distribution in subtropical, tropical and warmer temperate regions, and the facts that they are as abundant in islands as on continents as well as the existence of local forms differing slightly but constantly from the type, point to the above conclusion. The simplest forms are probably the oldest, therefore the dicœcious Smilaceæ with their wide distribution are considered as older than the hermaphrodite Rhipogonum, which has only a limited distribution.

Pursuing these speculations M. de Candolle emits the following hypothesis with all due qualifications. He considers the ancestral Smilax to have been a unisexual Monocotyledon, probably monœcious, with pollen volatile, *i.e.*, capable of transport by means of the wind; gamosepalous perianth, no petals, and with monadelphous stamens—in fact, a plant nearly like the existing Heterosmilax. This hypothetical Smilax inhabited a hypothetical continent between Asia, the Sandwich Islands, and New Holland, at a period prior to the Eocene epoch. From this ancestral form the five other genera may have proceeded, each with their three sepals, three petals, and free stamens. Four of these genera are dicœcious, one hermaphrodite. Geographical and climatic changes caused the dispersion of these genera, the dicœcious ones being the most widely dispersed, the Rhipogonum with hermaphrodite flowers of five whorls the least so, it being confined to Australia and New Zealand. Heterosmilax, the simplest form, remains nearly in the cradle of the race.

For M. de Candolle, then, a flower with all its parts distinct and separate, as in a Sedum, for instance, is more complex than one in which the parts are not separated. This is a conclusion at variance with the opinions of many who would place the Gamopetalæ, or the Epigynæ, higher in the scale o completeness than the Polypetalæ. Such authors consider what they call "fusion," consolidation of parts, cohesion, adhesion, &c., as indications of complexity, and put the plants in which such characteristics are manifest on a higher scale than those in which the parts are all separate. Now, if the parts were really coherent, fused, adherent, or consolidated, no doubt such views would be correct, but the truth is, that in the majority of cases the so-called fusion is simply an arrest of development, a lack of separation. The parts were not primitively separate and subsequently combined, but primitively one and subsequently branched, divided, multiplied. The development of any flower shows this. From one central knob proceed three or more segments; then three more, then three more, and so on. Now, if development be arrested after the first three have been produced, we get an imperfect flower without trace of petals, stamens, or pistil; if after the second three, then a flower with sepals and petals, and no stamens and pistil. If arrest take place after the third series is formed, then we get a staminiferous or male flower, but if no arrest take place then we get the structurally hermaphrodite flower, completed. And such a flower (speaking purely from a structural point of view) is more complete and perfect than one in which arrest of development has taken place at any stage.

If we are to proceed from the simple to the complex than M. de Candolle's views are just. Again, if these views be correct unisexual plants were probably earlier formations than hermaphrodites, and hermaphrodite flowers are the perfected descendants of one-sexed plants.

According to the opposite view flowers were originally hermaphrodite, but on the principle of subdivision of labour, it proved advantageous to the plant to have its stamens on one individual, its pistils on another.

The same questions of course arise with reference to the Restiaceæ, which are monographed by Dr. Masters. These are mostly dicœcious plants, pretty equally distributed between the Cape of Good Hope and Australia, especially its south-western corner, though not so absolutely limited in distribution as the African allies. Lepyrodia, an Australian genus, has in one species structurally complete flowers, and in the remaining species is more complete than is the case with the other genera. The question then arises whether this Lepyrodia is older as regards ancestry than the one-sexed dicœcious Restios, or *vice versâ*. We have no clue to guide us here unless it be that on which M. de Candolle relies — geographical distribution. The dicœcious Restiaceæ are distributed in both Africa and Australia, the Lepyrodias in the latter only; the former then may be considered to have the longest lineage of the two. If, on the other hand, it can be shown that the hermaphrodite was the original form, and the one-sexed condition a result of beneficial division of labour, then the Lepyrodia must be looked on as a "survival" of a condition otherwise extinct, or, as a "reversion" to an older order of things.

Fascinating as these speculations are, they are at present mere dreams. So long as their real nature is kept in mind there is no harm in them, but, on the contrary, much good. Though such problems may prove insoluble to finite intelligence and limited capabilities, yet they are of great value in stimulating inquiry and serving as nuclei around which knowledge which would otherwise be vaguely diffused may be crystallised.

M. Casimir de Candolle's monograph on Meliaceæ completes the volume. Of this order thirty-five genera are noted, the species being distributed widely in the warmer regions of the globe, while one, M. Azederach, has been naturalised in the South of Europe and is sometimes seen in our stoves. Swietenia Mahogani is the tree yielding the Mahogany. Structurally, the points of most interest in the Meliaceæ are the tubular andrœcium and the fact that the embryo is sometimes covered with hair—a circumstance only noted in certain plants of the present order and in Byrsocarpus and Ægiceras.

The plates are devoted simply to generic analyses and as guides to the student. Lastly, there is what will prove a great boon, a full index of the generic and specific names included in the volume. We congratulate and thank MM. de Candolle on the resumption of their laborious task and so highly appreciate their work that we eagerly await the promised monographs on Aroids (by Dr. Engler) and grasses (by Gen. Munro). We are quite sure the botancial world will experience a unanimous feeling of gratitude towards the editors of this greatly desired publication.

PUBLICATIONS RECEIVED.—Botanical Magazine— — Revue Horticole.—Monatsschrift des Vereines zur beförderung des Gartenbaues.—Journal de la Société Centrale d'Horticulture. — Le Moniteur Horticole Belge. — Midland Naturalist—Floral Magazine. — Journal of Forestry.—The Gardener.—The American Agriculturist.—The Florist and Pomologist.—The Villa Gardener.—Revue de l'Horticulture Belge.

Natural History.

ARE SQUIRRELS CARNIVOROUS?—Yes, decidedly so. A friend of mine residing in Hampshire was surrounded by squirrels, and being a great lover of animals would not suffer one to be shot or destroyed. To quote his own words, "In short, around my cottage they are like the mice in the tall tower of the Bishop of Mentz." They feasted on his Apples, Peaches, Apricots, and all wall fruit, and carried off the eggs of his beautiful crested doves. Still their death-warrant was not signed, but a time came when, having received a present of some rare tufted ducks and pochards, the attentions of the squirrels were found to be overpoweringly pressing, and vermin-traps were placed all round the stream where the young ducklings were kept; still the ducks disappeared, and stoats, though never caught, were suspected. At last the real thieves were discovered; eight young pochards were missing and four young tufted ducks. A keeper, guided by the cry of the ducklings, saw two old squirrels hunting three of the little birds. One squirrel was dancing about as if in play with a duck held by the back of its neck in her mouth; the other was frisking about the remaining two ducklings. A shot settled the fate of one squirrel. She dropped her victim, and the other ran up a Pine tree. Two of the little ducks were unhurt, but the third died of the wounds she had received from the squirrel's teeth. A squirrel can give a very sharp bite, as I know from experience, for this gentleman sent me once, at my especial request, the present of a young squirrel, and the little animal made his escape one morning before I had tamed him into the kitchen and frightened the maid servants. They seemed to have an idea that it was the nature of squirrels in general to fly into people's faces and scratch out eyes, for each maiden had a duster or kitchen towel pressed closely over her head and across her eyes, whilst the squirrel sprang from table to chair and chair to dresser. I, too, caught up a towel, but it was to blind master squirrel with, not myself; and I succeeded in catching him, but he bit me in the thumb with right good will when I took him out of the wrapper in order to return him to his cage. *Helen E. Watney.*



THE premature falling of the leaf is often the cause of no small anxiety on the part of those interested in the culture and growth of forest trees, and in order somewhat to soothe such anxiety I shall note what has come under my own observation. Any sudden check of growth will cause the leaves to fall off, and such checks are caused by various circumstances, the most common of which are either too little or too much moisture. When any protracted dry or hot weather occurs, as in 1868, the trees, notwithstanding their roots spreading far and wide in search of food, thereby commanding all the nourishment and moisture available for their sustenance, yet languish and fade at midsummer as completely as they are wont to do in autumn. The Beech, although well adapted to dry soils and sandy districts, is yet among the first trees to suffer. In the dry season referred to the Beech in this locality suffered more than any other forest tree. In July and August many of their leaves were as dead, dry and shrivelled up, as if scorched by fire. No serious results followed, however, beyond the almost entire loss of that year's growth. Rain fell copiously in the autumn, and the weather continued mild and favourable for tree growth until the leaves all fell off, and buds were large and well formed. During the winter, and especially towards spring, the weight of the buds became so great as to cause the branches to bend down like weepers. Most of the buds contained fruit blossom, and the result was the production of the largest crop of Beech-nuts or mast that ever I saw. Many branches were so richly loaded that although scarcely any leaves were upon them they gave way and broke under the excessive weight. The Larch that season was also much but variously affected in some soils, especially amongst Whins it languished exceedingly, and not a few died outright. Fortunately for its sake rain fell abundantly in the autumn months (when it makes its principal growth), and those trees that had not lost their leaders or side shoots recovered considerably. On moderately deep and good loam the loss of growth was unimportant, but on gravel, sand, and clay they suffered very much. The fruit crop of the Larch like that of the Beech was excellent the succeeding season.

The Scots Pine suffers less by excessive drought than any other forest tree, probably from the circumstance that it makes its growth very early in the season before the drought affects it, hence in examining the zones of wood in Scots Fir timber, it is found that they vary less than in most other trees.

The loss of tree growth, as of other vegetable products, is too serious a matter to let pass without enquiry whether anything can be done either by way of cure or prevention. Cures of any kind are difficult to effect, and too frequently verify the saying that "the remedy is worse than the disease." That many of the evils resulting from dry or hot weather may be prevented I have not the least doubt. Thinning Pine and Fir plantations I have long regarded as a necessary evil, but as long as it must be practised the baneful results may be greatly modified, if not neutralised, in the following manner. When the ground is bare of herbage, dry, and the soil of an arid

description, the prunings should all be allowed to lie upon the ground for a year or two, to prevent the sun's direct rays from overheating the soil, as thereby the juices of the growing trees are seriously injured. Pine and Fir plantations of advanced age, say thirty years, and in some cases as young as twenty-five years, should have their prunings left upon the ground, and they may be so spread upon it as to specially benefit the standing trees.

When plantations have been depastured, and the herbage eaten bare, it is well not to eat the herbage for a year or two after thinning—till the branches of the growing trees, indeed, again close together, and prevent the rays of the sun from overheating the soil. It is by no means an unfavourable aspect of the case when the leaves on becoming discoloured separate and fall off; but when they become brown or otherwise discoloured, and still remain over autumn attached to the boughs, it is a very sure sign of the tree being hopelessly irrecoverable. On drawing off water from lakes, ponds, &c., surrounded with trees, care should be taken not to prolong the operation in the heat of summer or spring, as thereby the trees nourished by the water will soon grow sickly, and lose their vitality.

In autumns when much rain falls landscape beauty is destroyed by the foliage falling off before the leaves have attained their autumnal tints. A dry autumn, therefore, is that which every naturalist longs for in order to see the glowing and cheering colours, shades, and hues of the glorious landscape. *C. Y. Michie, Forester, Cullen House, Cullen, August* 19.

Reports of Societies.

Basingstoke Horticultural Society: *Aug.* 20.—The second exhibition of this newly-formed society proved a most satisfactory advance on the one held last year, while the weather was fine and the attendance numerous. The show took place in the grounds of Goldings, the residence of Mrs. Russell Apletre, which is close to the town, and remarkably well adapted for the show.

The greatest interest centred round certain special prizes, which caused a keen competition. The Mayor, H. Allen, Esq., gave a piece of plate, value five guineas, with 2d and 3d prizes of two guineas and one guinea, for the best eighteen plants in or out of bloom. The best collection came from W. P. Portal, Esq., Malshanger Park (Mr. N. Kneller, gr.), whose leading subjects were—Medinilla magnifica, Clerodendron Balfourianum, a finely-grown example of Cyanophyllum magnificum, Allamanda Hendersoni, two finely-grown plants of Begonia Craigii, Scutellaria Mociniana, Gymnogramma chrysophylla, &c.; 2d, T. Pain, Esq., The Grove (T. Russell, gr.), who had capitally-grown Fuchsias, Coleus, Cuphea platycentra, the dark-flowered Lotus Jacobæus, Pelargonium Happy Thought, &c., a well-balanced collection. Messrs. J. Clarke and H. Faulkner were awarded equal 3ds in consideration of a good competition. Handsome special prizes were given by W. W. B. Beach, Esq., M.P., for a group of miscellaneous stove and greenhouse plants, arranged for effect, in a space 10 feet by 8 feet. By far the best came from Viscount Eversley, Heckfield Place (Mr. W. Wildsmith, gr.), arranged with great judgment and taste. This group had something more than a mere exhibition value, as it gave the young gardeners present an excellent practical lesson in the tasteful arrangement of plants.

In the open class for six stove and greenhouse plants the 1st prize was withheld: but with six foliage plants Mr. Wildsmith was 1st, with some medium-sized well grown examples; Major R. P. Warren (T. Osmond, gr.), being 2d. The best specimen plant was Stephanotis floribunda from W. L. W. Chute, Esq. (Mr. G. Brownfield, gr.). Exotic Ferns in groups of eight plants were nicely shown, the 1st prize lot coming from H. W. Thornton, Esq. (Mr. H. Faulkner, gr.), Mr. T. Osmond being 2d. Mr. T. Russell had by far the best lot of six Fuchsias, large and symmetrically grown plants; Mr. Kneller coming in 2d. Hardy Ferns and Balsams were fairly well shown; and plants suitable for table decoration were of the usual character.

The class of six Zonal Pelargoniums caused a close run between C. Baker, Esq., M.P. (Mr. J. Turner, gr.), and Mr. Kneller; the plants of the latter had the best heads of bloom, but lacked the vigorous foliage found in that set up by Mr. Turner. The varieties were St. Fiacre, Veusvius, Gloire de Nancy, Madame Lemoine, &c. An extra prize was awarded to W. W. B. Beach, Esq., M.P., Oakley Hall (Mr. Hibbert, gr.), for a fine collection of stove and greenhouse plants; and also to Mr. Charles Cooper, nurseryman, Basingstoke, for a group of flowering and other plants.

In the cut flower classes were found Dahlias, Asters, both quilled and flat-petalled; Zinnias, Roses, &c., all of general good quality.

The special prizes given by J. B. Soper, Esq., for eight dishes of fruit, brought but one competitor, in Mr. Wildsmith, who staged a highly meritorious collection. The best six dishes of fruit (in which class there was a good competition) came from H. Harner, Esq., Steventon (Mr. E. Crump, gr.), and comprised Black Hamburgh and Muscat of Alexandria Grapes, Princess of Wales Peach, Elruge Nectarine, &c. The examples of Black Alicante Grapes staged by Mr. Crump, in the class for three bunches of black Grapes, were remarkable for their size, symmetry, and splendid colour and bloom, and completely distancing anything else competing with them. Mr. Crump bids fair to take high rank as a Grape grower and exhibitor. He had the best three bunches of white Grapes also, staging Muscats, though they would have been better could they have hung for another week or two. The bunches were very fine. In the class for three bunches of black Grapes, Messrs. Wildsmith and Kneller were placed equal 2d with fine examples of Black Hamburgh. Mr. Kneller also came in 2d in the white class with some of the well-finished examples of Buckland Sweetwater for which he is famous. Mr. H. Faulkner had the best six Peaches, staging fine Royal George; Mr. Crump coming next with good examples of Princess of Wales. In the class for Nectarines, Mr. W. Wildsmith was 1st with very fine Downton; Mr. J. Dauncey being 2d. Other fruits comprised Melons, dessert and culinary Apples and Pears, Plums and Cherries.

Vegetables were largely and finely exhibited. In the class for ten dishes there was a very spirited competition. (*From a Correspondent.*)

Bishop Auckland Horticultural: *Aug.* 30.—This exhibition, which might very appropriately be termed the great floral carnival of the North, took place on the above date, but unfortunately with the attendant disadvantage of showers, though there were intervals of fine weather. Last year a pitiless wet day caused a loss of some £300, and there is reason to fear a deficiency will again result this year. The show was held, as usual, in the picturesque grounds of Auckland Castle, and it was astonishing to note the throng of people present despite the weather.

The tent arrangements were as usual, and though there was a falling off in stove and greenhouse plants the tents were well filled, and the show gave great satisfaction to the visitors. So prompt was the management that by 10 o'clock the judges were enabled to commence making their awards, and by half-past 12 the tents were thrown open to visitors. What can be so well done on a large scale at Bishop Auckland can surely be done on a smaller scale in other parts of the country, where a reform in this direction is sore necessity.

The open-to-all classes are always the most attractive at Bishop Auckland, and in that for six stove and greenhouse plants the best came from Mr. T. Wilson, Normanby Hall, who had excellent specimens of Dipladenia Brearleyana, D. amabilis, Allamanda Hendersoni, Erica Eweriana superba, E. oblata purpurea, and Phænocoma prolifera Barnesii; 2d, Mr. Jas. Noble, Woodburn, Darlington, whose best plants were Allamanda Hendersoni, Clerodendron Balfourianum, Lapageria rosea, and Bougainvillea glabra.

In the class for six foliaged plants there was a very close competition, Mr. Noble being placed 1st with Croton interruptus, C. Johannis, Dasylirion serratifola, Areca Verschaffeltii, Cycas revoluta, and Yucca aloifolia variegata. It was the evenness of this lot which carried the palm for Mr. Noble; 2d, Mr. N. Black, gr. to the Misses Pease, Southend Gardens, Darlington, who had a fine Latania borbonica, Croton Johannis, very richly coloured; C. Weismanni, Maranta rosea picta, a superb plant; Cocos Weddelliana, and Anthurium crystallinum; 3d, Mr. R. Westcott, Raby Castle Gardens, who had Croton Johannis, Alocasia Lowii, Geonoma gracilis, Pandanus Veitchii, &c. The class for twelve stove and greenhouse plants, pots not to exceed 14 inches, brought a capital competition, Mr. Noble being 1st; Mr. H. Johnstone, gr. to J. B. Hodgson, Esq., 2d; and Mr. N. Black, 3d. These were effective groups, containing small but well grown plants. Achimenes were very good for so late in the season, the best coming from Mr. J. Short, Darlington. In the class for six Zonal Pelargoniums some finely grown and flowered plants were staged, quite up to the London mark, the best coming from Mr. J. Short, who had Vesuvius, Glow, Acme, Mrs. William Paul, Lord Derby, and another; 2d, Mr. H. Johnstone; 3d, Mr. J. Larkin.

Exotic Ferns in sixes were both numerous and good, Mr. R. Westcott coming in 1st with nice medium-sized well-grown examples, Mr. H. Johnstone being 2d, and Mr. N. Black 3d. Hardy Ferns were very good, and mosses admirably grown, but the pressure of the crowd prevented notes from being taken. Balsams, Fuchsias, Coleus, &c., were all good, as usual.

Cut flowers are always a strong point at Bishop Auckland. The best stand of twelve bunches of cut flowers came from Mr. J. McIndoe, but they sadly needed something to back them up against the naked ground of the box. They consisted of Orchids, stove and greenhouse plants, &c. Mr. Lazenby, Darlington, was 2d. In the class for twelve Zonal Pelargoniums, three trusses in a bunch, there was a spirited competition, but several stands had to be disqualified through containing double varieties—so the committee ruled, and it was by their authority the judges disqualified. The best came from Mr. T. Sibbald, the second best from Mr. J. Short.

Gladioli were very fine indeed, and the stand of nine varieties set up by Mr. J. Thompson, nurseryman, Newcastle-on-Tyne, contained some splendid varieties; 2d, Mr. G. Hankerson, Wolerston. In the class for seven spikes, which were equally well shown, Mr. John Burrell was 1st and Mr. A. Spoor 2d. The Marigolds were as usual very good, and the striped French varieties finely marked. Asters, Stocks, Verbenas, &c., were all very good. In the class for twelve bunches of cut herbaceous plants were very fine examples of some grand things—indeed this was a remarkably good feature of the show.

The open classes for Dahlias, especially that for twenty-four show varieties, brought an extensive competition for the handsome prizes offered. It was a very close run between Mr. W. Boston, nurseryman, Bedale, and Messrs. R. Edwards & Son, Nuttall Nurseries, Nottingham, the former getting the advantage. Mr. Boston had fine blooms of Criterion, finely shown in all the stands; Henry Walton, Perfection of Primroses, J. W. Lord, James Cocker, Countess, James Service, Vice-President, Charles Leicester, Anne Neville, Mrs. Dix, Her Majesty, Artist, John Standish, W. P. Laird, Monarch, J. N. Keynes, Flora Wyatt, Burgundy, Miss Turner, Dr. Moffatt, Lady Gladys Herbert, Alexander Cramond, &c. Messrs. R. Edwards & Son had some very fine flowers, the leading varieties being James Cocker, John Standish, James Service, Criterion, Mrs. Saunders, Chris Ridley, Mrs. Henshaw, Monarch, J. N. Keynes, Rev. J. B. M. Camm, Flora Wyatt, Julia Wyatt, Leah, Thomas Goodwin, Mrs. Harris, Willie Eckford, &c. 3d, Mr. Henry Clark, Rodley, Leeds. In the amateur class for twelve varieties Mr. J. Walker was 1st, and Mr. G. Fletcher 2d. In this class there was a good competition also.

The best twelve Fancies came also from Mr. Boston, a remarkably good and varied lot, in excellent character. The best flowers were Miss Large, Monarch, very fine; Grand Sultan, Mrs. Saunders, Miss Burnes, Fanny Sturt, Peacock, Queen Mab, Prospero, and Mrs. Purves; a capital lot for exhibition. 2d, Messrs. R. Edwards & Son, whose best flowers were Mrs. Saunders, Flora Wyatt, Dolly Varden, Fanny Sturt, Richard Dean, and Sparkler.

Hollyhocks were well shown by Messrs. Thompson and Hines.

The show of fruit was as usual extensive and very good, and in the class for eight dishes the competition was very keen. Mr. J. McIndoe, gr. to J. W. Pease, Esq., Hutton Hall, Guisborough, was 1st with a remarkably fine lot, staging capital Muscat of Alexandria and Black Hamburgh Grapes, Colston Bassett Melon; very fine Violette Hâtive Peaches, Moor Park Apricots, Brunswick Fig, Bryanstone Green Gage Plums, and Elruge Nectarines; 2d, Mr. W. Wallace, Kirkby Stephen, with Black Hamburgh and Buckland Sweetwater Grapes, Diamond Peaches, Moor Park Apricot, Downton Nectarine, Jefferson's Plum, Figs, and Golden Perfection Melon; 3d, Mr. Westcott, Raby Castle Gardens; 4th, Mr. Bruce, Chorlton, Manchester. The best six bunches of Grapes also came from Mr. McIndoe, who was in strong force with fruit, and who had a remarkably fine lot. The varieties were Madresfield Court, Barbarossa, Mrs. Pince, Duke of Buccleuch, in fine condition, weighing 2 lb. 10 oz.; Waltham Cross, a fine-looking Grape for exhibition, and well finished, but lacking flavour, and, it is to be feared, keeping qualities; and Canon Hall Muscat. Mr. R. Westcott came in 2d with Black Hamburgh, Alicante, and Gros Colman, Golden Champion, Foster's Seedling, and Muscat of Alexandria. Mr. Bruce came 3d with two large bunches of Gros Guillaume, Madresfield Court, Duke of Buccleuch, Muscat of Alexandria, and Mrs. Pince. In the class for two bunches of Black Hamburgh Grapes—Mr. George Cooke, Bishop Auckland, was 1st with good examples, Messrs. Wallace and Larken being 2d and 3d. The best two bunches of black Grapes, not Hamburghs, were excellent Madresfield Court from Mr. McIndoe, Mr. Bruce being 2d with Alicante. Lady Downe's was also shown. The best two bunches of White Muscats came also from Mr. McIndoe, having well finished Muscat of Alexandria; Mr. Wallace being 2d with the same. In the class for two bunches of any other white Mr. McIndoe gained 1st with thoroughly good Golden Champion, Mr. G. Cooke being 2d with Foster's Seedling.

The best Pine-apple came from Mr. R. Westcott, and the best dishes of Peaches from Mr. J. Daglish, Aldborough, which were very fine Lord Palmerston; Mr. McIndoe coming 2d with splendidly coloured

Violette Hâtive"; Royal George and Dymond were also well shown. Apricots were numerous and very good, Moor Park taking the lead. Nectarines were fine also, the best varieties Pitmaston Orange, Ballygowan, and Hunt's Tawny. Plums, and especially the yellow varieties, were remarkably good, Green Gage, Jefferson's, and Magnum Bonum being the best. Black Plums were represented by Kirke's and Orleans.

Culinary Apples were numerous and very fine, Lord Suffield being very conspicuous. Dessert Apples were very good, the Worcester Pearmain being well represented; and hardy Plums very numerous. Melons were, as usual, plentiful.

The show of vegetables was acknowledged to be one of the best seen at Bishop Auckland. Time did not admit of gathering up details, but two or three classes stood out prominently for the interest they created. The best eight dishes of Potatos came from Mr. J. McIndoe, who had Schoolmaster, Yorkshire Hero, Rector of Woodstock, International Kidney, Snowflake, Bountiful, Extra Early Vermont, and Grampian. This was a remarkably good lot, well up to exhibition form. 2d, to Mr. Thomas Ryder, Spenny Moor, with Rector of Woodstock, Schoolmaster, Breadfruit, Garibaldi, Early Rose, and others bearing local names; 3d, Mr. W. Jackson, Kidderminster. The best collection of eight dishes of vegetables came from Mr. McIndoe, who had excellent examples of Cauliflower, Carrot, Cucumber, Snowflake Potatos, Peas, French Beans, and white Celery; 2d, Mr. Thos. Ryder. All other vegetables were numerous and very fine, especially Cauliflower, and here Veitch's Autumn Giant was remarkably fine. The best brace of Cucumbers was Verdant Green, a very handsome, medium-sized, smooth, dark green variety, raised from a cross between Duke of Edinburgh and Telegraph, very handsome and short heel. Not less than twenty-eight brace competed. This came from the raiser, Mr. J. McIndoe.

A basket of pretty Coniferous plants, sent by Messrs. Little & Ballantyne, nurserymen, Carlisle, attracted much attention. It included specimens of the new Wellingtonia gigantea pendula nova, in good character; variegated Retinosporas, &c.



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, SEPT. 4, 1878.

MONTH AND DAY	BAROMETER: Mean Reading Reduced to 32° Fah.	BAROMETER: Departure from Average of 18 years.	TEMPERATURE OF THE AIR: Highest	TEMPERATURE OF THE AIR: Lowest.	TEMPERATURE OF THE AIR: Range.	TEMPERATURE OF THE AIR: Mean for Day.	TEMPERATURE OF THE AIR: Departure of Mean from Average of 60 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity, Sat. = 1000	WIND: Average Direction.	RAINFALL
Aug	In.	In.	°	°	°	°	°	°	°		In.
29	29.40	−0.47	70.4	58.0	12.4	62.3	+ 2.2	58.9	80	S.S.E. : S.E.	0.33
30	29.30	−0.58	69.1	56.9	12.2	61.0	+ 1.0	54.3	79	S.S.W. : S.W.	0.42
31	29.55	−0.33	65.0	55.7	9.3	58.3	− 1.5	55.8	91	S.W. : WSW	0.23
Sept											
1	29.91	+0.03	60.9	56.5	4.4	57.8	− 1.6	51.8	81	W.	0.00
2	30.11	+0.21	63.6	54.0	9.6	59.1	− 0.2	50.4	73	W. : WNW	0.00
3	30.07	+0.17	73.0	49.6	23.4	60.0	+ 0.9	50.6	71	N.W.	0.00
4	29.93	+0.03	73.8	52.0	21.8	61.4	+ 2.6	55.1	80	S.S.E. : E.S.E.	0.00
Mean	29.75	−0.13	68.7	54.7	14.0	60.0	+ 0.5	53.8	81	variable	sum 0.98

Aug. 29.—Overcast, dull, and wet till 11.30 A.M.; fine and bright after. Cloudless at night. Thunderstorm between 7 and 9 A.M.

— 30.—Fine, though frequently dull, till 3.30 P.M.; overcast after. Frequent rain fell all day. Strong wind. Thunder and lightning at 4.25 P.M. and 6 P.M.

— 31.—Generally very dull and cloudy. Frequent showers of rain. Cool.

Sept. 1.—Very dull and cloudy till evening, then fine. Cold.

— 2.—A fine bright day, partially cloudy till night, then cloudless.

— 3.—A very fine bright day. Cloudless at night.

— 4.—A fine day. Clear in morning, cloudy after. Overcast at night. Warmer.

LONDON: *Barometer.*—During the week ending Saturday, August 31, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 29.49 inches at the beginning of the week to 29.55 inches by the evening of the 25th, decreased to 29.50 inches by noon on the 26th, increased to 29.78 inches by noon on the 28th, decreased to 29.20 inches by the early morning of the 30th, and increased to 29.83 inches by the end of the week. The mean reading for the week at sea level was 29.62 inches, being 0.21 inch below that of the preceding week, and 0.42 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 72° on the 27th to 63½° on the 25th; the mean value for the week was 68¾°. The lowest temperatures of the air observed by night varied from 53½° on the 26th to 58° both on the 27th and 29th; the mean for the week was 56½°. The mean daily range of temperature in the week was 12¼°, the greatest range in the day being 16¾° on the 26th, and the least 7¼° on the 25th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—25th, 58°.1, — 2°.4; 26th, 60°, — 0°.4; 27th, 62°.7, + 2°.4; 28th, 62°.8, + 2°.6; 29th, 62°.3, + 2°.2; 30th, 61°, + 1°; 31st, 58°.3, — 1°.5. The mean temperature of the air for the week was 60°.7, being 0°.6 above the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 136° on the 27th, 141° on the 28th, and 128° on the 30th; on the 25th the reading did not rise above 65°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 47° on the 26th, and 50½° on the 25th; the mean of the seven lowest readings was 52°.

Wind.—The direction of the wind was S.W., and its strength generally moderate; but on the 30th there was a gale.

The weather during the week was dull and wet, and the sky was cloudy.

Thunder and *lightning* occurred on the 29th, 30th, and 31st; and *fog* prevailed on the 25th.

Rain fell on five days during the week; the amount collected was 1.07 inch.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 77° at Eccles, 75° at Sheffield and Sunderland, 74¼° at Cambridge, and 74° at Bristol; the highest temperature of the air at Plymouth was 69°, and at Liverpool was 70°; the mean value from all stations was 72½°. The lowest temperatures of the air observed by night were 44½° at Eccles, 48° at both Hull and Leeds, 49° at Bradford, and 49¼° at both Cambridge and Sheffield; the lowest temperature of the air at Truro was 57°, and at Norwich was 56¾°; the mean from all stations was 51¾°. The range of temperature in the week was the greatest at Eccles, 32½°, and the least at Plymouth, 13°; the mean range from all stations was 21°.

The mean of the seven high day temperatures was the highest at Cambridge, 71¾°, Eccles 71½°, Bristol 70¾°, and Sheffield 70½°, and the lowest at Liverpool, 66¼°, and Wolverhampton 66½°; the mean value from all stations was 69¼°. The mean of the seven low night temperatures was the lowest at Eccles, 51°, Wolverhampton 52¾°, and Nottingham 53°, and the highest at Truro, 59°, and Brighton and Plymouth, both 58¾°; the general mean from all stations was 55¼°. The mean daily range of temperature in the week was the least at Plymouth, 9¼°, and the greatest at Eccles, 20½°; the mean daily range of temperature from all stations was 14°.

The mean temperature of the air for the week from all stations was 60¾°, being 3¼° higher than the value for the corresponding week in 1877. The highest were 62¼° at both Brighton and Truro, 61¾° at Norwich, and 61½° at Cambridge; and the lowest were 58° at Wolverhampton and 59° at Liverpool.

Rain fell on every day in the week at Brighton, and on five or six days at most other places. The heaviest falls were at Sunderland, 1.91 inch, Hull 1.39 inch, Norwich 1.32 inch, and Nottingham 1.30 inch; and the least falls were at Sheffield, 0.52 inch, and Bristol 0.53 inch. The average fall over the country was 1.10 inch.

The weather during the week was dull and showery.

Frequent *thunder* and *lightning* occurred at Hull during the week. (The total fall of rain in August at Brighton was 4.52 inches, being greater than the fall in that month during thirty years.)

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 72½° at Glasgow and Edinburgh to 64½° at Aberdeen; the mean value from all stations was 69¾°. The lowest temperatures of the air varied from 46° at Perth to 55¼° at Aberdeen; the mean value from all stations was 49½°. The mean range of temperature in the week from all stations was 20°.

The mean temperature of the air for the week from all stations was 59¾°, being 6½° higher than the value for the corresponding week in 1877. The highest was 61½°, at Dundee, and the lowest 58¾°, at Greenock.

Rain.—The heaviest falls of rain were 2.59 inches at Edinburgh and 1.64 inch at Leith, and the least falls were 0.77 inch at Glasgow and 0.90 inch at Edinburgh; the average fall over the country was 1.41 inch.

DUBLIN.—The highest temperature of the air was 74°, the lowest 46°, the range 28°, the mean 59¾°, and the fall of rain 0.95 inch.

JAMES GLAISHER.

Obituary.

WE regret to hear of the death of Mrs. M. OSBORN, relict of the late Mr. T. Osborn, of Fulham. She had for several years, after the death of Mr. Thomas Osborn and his brother in 1872, the entire charge of the business, and consequently was widely known amongst gardeners and others connected with horticulture. She died last Friday, the 30th ult., aged 61, after an illness of six months' duration. The nurseries at Fulham and Sunbury are now carried on by her son, Mr. Robert Osborn.

Variorum.

GAME HAMPERS.—Dr. D. G. F. Macdonald writes to us:—"Sportsmen will soon be sending presents to their friends, and as all kinds of game are a great temptation to railway *employés*, I would suggest that hampers, with lids stitched round with strong twine, and the two ends knotted and sealed, should be used. I never had a hamper robbed that was thus treated; whilst game has constantly been stolen from deal boxes, which are easily wrenched open and reclosed without showing any sign of having been tampered with. Moreover, game keeps better in hampers, as the air passes freely through the wicker-work. I have found, too, when birds are hard shot, that sprinkling pepper and salt under their wings, and packing them in Heather and wild Myrtle, keeps them sweet longer than anything else, except perhaps ground coffee."

WATERPROOF.—Some time since we were requested to make trial of a newly-introduced waterproof coat, which should not only exclude water, but permit egress of air, and so secure ventilation. We were requested to apply any test that we thought fit. After discharging sundry pailfuls of water over it without penetrating it, a capital opportunity was afforded by one of the torrential rains we have had lately, when something very like a waterspout burst over our garden. We promenaded in perfect dryness, and finding the water rushing over the roof and gutters of the house in a perfect cataract, we placed ourselves for some minutes in the full flow of the torrent and escaped without a wet thread where protected by the coat. We can therefore safely recommend it to all gardeners, foresters, land stewards, and others who have to brave the elements. The makers are Messrs. Bartram, Harvey & Co., 23, Gresham Street, gentlemen who are wholly unknown to us personally.

Enquiries.

He that questioneth much shall learn much.—BACON.

ABIES ALBERTIANA.—I have a fine specimen of Abies Albertiana, about 70 feet high, covered with small cones. Can you tell me if it has coned in this country before? *H. R. S.*

BOTTLING GRAPES: *J. D.* asks what is the best method for keeping ripe Grapes by bottling, what sized bottle should beused, and, generally, how the fruit should be treated?

ROOFING.—A customer of ours in Ceylon writes us:—"Could you let me know of any light material that I could get for roofing to give plenty of light, cloth rots so soon; or are there any compositions I could dip it in to make it waterproof to keep it from rotting so fast?" C. & R.

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

ABUTILON: *J. George.* The dwarf habit you describe must be an advantage. Of the flowers sent Nos. 1 and 2 appear to be the best. No. 1 is the darkest we have seen, at least, without others at hand for comparison, it appears so; it is a deep rose with a dash or bloom of magenta. No. 2 is a fine primrose. No. 3, pink, does not appear so distinct.

ASHLEAF KIDNEY POTATOS: *C. H.* Your kidney is, without doubt, the old Ashleaf Potato, and exhibits all the features that characterise its tubers, which are long, flat, somewhat curved and pointed at one end, with prominent eyes. A very good sample.

BOOK ON PINES: *Pater.* The best book for your purpose is *The Culture of the Pine-apple*, by David Thomson, published by Blackwood & Sons, the cost of which is a few shillings.

BURNING CLAY: *J. T. S.* About London this is done at any season, but preferably in autumn and in dry weather; the ground is dug out to a depth of 6 inches or 8 inches, then a thick layer of brushwood is placed on

the ground, over that a layer of fine breeze or coal, then a layer of clay, then more breeze followed by more clay, and so on. The cost about London is about 3*s.* a yard.

CLOVES: *An Old Clove.* The white Clove, Susan Askey, is in the hands of the raiser, Mr. William Culverwell, Thorpe Perrow Gardens, Bedale. It can also (we think) be obtained from Messrs. James Carter & Co., 237, Holborn, W.C. The salmon-coloured variety is grown by Mr. R. Dean, Ranelagh Road, Ealing, W., but we are not certain if it bears a name, or has been distributed in any way.

FERNS DEPAUPERATED: *K. D.* The fronds seem to have been half-devoured by caterpillars while quite young, and to have gone on developing sori on the portions left intact, the mature fronds thus acquiring a singularly depauperated appearance.

FUMIGATORS: *R. T.* We can only insert your letter in our advertising columns.

FUNGI: *J. S. C.* The fungus sent is a species of Clavaria. The Willow leaves are covered with galls. —*F. W., Westerham.* The name of the fungus is Clavaria vermiculata. It is said to be wholesome if cleaned, made dry, and then cooked in small bundles, like Asparagus. It must be served hot, and when ready brought to the table with a little cream or yelk of egg.

GALEGA OFFICINALIS ALBA NEAR EASTBOURNE: *D., Deal.* Other correspondents confirm the opinion that this is the plant intended.

GARDENERS' WAGES: *R. F.* The questions are legal ones, which we cannot undertake to advise upon; but we presume a month's notice would be proper on either side.

GLADIOLI: *T. Browne.* The failure is probably attributable to the cold, wet, ungenial season, and the consequent low earth temperature. You can transplant the Conifers mentioned, which are free-growing sorts, either in autumn or spring. If it is only one or two choice specimens, we should prefer doing it in spring, just as the young growth is being made.

POTATOS WITHIN POTATOS: *Messrs. Bunyard.* This production is not very uncommon. We see several



FIG. 58.—POTATO WITHIN POTATO.

specimens every year. The new tubers grow at the expense of the old. (See fig. .)

INSECTS: *C. W. H., Co. Meath.* We can determine nothing from your drawing of a "beetle," found in the centre of the stem of a young Larch. The drawing certainly does not represent any known beetle. It may be an Acarus of some kind, or a Coccus. There is a beetle (Hylurgus piniperda) found in the twigs of Conifers, but it is a real beetle. *I. O. W.*

MULBERRY: *X. B.* Does your tree produce flowers at all? Generally the Mulberry bears male and female flowers on the same tree; but we have occasionally seen trees which produce only male catkins, and consequently no fruit. We have also known the same tree to produce in one year all male, the following year all female flowers. We cannot explain the fact.

NAMES OF FRUIT: *J. Doborne.* Send us other specimens; the last were received completely smashed.

NAMES OF PLANTS: *C. M.* 1, Potentilla; 2, Lysimachia vulgaris; 3, Pyrethrum Parthenium; 4, Tanacetum vulgare; 5, we do not recognise; 6, Senecio sarracenicus; 7, Verbascum nigrum. Why send such miserable scraps? Remember they are smashed before we get them, when packed as you send them. —*H. M. K.* Catasetum macroglossum.—*J. C. D.* The tree is Fraxinus heterophylla, and the shrub Phlomis fruticosa.—*W. W. A.* 1, Dendrobium chrysanthum; 2, indeterminable; 3, Vitis discolor; 4, specimen insufficient—why send such scraps?—*G. G., Brechin.* Convolvulus pubescens, fl.-pl.—*W. Roberts.* Abelia serrata, var.—*T. B. S.* 3, Tecoma jasminoides. —*K. & F.* Potamogeton natans.—*T. B. W.* 1, Panicum plicatum; 2, Chenopodium—indeterminable; 3, Euphorbia heliioscopia; 4, Circæa Lutetiana; 5, Calamintha Clinopodium.—*C. E. F.* Probably Hieracium boreale.

PEACHES: *Young Beginner.* We cannot tell why your Peaches drop before ripening, unless it be from drought at the root.

PTERIS SERRULATUM: *J. G.* The seedlings of the variety Applebyana come much in this way.

ROSE YORK AND LANCASTER: *Subscriber.* This Rose is described in Paul's *Rose Garden*, 1st edit., p. 25, div. ii., "flowers white, striped with pale red, large and full." It is a robust growing sort, with rough spinous shoots, and pale green bark.

THORNTON HEATH FLOWER SHOW: *J. J.* Anticipated by a report from another source.

CATALOGUES RECEIVED:—Messrs. Dickson, Brown & Tait (43 and 45, Corporation Street, Manchester), Autumn Catalogue of Dutch and French Flowering Bulbs, &c.—Messrs. Robert Mack & Son (North of England Rose Nurseries, Catterick Bridge, Yorkshire), Catalogue of Select Roses.—Messrs. Thomas Kennedy & Co. (Dumfries), Select Catalogue of Dutch Flower Roots.—James Vick (Rochester, New York), Floral Guide and Catalogue, and Wholesale List of Bulbs.—Messrs. Thomas Perkins & Sons (34, The Drapery, Northampton), Descriptive Catalogue of Imported Flower Roots, Spring Bedding and other Plants, &c.—Messrs. Paul & Sons (The Old Nurseries, Cheshunt), Autumn Catalogue of Bulbs and Strawberries; also List of Metallic Card Labels, &c.—Thos. Warner (69, Market Place, Leicester), Catalogue of Flower Roots.—Charles Turner (Royal Nurseries, Slough), Catalogue of Hyacinths, Narcissus, Tulips, and Choice Bulbous Roots; also List of Strawberries.—Richard Dean (Ealing, London, W.), Catalogue of Bulbous Roots; also List of Choice Seeds.—Messrs. Kent & Brydon (Darlington), Catalogue of Flowering Bulbs.—Messrs. W. Paul & Son (Waltham Cross, London, N.), Select Catalogue of Bulbs, Camellias, Azaleas, &c.—Messrs. Osborn & Sons (The Fulham Nurseries, London, S.W.), Catalogue of Tulips, Hyacinths, and other Choice Flower Roots.—Messrs. J. Cocker & Sons (82, Union Street, Aberdeen), Descriptive Catalogue of Dutch Flower Roots.—J. W. Mackey (23, Upper Sackville Street, Dublin), Descriptive Catalogue of Dutch Flower Roots.—Messrs. W. Drummond & Sons (Stirling), Descriptive Catalogue of Dutch Flower Roots.—Messrs. Barr & Sugden (12, King Street, Covent Garden, London, W.C.), Descriptive Catalogue of Bulbs and Plants.—Alfred Legerton (5, Aldgate, London, E.), Wholesale Catalogue of Dutch and other Flower Roots.—A. M. C. Jongkindt Connick (Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands), Lists of Coniferæ, &c.—Messrs. J. Dickson & Sons (108, Eastgate Street, Chester), List of Bulbous Flower Roots, &c.

COMMUNICATIONS RECEIVED:—T. P.—E. K.—W. H.—J. H.—E. F.—H. C.—O.—Ivy Green.—A. G.—B. & Sons.—S.—H. N. E.—G. M.—R. E. O.—W. H.—F. v. M.—J. E. & Sons.—J. T. P.—J. T. B.—Sir G. MacL.—A Frequenter of Kew Gardens.—W. C.—A. F.—L. W.—Rev. A. F.—Messrs. Bunyard.—M. W.—J. N.—B. C.—Th. C. B. (with thanks).

Markets.

COVENT GARDEN, September 5.

The state of the market is still very quiet, prices remaining about the same. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz.	.. 4	0-12 0	Foliage Plants, various, each	.. 2	0-10 6
Begonias, per doz.	.. 4	0-12 0	Fuchsias, per doz.	.. 3	0-12 0
Bouvardias, do	.. 9	0-24 0	Hydrangea, per doz.	9	0-18 0
Calceolarias, p. doz.	6	0-12 0	Mignonette, per doz.	3	0- 9 0
Chrysanth., per doz.	6	0- 9 0	Musk, per dozen	.. 2	0- 6 0
Coleus, per dozen	.. 3	0- 9 0	Myrtles, per doz.	.. 4	0-12 0
Cyperus, do.	3	0-12 0	Palms in variety, each	.. 2	6-21 0
Dracæna terminalis	30	0-60 0	Pelargoniums, scarlets, zonal, doz	.. 2	6- 9 0
— viridis, per doz.	..18	0-24 0	— Fairy, per doz.	9	0-12 0
Euonymus, various, per dozen	.. 4	0-18 0	Vallota, per doz.	.. 9	0-24 0
Ferns, in variety, per dozen	.. 4	0-18 0			
Ficus elastica, each	2	6-15 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6- 1 0	Myosotis, 12 bun.	.. 3	0- 6 0
Asters, 12 bunches	3	0- 9 0	Pelargoniums, 12 spr.	0	9- 1 6
Bouvardias, per bun.	1	0- 4 0	— zonal, 12 sprays	0	4- 1 0
Calceolaria, 12 bun.	6	0-12 0	Phlox, 12 bunches	.. 6	0-12 0
Carnations, 12 bunch	4	0-12 0	Primula, double, per bunch	.. 1	0- 2 0
Cornflower, 12 bun.	2	0- 6 0	Pyrethrum, 12 bun.	3	0- 6 0
Dahlias, 12 bunch.	3	0- 9 0	Roses (indoor), doz.	1	6-12 0
Delphinium, 12 bun.	6	0-12 0	— (outdoor), 12 bun.	3	0-12 0
Eucharis, per doz.	4	0-12 0	Stephanotis, 12 sp.	3	0- 9 0
Gardenias, 12 blms.	3	0- 9 0	Stocks, 12 bunches	4	0- 9 0
Gladioli, various, 12 spikes	.. 1	0- 4 0	Sweet Peas, 12 bun.	2	0- 6 0
Heliotropes, 12 sp.	.. 0	6- 1 0	Sweet Sultan, 12 bun.	6	0- 9 0
Jasmine, 12 bunches	0	9-12 0	Tropæolum, 12 bun.	1	0- 4 0
Mignonette, 12 bun.	2	0- 6 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	.. 2	0- 4 0	Herbs, per bunch	.. 0	2- 0 4
Aubergines, p. doz.	1	0- ..	Horse Radish, p. bun.	4	0- ..
Beans, French, lb.	.. 0	4- 0 6	Lettuces, Cos, Eng., per score	.. 1	6- 2 6
— runners, p. bush.	4	0- 6 0	Mint, green bunch	.. 0	4- 0 6
— broad, per bush.	1	6- ..	Onions, young, bun.	0	4- 0 6
Beet, per doz.	.. 1	0- 2 0	Parsley, per bunch	.. 0	4- ..
Cabbages, per doz.	.. 1	0- 2 0	Peas, green, per qr.	1	6- 2 0
Carrots, per bunch	.. 0	4- 0 6	Radishes, per bunch	0	1- 0 3
Cauliflowers, per doz.	4	0- 6 0	— Spanish, doz.	.. 1	0- ..
Celery, per bundle	.. 1	6- 2 0	— New Jersey, doz.	2	0- ..
Chilis, per 100	.. 5	0- ..	Shallots, per lb.	.. 0	6- ..
Cucumbers, each	0	4- 1 6	Spinach, per bushel	2	0- 3 0
Custard Mar., doz.	3	0- ..	Tomatos, per dozen	2	6- 3 0
Endive, Batav. dozen	1	6- ..	Turnips, new, p. bun.	0	6- ..
Garlic, per lb.	.. 0	6- ..	Vegt. Marrows, doz.	2	0- ..

Potatos are very plentiful, and in some places much diseased. Prices range:—Myatt's, 120*s.* to 160*s.*; Regents, 100*s.* to 130*s.*; Early Rose, 110*s.* to 120*s.* per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	.. 1	6- 4 0	Melons, each	.. 1	0- 3 0
Figs, per dozen	.. 0	6- 2 0	Peaches, per dozen	.. 1	0- 8 0
Filberts, per lb.	.. 0	6- 0 9	Pears, per doz.	.. 1	0- 3 0
Grapes, per lb.	.. 0	6- 4 0	Pine-apples, per lb.	2	0- 6 0
Lemons, per 100	..10	0-18 0	Plums, ½-sieve	.. 2	0- 5 0

SEEDS.

LONDON: *Sept.* 4.—No special feature of interest has this week been developed in connection with the trade for farm seeds. Owing to the recent rains, and the damage thereby inflicted on the new crop, yearling red Clover seed is naturally held with greater firmness, but no large amount of business has yet resulted. One or two samples of new German red have been exhibited on Mark Lane, but values are, of course, not yet fixed. Some new English Alsike has been offering at a moderate price. Trefoil is without change: from abroad no extensive offerings of this article are being as yet made. From the official figures, issued this day, it appears that the land under Clover in Ireland displays a striking increase on former years—the breadth for 1874 being 1,906,679 acres, and for 1878 1,942,716 acres. Advices from Chicago, bearing date August 21, state that the receipts of Timothy seed were then increasing, but that, so far, they had been only half those of last year. Trifolium finds buyers on former terms. Winter Tares continue in good supply; the quality is satisfactory, and prices are reasonable. The same can be said of the new English Rye. Blue Peas are scarce and firmer. The unfavourable weather has delayed the appearance of the new English Mustard seed: the samples which have thus far appeared have been almost invariably soft and damp. There is no alteration in Rape seed. Hemp and Canary seed are both steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday trade was firm, but not fast. In Wheat, either English or foreign, very little was doing. Red produce varied from 38*s.* to about 46*s.*, and Wheat from 46*s.* to 52*s.* per quarter. Old foreign Wheat made an advance of 1*s.* per quarter, as compared with the prices of Monday se'nnight. Grinding Barley was in better demand, at an advance of 1*s.* per quarter. Malting parcels were, of course, neglected. Malt was quiet, and without change. Oats and Maize were in fair request, and prices showed an improvement of 6*d.* per quarter. Beans and Peas were firm, with an upward tendency. Flour supported its rates of last week in the sales concluded.—Wednesday's trade was very quiet, and no material change took place in prices. The supply of English Wheat was limited, and the sales made were at no better prices than on Monday. Foreign Wheat was steady. Grinding Barley was in fair demand, and there was some inquiry for Oats and Maize at the advance recently reported. Beans, Peas, and flour were unchanged.—Average prices of corn for the week ending August 31:—Wheat, 45*s.* 8*d.*; Barley, 32*s.* 1*d.*; Oats, 26*s.* 2*d.* For the corresponding period last year:—Wheat, 62*s.*; Barley, 34*s.* 6*d.*; Oats, 27*s.* 5*d.*

CATTLE.

At the Metropolitan Market on Monday the demand for beasts was good, and choicest qualities were pretty freely sold at about late rates; middling were on the average rather lower. Sheep were readily disposed of at fully late rates. The lamb trade was very dull, only a few of the choicest were saleable. No alteration was observable in the calf trade. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* to 6*s.* 10*d.*; lambs, 6*s.* 8*d.* to 7*s.* 4*d.*—On Thursday the cattle trade was, on the whole, steady. Fine breeds, both of beasts and sheep, were in good request, and were as dear as on Monday. Other qualities sold rather slowly. Calves and pigs were quiet.

HAY.

From Tuesday's Whitechapel report we learn that there was a good trade doing, and prices were firmer. The supply was rather short. Prime old Clover 120*s.* to 135*s.*; new, 100*s.* to 115*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 90*s.* to 97*s.*; new, 80*s.* to 85*s.*; inferior, 50*s.* to 70*s.*; and straw, 43*s.* to 52*s.* per load.—On Thursday there was a short supply of produce offering. More activity was noticed in the trade, and prices improved. The quotations were as follows:—Prime old Clover, 120*s.* to 140*s.*; new, 100*s.* to 120*s.*; inferior, 80*s.* to 90*s.*; prime old meadow hay, 90*s.* to 97*s.*; new, 80*s.* to 90*s.*; inferior, 50*s.* to 70*s.*; and straw, 43*s.* to 54*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 90*s.* to 100*s.*; inferior, 65*s.* to 80*s.*; superior Clover, 126*s.* to 132*s.*; inferior, 90*s.* to 105*s.*; and straw, 50*s.* to 55*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that the supplies continue moderate, and disease is still spoken of in some Essex samples. Trade remains steady. The following are the prices:—Kent Regents 120*s.* to 130*s.* per ton; Essex ditto, 80*s.* to 100*s.*; Early Rose, 120*s.* to 130*s.*; kidneys, 100*s.* to 140*s.*; shaws, 50*s.* to 80*s.*—The receipts at the port of London last week were confined to 906 bags shipped from various Continental ports, principally Hamburg.

COALS.

The prices quoted during the week have been as follows:—Bower's West Hartley, 15*s.* 3*d.*; Bebside West Hartley, 15*s.* 3*d.*; East Wylam, 16*s.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 16*s.* 3*d.*; Hawthorns, 16*s.* 3*d.*; Lambton, 17*s.*; Original Hartlepool, 17*s.* 6*d.*; Wear, 15*s.* 6*d.*; Chilton Tees, 17*s.*; Caradoc, 17*s.* 6*d.*; Salvin's Hutton, 17*s.*; Thornley, 17*s.*

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truck-loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

Dear Sirs,—With reference to your enquiry respecting the Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

Important to all Admirers of Clean, Healthy Foliage.

SPEED'S



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Pencil Vineyard, Clevedons*, writes:—"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."

Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2s., 3s. 6d., 6s., and 10s. each.

It is most economically applied with a Vaporiser, price 2s.

Prepared by Alfred Lowe, Chemist, Chesterfield

Agents:—London, J. Veitch & Sons, Chelsea, S.W.; Hurst & Son, 6, Leadenhall Street, E.C.; Corry & Soper, Shad Thames, S.E.; Dick Radclyffe & Co., 128, High Holborn, W.C.; W. Cuthbush & Son, Highgate Nurseries, N.; Chester, J. Dickson & Sons; Manchester, Dickson, Brown & Tait; York, J. Backhouse & Son; Hull, Martin & Son; Sheffield, Fisher, Holmes & Co.; Birmingham, Felton & Sons, R. H. Vertegans; Colchester, New Plant & Bulb Co; Cheltenham, Heath & Son; Peterborough, J. House; Hereford, Cranston & Co., King's Acre; Nottingham, J. R. Pearson; Edinburgh, Downie & Laird, Ireland & Thomson, T. Methven & Son; Aberdeen, W. Smith & Son; Dundee, W. P. Laird & Sinclair, Stirling, W. Drummond & Son; Hawick, J. Forbes; Belfast, J. Boyle, Balmoral; Dorking, H. Appleby; Stoke-on-Trent, Burgess, Kent & Son; Wellington, C. Butler; Mansfield, G. Rymer; Saffron Walden, W. Chater; Jedburgh, C. Irvine; Lichfield, E. Holmes, Whittington Nurseries; Thirsk, F. Hutchinson; Kingston-on-Thames, T. Jackson & Son; Beverley, G. Swales; Wavertree, J. Dewar & Co.; Newcastle-on-Tyne, J. Thompson; Worksop, T. Marris.

Agents wanted in every district.

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The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

Extract from *Building News*.

"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

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Sixty splendid PEACH and APRICOT TREES, in pots, healthy and vigorous.

One of WRIGHT'S new FLAME-IMPACT Hot-water BOILERS, universally acknowledged to be the best ever yet introduced, and only in use a few months. A large quantity of HOT-WATER PIPES of sizes, with Valves, Elbows, and other connections.—For particulars, apply to

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SIR JOSEPH PAXTON'S HOTHOUSES FOR THE MILLION

ARE CHEAP, PORTABLE and LASTING.

Send for the Shilling Handbook (of sixty pages), fully describing above, with twenty-eight Illustrations, Plans of Heating, &c., and Directions for Vine and Fruit Tree Culture, by a Practical Gardener.

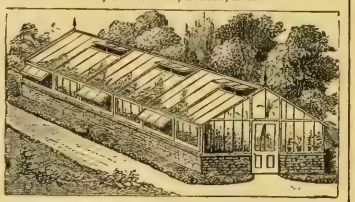
A smaller Pamphlet, with views, testimonials, &c., *3d.*, post-free. Carriage-paid Priced LISTS gratis.

Estimates given for any kind of structure in Wood and Glass, also for Heating Apparatus.

Glass Boundaries and Winter Gardens arranged.

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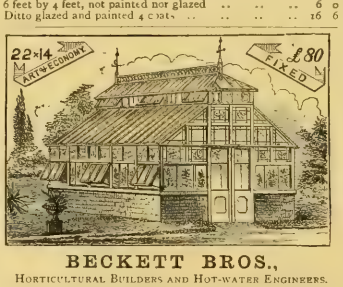
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Estimates given on application for GREENHOUSES and CONSERVATORIES of all kinds, and to any design.

GARDEN BOXES and LIGHTS.	Each.
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Portable Box with One Light, 6 feet by 4 feet, glazed good 15-oz. sheet glass, painted four coats, and packed ready for use	35 0
Portable Box with Two Lights, as above, each light 6 feet by 4 feet	65 0

LIGHTS ONLY.	
3 feet by 4 feet light, not painted nor glazed	3 6
Ditto glazed, good 15-oz. sheet glass, and painted 4 coats	10 0
6 feet by 4 feet, not painted nor glazed	6 0
Ditto glazed and painted 4 coats	16 6



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Patentees & Manufacturers of the Self-adjusting Throttle Valve, now so much in use for Horticultural purposes.

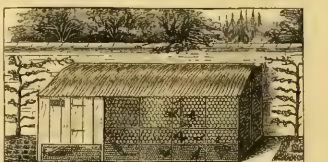
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The Night House is made of wood, painted green outside and lime-whited inside, with run underneath for shade and shelter; new O.G.-shaped galvanised roof, which is very ornamental, and affords good ventilation; fitted with shifting perches, sliding window, large door and lock for attendant, small door for fowls, and hen ladder, no nest boxes. Strong galvanised Wire Run, with corrugated iron roof, door, and lock, and all necessary bolts and nuts complete.

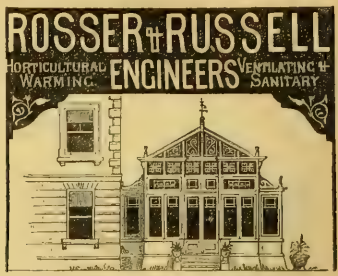
Prices—Carriage paid to any railway station in Eng'and:

1st size, No 7, with run complete, 12 feet long, 4 feet wide	£7 5 0
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3d size, No. 9, with run complete, 16 feet long, 6 feet wide	12 0 0

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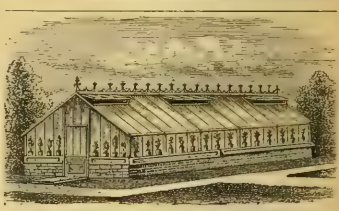
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GREENHOUSES complete, from £10 to £1000.

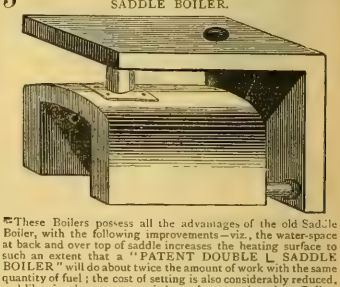
PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } £35s.

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Well-seasoned Materials and First-class Workmanship guaranteed.

JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	18 in.	18 in.	300	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1000	16 0 0
24 ,,	24 ,,	48 ,,	1400	20 0 0
28 ,,	28 ,,	60 ,,	1800	25 0 0

Larger sizes if required.

From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

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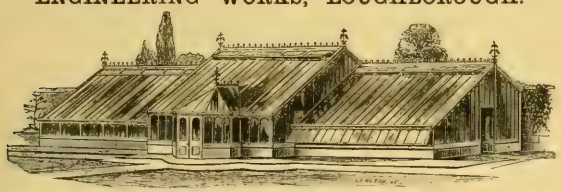


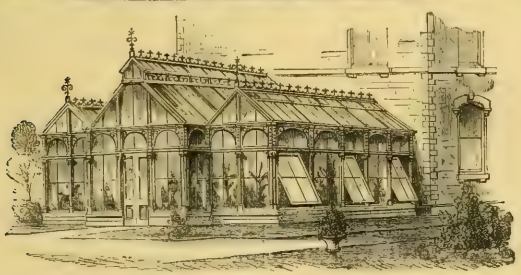
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Horticultural Buildings erected on Messenger & Co.'s Patent Method of Construction are very strong, *most durable, light, elegant, amply ventilated, perfect efficiency* for intended purpose is *guaranteed*, are economical *in cost and maintenance;* combine the peculiar advantages of Wooden and of Iron Houses, without their disadvantages.

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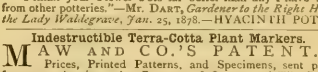
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Sheets of Designs, *6d.* Books of Designs, *1s.*

THE GARDEN POTTERY,
Old Down, Shepton Mallet.
We try to be first, and we mean to be always first,
FOR COLOUR, MANUFACTURE, and WEATHER QUALITIES.
"I think your Flower Pots far better than any I have had from other potteries."—Mr. DART, *Gardener to the Right Hon. the Lady Waldegrave, Jan.* 25, 1878.—HYACINTH POTS.

Indestructible Terra-Cotta Plant Markers.
MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.
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Under the Patronage of the Queen.
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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



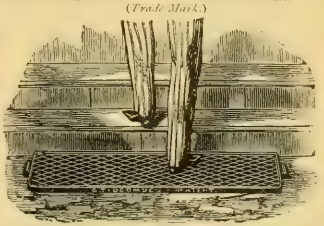


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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
T. ROSHER AND CO., Brick and Tile Merchants.
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SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
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N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

THE GRAVEL-WALK METAL SCRAPER MATS.—They give a finished appearance to Entrances, and are suitable for all kinds of Gravel-walk entrances in all weathers, either to remove the loose grit after summer showers or the dirt or snow of winter. *Their texture gives a firm hold to the feet in whatever direction you step.* They are the width of an ordinary step, and being directly in the path cannot escape use. They save much wear in other mats, floor-cloths, and carpets, and their endurance is a calculable.
(*Trade Mark.*)



Lengths	Prices	Lengths	Prices
2 feet 3 inches ..	.. 10*s.*	3 feet 4 inches ..	.. 16*s.*
2 ,, 6 ,, ..	.. 12*s.*	3 ,, 8 ,, ..	.. 18*s.*
3 ,, 0 ,, ..	.. 14*s.*	4 ,, 0 ,, ..	.. 20*s.*

All 12 inches wide, this being the width of an ordinary step.
Delivered on Railway on receipt of remittance, payable to
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4	Lines	..	..	£0	3	0	15 Lines	..	..	£0	8	6
5	,,	..	..	0	3	6	16 ,,	..	..	0	9	0
6	,,	..	..	0	4	0	17 ,,	..	..	0	9	6
7	,,	..	..	0	4	6	18 ,,	..	..	0	10	0
8	,,	..	..	0	5	0	19 ,,	..	..	0	10	6
9	,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10	,,	..	..	0	6	0	21 ,,	..	..	0	11	6
11	,,	..	..	0	6	6	22 ,,	..	..	0	12	0
12	,,	..	..	0	7	0	23 ,,	..	..	0	12	6
13	,,	..	..	0	7	6	24 ,,	..	..	0	13	0
14	,,	..	..	0	8	0	25 ,,	..	..	0	13	6

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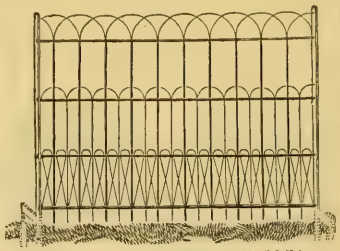
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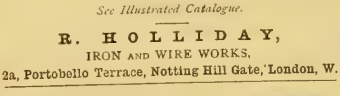


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Have much pleasure in announcing that they will now send out this splendid Seedling Pine-apple, raised at Lambton Castle Gardens; and in recommending this valuable Fruit they cannot give it a higher recommendation than the opinions of several of our best Fruit Growers, who have seen and tasted it.

TESTIMONIALS.

"On a recent visit to Lambton I was much struck with the noble appearance of Pine-apple 'Lady Beatrice Lambton;' a plant of this variety in an 11-inch pot had a fruit, taking it either in size, shape, or handsome proportions, I venture to say would have delighted the heart of the most ambitious Pine-grower. In shape it was a perfect cone, with an even surface, 12 inches high, and at its thickest part 20 inches in circumference, surmounted with a neat little crown. This fruit weighed 10 lb. 2 oz. The colour is bright orange, flesh soft, flavour sweet and juicy, quite distinct from any Pine-apple I ever tasted, and in my opinion much superior to either Charlotte Rothschild or Smooth Cayenne. Much as I esteem these two varieties I predict that the 'Lady Beatrice Lambton,' when well known, will far supersede them.

"Mr. McINDOE, *Hutton Hall Gardens, Guisborough.*"

"I have several times seen your Seedling Pine-apple, 'Lady Beatrice Lambton,' in fruit at Lambton Castle, and have often tasted it, both in summer and winter, and my opinion of it is that, while it far exceeds the Enville in size and resembles it in shape, it equals the Queen and Smooth Cayenne in flavour, and in this respect far excels them in winter.

"WILLIAM THOMSON, *Tweed Vineyard, Clovenfords.*"

"Thanks for the slice of 'Lady Beatrice Lambton' Pine you sent me, cut from a plant ten months old, which much resembles in appearance a well-developed Providence, the pips being of immense size. The flavour is peculiarly luscious, flesh soft and melting, and should the flavour be equally as good of those noble fruits of it I saw swelling in the autumn, some of which weighed upwards of 10 lb., I have not the least hesitation in saying it is one of the most valuable acquisitions among fruit that have been introduced for many past years, and one I venture to predict every Pine-grower when acquainted with it will be anxious to obtain,

"RICHARD WESTCOTT, *Raby Castle Gardens, Darlington.*"

"I have several times seen 'Lady Beatrice Lambton' Pine-apple, and have tasted fruit of it in winter, and consider it the most handsome Pine in cultivation. It grows into cone-shaped fruit of large dimensions in the winter season, when I found it to be remarkably juicy and much better flavoured than Smooth Cayenne or Charlotte Rothschild. It is soft and melting in flesh, like Prince Albert. I consider that these qualities, coupled with its very free fruiting habit, renders it a most desirable acquisition among Pine-apples.

"DAVID THOMSON, *Drumlanrig Gardens.*"

The above are a few of the many Testimonials we have had sent us, all of which agree in stating that it is one of the greatest additions to our fruit-houses that has been introduced for many years.

We also beg to state that our Stock of this Plant is in fine condition, and thoroughly clear of all parasites.

EARLY ORDERS ARE SOLICITED, WHICH WILL BE EXECUTED IN ROTATION.

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Good rooted Suckers, 42s.; Fine Succession Plants, 63s.; Fruiters, 105s.

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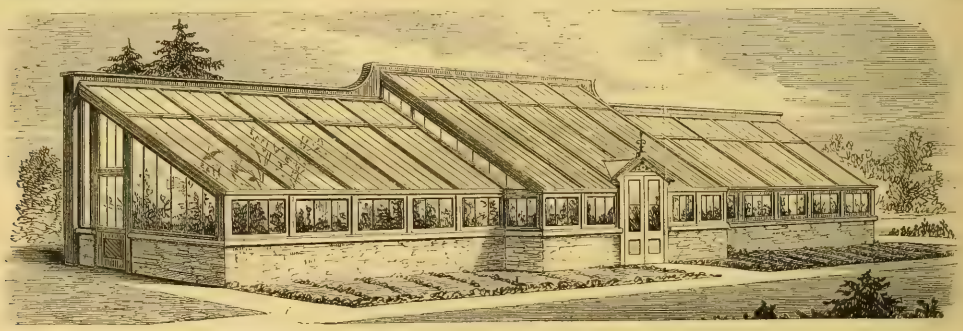
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Conservatories, Greenhouses and Hothouses of every description Erected and Heated in any part of the Kingdom or Abroad.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, September 17, at 11 o'Clock. Competition for Prizes offered by Messrs. James Carter & Co., and Hooper & Co., for TOMATOS. GENERAL MEETING for ELECTION of FELLOWS at 3 o'Clock. Admission One Shilling.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25.

Schedules may now be had on application to Mr. THOMSON, Crystal Palace.

N.B.—The INTERNATIONAL POTATO SHOW will be held on the same day.

THE INTERNATIONAL POTATO EXHIBITION will be held at the Crystal Palace, Sydenham, in conjunction with the Exhibition of Fruit, on SEPTEMBER 24 and 25. Last day of entry, September 17. Schedules and all particulars may be obtained on application to J. A. McKENZIE, 1 and 2, Great Winchester Street Buildings, London, E.C.

SOUTHAMPTON HORTICULTURAL SOCIETY.

Under the Patronage of H.R H. PRINCE LEOPOLD.

A GRAND CHRYSANTHEMUM, FRUIT, and FLOWER SHOW, and EXHIBITION of CAGED BIRDS, will be held on TUESDAY, November 19.

Schedules of Prizes may be obtained of C. S. FUIDGE, Secretary, 39, York Street, Lower Avenue.

LIBERIAN COFFEE. — Strong healthy Plants and live Seed.—For particulars, apply F. R. SINGHORN, Sheen Nursery, Richmond.

FOR SALE, a few large CAMELLIAS, CITRON TREES and FERNS. For particulars, apply, C. ROGERS, Stanage Park, Brampton Brian, Herefordshire.

5000 English-grown

CAMELLIAS and AZALEAS, ranging from 1 to 6 feet high, set with buds, in large or small quantities to suit purchasers.

CATALOGUES and Prices on application. Special terms to the Trade.

HENRY WALTON, Edge End Nurseries, Brierfield, near Burnley, Lancashire.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

Budded Camellias, Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate to his friends and patrons that his stock of the above is of usual excellence and ready for delivery at once. Also Ghent Azaleas, Azalea mollis, Spiræas, Lily of the Valley, Rhododendrons, and Ferns for furnishing, are of the very best quality. The whole at the most reasonable charges.

Wholesale prices on application.

A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

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DUTCH BULBS at DUTCH PRICES.—Hyacinths, Tulips, Crocus, Narcissus, Begonias, Christmas Roses, Gloxinias, Caladiums, Novelties in Bulbs and Roots, Anemone fulgens, Snowdrops, &c. Quality extra. Prices low. Catalogue on application to

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TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.

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Gentlemen's Gardeners, Amateurs, and Others

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GARDEN POTS of best quality, are requested to send their orders to

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Price List on application.

WANTED, CUTTINGS of White and Pink coloured, Silver Variegated, Bronze and Tricolor GERANIUMS. State lowest price per 1000, to

WILLIAM MILES, West Brighton Nurseries, Cliftonville, Sussex.

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E. WILSON, Uffington Gardens, Stamford.

WANTED REGULARLY, for Cash, choice CUT FLOWERS, for Shop Sale.—Apply

T. MILNER and SON, 102, Godwin Street, Bradford.

BEGONIA SEED—Saved from exceedingly beautiful varieties of the handsome-flowered tuberous-rooted section. The flowers have been carefully fertilised, so that splendid new kinds may be expected from this seed. 1s. 6d. and 2s. 6d. per packet.

PRIMULA, CINERARIA, and CALCEOLARIA, from Prize Strains, the best that can be purchased, each at 1s. 6d. and 2s. 6d. per packet.

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GOLD MEDAL for TUBEROUS BEGONIAS.—Seed just harvested from our unrivalled collection. Sealed packets, 1s. 6d. and 2s. 6d. each.

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JOHN LAING and CO., The Nurseries, Forest Hill, S.E.

CHOICE FERNS.—Gleichenia dichotoma, 3s. 6d. each, and upwards; Gleichenia dicarpa and speluncæ, 5s. each, and upwards. Special LIST of other Ferns on application.

W. and J. BIRKENHEAD, Fern Nursery, Sale, near Manchester.

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ROBERT NEUMANN, The Nurseries, Erfurt.

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RAPER and CO., The Fern Nursery, Bedford Street, Leamington.

EUCALYPTUS GLOBULUS.—Tasmanian Blue Gum; Evergreen. Disease Destroying Tree. Destroys the influence of the miasmatic exhalations from the ground in swampy and malarious districts. Acts as a preventive of the miasmata which produces intermittent fever, ague, &c. For Seeds and Plants apply to

J. STEELE, Chelmsford.

FOR SALE, Green EUONYMUS, at 30s., 40s., and 50s. per 100; also AUCUBAS, ARBOR-VITÆ, CUPRESSUS, RETINOSPORAS, Variegated VINCA, all in first-class condition, suitable for pots; together with a GENERAL NURSERY STOCK.

J. B. BUTTERFIELD, Nurseries, Baker Street, Enfield, Middlesex.

To the Trade.

C. WHITEHOUSE, Brereton Nursery, Rugeley, has to offer nice, straight, young, healthy HOLLIES, two years transplanted, good fibrous roots, 12 to 20 inches, most of them suitable for working, at 8s. 6d. per 100. Also fine one-year Seedling Hollies, at 3s. 6d. per 1000, for Cash. Now is a fine time to plant them.

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Dutch Flower Roots, for Present Planting and Spring

Flowering, arriving weekly from well-known farms in Holland—SALES every MONDAY, WEDNESDAY, and SATURDAY during September, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, September 19, at half-past 12 o'Clock precisely, a COLLECTION of ESTABLISHED ORCHIDS, comprising many extremely rare and choice kinds, and including the following :—

Cattleya Dowiana	Dendrobium Ainsworthii
Cypripedium Druryi	Chysis aurea
Trichopilia crispa	Aerides crassifolium
Oncidium Balderramæ	Oncidium sessile
Cattleya exoniensis	Trichosma suavis
Laelia anceps Dawsoni	Cirrhopetalum Thouarsii
Augraecum sesquipedale	Epidendrum prismatocarpum
Odontoglossum Phalænopsis	Cattleya dolosa
Aerides japonicum	Vanda Parishii.

On view morning of Sale, and Catalogues had.

Masdevallia tovarensis.

MR. J. C. STEVENS will include in his Sale of choice Orchids, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 19, at half-past 12 o'Clock precisely, eleven good plants of the white-flowered MASDEVALLIA, M. TOVARENSIS, and at the same time several plants of the scarlet-flowered MASDEVALLIA, M. IGNEA, and some good plants of the new MASDEVALLIA BELLA.

On view the morning of Sale, and Catalogues had.

Dendrobium McCarthiæ.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 19, at half-past 2 o'Clock precisely, several good plants, just imported, of the scarce and beautiful DENDROBIUM McCARTHIÆ, and some good plants of the new DENDROBIUM FINDLEYANUM; also some choice ORNAMENTAL PLANTS, PALMS, and pretty VARIEGATED PLANTS.

On view the morning of Sale, and Catalogues had.

Dendrobium superbiens.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 19, at half-past 12 o'Clock precisely, the magnificent plants, with from ten to fifteen stems each, recently imported, of this new and handsome species. This splendid DENDROBIUM is illustrated at p. 49 of this year's *Gardeners' Chronicle*, and at p. 40 Professor Reichenbach says of it:—"It is a great satisfaction to have this great beauty in cultivation." One great merit of this charming Dendrobium is that its handsome spikes of richly-coloured flowers are extremely persistent, lasting individually eight or ten weeks. At the same time will be sold some very large and fine plants of DENDROBIUM BIGIBBUM.

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(Opposite the Bank of England.)

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MESSRS. PROTHEROE AND MORRIS will SELL the above at the Mart, on MONDAY next, at half-past 11 o'Clock precisely.

Catalogues may be had at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Brunswick Nursery, Tottenham, N.

GREAT TRADE SALE of STOVE and GREENHOUSE PLANTS, WINTER-BLOOMING HEATHS, &c. To commence punctually at 11 o'Clock, there being upwards of 900 lots to get through.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Maller to SELL by AUCTION, without reserve, on the Premises, on THURSDAY, September 19, at 11 o'Clock to the minute, an immense quantity of unusually well-grown plants, consisting of 15,000 WINTER-BLOOMING HEATHS in fine thriving condition, promising a profusion of flowers, in 60, 48, and 32-pots, including 3500 beautifully-grown hyemalis, 3000 gracilis, 300 caffra, 1000 Wilmoreana, large quantities of perspicua, erecta, hybrida, assurgens; 600 remarkably well-berried Solanum capsicastrum, 500 Hydrangea Thomas Hogg, fine Camellias and Azalea indica, set with bloom-buds; 1000 extra fine Tree Carnations, 3000 Bouvardias of sorts, 500 Acacia armata, 2000 well furnished Adiantum cuneatum, 200 Ficus elastica, 3500 Poinsettias, 300 Daphne indica rubra, 4000 exceedingly fine Cyclamens, 1000 Gemistas, 1000 Grevillea robusta, 500 Euphorbia jacquiniflora, Clematises of sorts, 300 double Primulas, 200 strong Vines, 2000 Cinerarias, 1000 Dracænas, Palms, 500 Gardenia intermedia, &c.

May be viewed any day prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C.

Lower Norwood, close to the Station.
THIRD ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Castle Nursery, Lower Norwood, on TUESDAY, September 24, at 12 o'Clock precisely, by order of Mr. H. James, a choice collection of Established ORCHIDS in splendid condition, many of which are showing flower, including Phalænopsis, Odontoglossums, Dendrobium Wardianum, Oncidium (prætextum), O. Kogersii, with splendid spikes; Vandas, Calanthes, Saccolabiums, six well established plants of the beautiful and rare Maxillaria lepidota, 500 DRACÆNAS, well coloured; an assortment of STOVE and GREENHOUSE PLANTS, FERNS, Specimen CAMELLIAS, 500 TREE CARNATIONS in fine condition, and other Miscellaneous Stock, worthy the attention of the Trade and also of private buyers.

On view the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Bury Nursery, Bury Street, Edmonton.
By order of the Executrix. Entirely without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on WEDNESDAY, September 25, at 1 o'Clock precisely, unless previously disposed of by private treaty, the whole of the STOCK IN TRADE, comprising fine specimen Camellias, Primulas, Stephanotis, Gardenias, Roses in pots, &c., together with the Utensils in trade and effects.

On view the day prior to the Sale. Catalogues on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C.

N.B.—The LEASE of the NURSERY, about 18 years unexpired, at a rent of £100 per annum, TO BE DISPOSED OF. The Stock may also be purchased privately. No reasonable offer will be refused. Apply to the Auctioneers as above.

Tooting, S.W.
FIFTEENTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, S.W., on THURSDAY, September 26, at 1 o'Clock precisely, a quantity of extra stock of STOVE and GREENHOUSE PLANTS, the whole of which are in healthy and thriving condition, including Lapagerias alba and rosea superba, Aralia Veitchii, Anthurium Scherzerianum, choice Orchids, comprising Vanda suavis (Veitch's variety), Saccolabiums ampullaceum and guttatum, Angræcum eburneum superbum, Calanthe Veitchii, Cattleyas, Dendrobiums, and Odontoglossums in variety, Exotic Ferns, selected Palms, a fine assortment of English-grown Camellias, well set with buds; Succulents, Hardy Herbaceous Plants, &c.

On view the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 38, Gracechurch Street, E.C., and Leytonstone, E.

N.B. The ANNUAL SALE of NURSERY STOCK will take place on OCTOBER 28 and 29.

TO BE SOLD, as a going concern, a NURSERY, situate within 9 miles of London and near Railway stations. Comprises well-arranged Nursery, six large Greenhouses, Sheds, Stables, &c., and about 2 acres of Ground for Market Growing, well stocked.

H. A., Mrs. Knight's, Winchmore Hill, N.

FOR DISPOSAL, through ill-health, an excellent FLOWER, SEED, FRUIT, and BULB BUSINESS, situate in a main thoroughfare, and doing a large and increasing trade. Incoming about £500. To any one wishing to commence business, this is an unheard-of opportunity.

Full particulars by address ing A. Z., *Gardeners' Chronicle* Office, W.C.

Nursery and Seed Business.

TO BE LET, a compact small NURSERY, with a good Seed Business, close to Southampton, Winchester, Romsey, and other towns, with frequent railway communication to each, containing a good Vinery planted two years since, Cucumber House, two other Plant Houses, Pits and Frames, about two acres of Ground well stocked with Fruit Trees, Asparagus Beds, Strawberries Roses, Shrubs, Greenhouse Plants, &c. A good Dwelling House and Shop attached with a first-class business frontage, close to an important Railway Station and in a rapidly increasing neighbourhood. There is a certain and very remunerative sale for Cucumbers, Asparagus, Tomatos, Strawberries, and other Fruits. The Stock to be taken at a valuation, part to be paid at once, the remainder as would be agreed upon. Rent £50 a year. The proprietor giving it up as he is unable to attend to it, and will explain why. An excellent opportunity for a Gentleman's Gardener wishing to commence business, and who can command from £300 to £400. A Lease can be given. Apply, in the first instance, to

W. D., Brook Cottage, Chad Valley, Birmingham.

SPIRÆA JAPONICA.—Immense Stock of very splendid clumps for forcing, 12s. and 16s. per 100.
The Lily Nursery, Ghent, Belgium.

CHRISTMAS ROSES.—Imported healthy plants may be had in very large quantities, 12s. per 100, 100s. per 1000, 800s. per 10,000.
The Lily Nursery, Ghent, Belgium.

HEPATICA CŒRULEA, with 1 to 3 and 4 extra fine flowering crowns, 10s. per 100, 80s. per 1000, 700s. per 10,000
The Lily Nursery, Ghent, Belgium.

AZALEAS, CAMELLIAS with buds, PALMS for decoration and seedlings in store pots, FICUS ELASTICA, DRACÆNA INDIVISA and other sorts, ARALIA SIEBOLDII, ASPIDISTRA, PHORMIUMS, YUCCAS, LILIES, and other BULBS, may be had in small or large quantities, at the most liberal rates
J. VANDER SWAELMEN, The Lily Nursery, Ghent, Belgium.

GARDENIA.—For Sale, 10 Gardenia florida, healthy plants; also Two large Red CAMELLIAS. Size and price on application to
J. PREWETT, Swiss Nursery, Hammersmith, W.

STRAWBERRY DUKE of EDINBURGH (Moffat).—Strong well-rooted runners of this famous variety from the original Stock, the best for general crop and marketing, 7s. 6d. per 100; 12 plants post-free for 2s.
TODD AND CO., Seedsmen, Maitland Street, Edinburgh.

CABBAGE PLANTS for SALE, at the Noted Elms Farm, Barnes, Surrey.
F. TROWELL AND SON, having grown Plants for fourteen seasons from Selected Stocks, now offer to Market Gardeners and Others this season's Plants at lower prices than in previous years, in large or small quantities

TO LARGE PLANTERS, CEMETERY CONTRACTORS, &c.
YEWS, English, 2 to 3, 3 to 4, and 4 to 5 feet.
LAURELS, common, 2, 2 to 3, 3 to 4, and 4 to 5 feet.
LIMES, fine grown, 3 to 4, 5 to 6, and 8 to 10 feet.
CHESTNUT, Horse, 8 to 10 feet.
Special quotations on application, and sample doren sent to any part of Great Britain.
GODWIN AND SON, Ashbourne, Derby.

STRONG CLUMPS for FORCING.

	p. 100	p. 1000	p. 10,000
DIELYTRA SPECTABILIS	£1 5	£10 17	
HOTEIA (Spiræa) JAPONICA	0 14	5 17	£56
SPIRÆA PALMATA	4 4	37 10	

Orders to the amount of £2 free throughout Great Britain.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Notice to the Trade.

W. J. CALDWELL AND SONS are now sending ont their well-known AZALEA AMŒNA CALDWELLI, strong plants, 18s. per dozen; larger size, 24s
Also splendid plants of GLEICHENIA DICHOTOMA, at 3s. 6d. and 5s. each, 36s. and 50s. per dozen.
The Nurseries, Knutsford, Cheshire.

J. LINDEN'S Exotic Nurseries, Ghent, Belgium.—The CATALOGUE of CAMELLIAS, AZALEAS, RHODODENDRONS, PALMS, NEW PLANTS, and WHOLESALE LIST of PALMS, is now ready, and will be sent on application to J. L. as above, or to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

STRAWBERRY PLANTS.—Moffat's Duke of Edinburgh, fine strong plants at 7s. 6d. per 100. Trade supplied on moderate terms.
Awarded special prize at Edinburgh, July, 1878.
GEORGE SINCLAIR, Phantassie Orchard, Prestonkirk, N.B.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narciss, 10s. per bushel, 6s. per half-bushel, 3s. 6d. per peck. Likewise Bulbs of LILIUM BULBIFERUM, 15s. per 100, 2s. 6d. per dozen. Terms cash with order. Package free. Post-office Orders payable at Vauxhall Cross.
Mrs. ALDERSON, Langley Lane, South Lambeth, Surrey.

BEDDING GERANIUMS.—Stock plants, lifted from flower garden, at the following low prices, for cash:—
SCARLET—Vesuvius, Bayard, Violet Hill Nosegay, Baron Ricasoli, Lord Palmerston, 12s. per 100.
PINK—Miss Skipworth, Mrs. Holden, Mrs. Miles, 12s. per 100.
VARIEGATED—Crystal Palace Gem, Argentea, Kentish Hero, 12s. per 100; Marshal McMahon, 20s. per 100.
SPIRÆA JAPONICA, extra strong forcing clumps, 20s. per 100.
BURGESS, KENT AND SONS, Penkhull Nurseries, Stoke-upon-Trent.

CHOICE ORCHIDS.—Many thousands of good plants to select from. Mr. WILLIAM BULL is constantly receiving large importations from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago, and can offer many of the rarest and most beautiful kinds at extremely low prices. Customers can choose their plants from eleven large houses full of Orchids. An inspection is invited.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

HEATHERSIDE NURSERIES, near Bagshot.
The large and varied stock of CONIFERS, Hardy EVERGREEN and FLOWERING SHRUBS, Pyramid FRUIT TREES, FOREST and ORNAMENTAL TREES and SHRUBS, Hardy CLEMATIS and IVIES in pots, now offered at very moderate and tempting prices. Priced CATALOGUES sent post-free on application, to
HENRY SHEPHERD, Heatherside Nurseries, Bagshot, Surrey.

To the Trade.
CARNATIONS, PICOTEES, FUCHSIAS, &c., for DISPOSAL.

GEORGE RUDD, raiser of Sunray and numerous other named Fuchsias, begs to announce for Disposal the whole of his Stock, consisting of upwards of 2000 pairs of CARNATIONS and PICOTEES, a large number of seedling and hybrid FUCHSIAS, Hybrids of various kinds, PANSIES, &c.
Undercliffe, Bradford, Yorkshire.

To the Trade.

ARALIA SIEBOLDII, very fine plants, in small 48-pots, at 6s. per dozen, or 40s. per 100.
CLEMATIS JACKMANNI, and other fine kinds, at 60s. per 100.
WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

JULES DE COCK, Nurseryman, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

Vines—Vines—Vines.

W. J. CALDWELL AND SONS beg to inform their Friends and Customers that their stock of the above is unusually fine this season. Samples have been exhibited at various Shows in the North of England, and they have been highly commended for their excellent quality.
Orders are now being booked from the following varieties:—

Black Hamburgh	Foster's Seedling
Black Alicante	Lady Downe's
Buckland Sweetwater	Madresfield Court
Duke of Buccleuch	Muscat of Alexandria.

Strong Planting Canes, 5s. to 7s. 6d. each.
Extra Fruiting Canes, 7s. 6d. to 10s. 6d. each.
The Nurseries, Knutsford, Cheshire.

FRANCIS R. KINGHORN wishes to dispose of the following SPECIMEN PLANTS at moderate prices (on application):—
CROTON WEISMANNI, 5 feet 6 inches high, by 4 feet 6 inches through. This is acknowledged to be one of the most beautiful plants of the sort in the kingdom.
COCOS WEDDELLIANA, 5 feet high by 6 feet through, fine plant.
ARECA CRINITA, 4 feet high, very handsome.
STEVENSONIA GRANDIFOLIA, 3 feet high by 4 feet 6 inches across: a thriving young plant of this noble Palm.
MARTINEZIA GRANATENSIS, 4 feet high by 5 feet through, fine plant.
Sheen Nursery, Richmond, Surrey.

NEW AND RARE LILIES.

LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. *7s. 6d.*
LILIUM COLUMBIANUM, extremely rare, *7s. 6d.*
LILIUM BATEMANÆ, quite new, *7s. 6d.*
LILIUM JAPONICUM KRAMERI, *5s.*
Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30s., 42s. and 60s. per dozen.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.



DUTCH FLOWER ROOTS.—Now ready,

our ILLUSTRATED CATALOGUE of Dutch Flower Roots, Roses, Fruit Trees, &c., containing forty-eight pages imperial size of beautifully illustrated letterpress, with new and original articles on Flower Roots and their Uses, the cultivation of Hyacinths, Tulips, &c., and a superbly finished coloured plate. This will be found the most useful, the cheapest and best Bulb Catalogue ever sent out, and should be read by all purchasers of flower roots before ordering. Price *6d.* post-free; grats to customers and intending purchasers.
DANIELS BROTHERS, The Royal Norfolk Seed Establishment, Norwich.

Annual A B C Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

GEORGE COOPER, The County Seed Establishment, Hertford, begs to announce that he has received his annual importation of FLOWERING ROOTS, and that his Illustrated and Descriptive CATALOGUE is now ready and may be had post-free on application. The best sorts in every kind from the most careful growers.
SEEDS for the Garden and Farm, for Autumn Sowing
For early forcing—Early White Roman HYACINTHS, SPIRÆA JAPONICA and PALMATA, LILY OF THE VALLEY. The best value given.

Dracænas and Tree Carnations.

HENRY JAMES has first-class Plants of the above to offer at low prices for cash with order. Dracænas, finely coloured, in the well-known decorative varieties, Cooperii, terminalis, Guilfoylei, Hibbertii, ferrea and braziliensis, at *24s* and *30s.* per dozen. Tree Carnations in the best leading kinds, including large quantities of La Belle, the best white, at *12s.* and *15s.* per dozen.
Castle Nursery, Lower Norwood, S.E.

FOR FORCING.
SPIRÆA JAPONICA, *20s.* per 100.
" PALMATA, *25s.* per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, *10s. 6d.*, *15s.*, and *20s.* per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS,
Booked for autumn, *12s.* per dozen, *75s.* per 100.
CHARLES NOBLE, Bagshot.

Special Cheap Offer.

E. HILLIER begs to offer the undermentioned, all well-grown stuff:—
ROSES, Tea and Noisette, *12s.* per dozen; Queen of Bedders, *12s.* per dozen; Maréchal Niel, *10s.* and *18s.* per dozen.
CLEMATIS, twelve best varieties, *12s.*
PRIMULAS, double white, *12s.* per dozen. *100s.* per 100.
CARNATION, La Belle, *9s.* and *12s.* per dozen.
DAPHNE INDICA RUBRA, *12s.* per dozen.
STOVE PLANTS, 12 choice for *12s.*
Package will be 2s. each dozen.
POT VINES and BEARING PEACH TREES.
Nurseries, Winchester.

To the Trade.

TUBEROUS BEGONIAS.—Fœbelii, fine plants, now coming into bloom, in 4-inch pots, per dozen, *8s.*; Hybrids, comprising every shade of colour, in very fine plants, 2½-inch and 3-inch pots, *6s.* per dozen, *40s.* per 100; in 4-inch pots, *7s. 6d.* per dozen, *50s.* per 100; in 5-inch pots, *10s.* and *12s.* per dozen, *65s.* and *75s.* per 100; all in bloom.
RODGER, MCCLELLAND AND CO., 64, Hill Street, Newry.
P.S.—We should be glad to send sample flowers to intending purchasers.

J. APERS, NURSERYMAN, Loochristy, near Ghent, Belgium, offers the following splendid stock of healthy, well-shaped, and richly-budded Plants:—
CAMELLIAS, at *£9*, *£6*, *£7*, and *£8* per 100.
CAMELLIAS, very large, at *2s.*, *3s.*, and *4s.* each.
AZALEAS, Indian, *£5*, *£6*, *£7*, and *£8* per 100.
AZALEAS, large Indian, at *2s.*, *2s. 6d.*, *3s.*, and *4s.* each.
AZALEA MOLLIS, from seed, at *£5*, *£6*, *£7*, and *£8* per 100.
AZALEAS, hardy Ghent, at *£4*, *£5*, *£6*, *£7*, and *£8* per 100. Larger, *2s.*, *3s.*, and *4s.* each.
RHODODENDRONS, at *£6*, *£7*, *£8*, and *£12* per 100. Larger, *2s.*, *4s.*, *5s.*, and *6s.* each.
The DESCRIPTIVE CATALOGUE may be had on application to
Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

To the Trade.

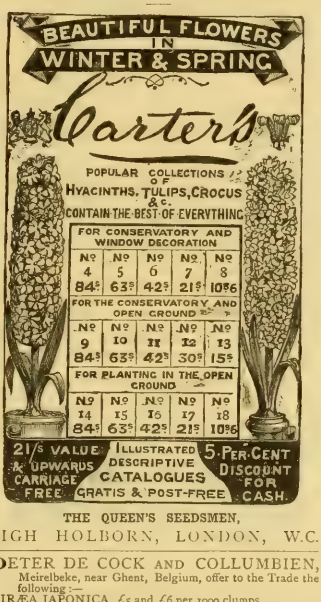
C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices:—
100 CAMELLIAS, budded, named, imbricated, at *£5*, *£6*, *£7*, and *£8*.
100 AZALEA INDICA, budded, named, nice crowns, at *£4*, *£5*, *£6*, *£8*, and *£12*.
100 AZALEA MOLLIS, budded, named, very bushy, at *£8*, *£10*, *£12*, and *£16*.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at *£4*, *£5*, *£6*, and *£8*.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, *£4*, *£5*, and *£6*.
100 BEGONIAS, bulbous, new short brilliant sorts, at *£2*.
1000 SPIRÆA JAPONICA, colossal clumps, at *£6*.
A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.
Highgate, London. N., and Barnet, Herts.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer:—
100 AZALEAS, Indian, named best sorts, with flower-buds, *£4*, *£5*, *£6*, *£8*, *£12*.
100 AZALEAS, Indian, Stocks, 18s.
100 AZALEAS, hardy Ghent, named best sorts, with flower-buds, *£4* *£5*, *£6*, *£8*, *£12* and *£40*.
100 AZALEAS, hardy, mollis (Van Houtte's), named, eighteen sorts, with flower-buds, *£8*, *£12*, *£15*, *£20*
100 AZALEAS, hardy, mollis seedlings, with flower-buds, *£8*.
100 CAMELLIAS, alba-plena, with flower-buds, *£6*, *£8*.
100 CAMELLIAS, alba-plena, without flower-buds, *£4*, *£5*, *£6*.
100 CAMELLIAS, named, best sorts, with flower-buds, *£6*, *£8*, *£12*.
100 CAMELLIAS, named, best sorts, without flower-buds, *£4*, *£5*, *£6*, *£12*.
100 CAMELLIAS, Stocks, *£1*, *£1* 10*s*.
100 LILIUM LANCIFOLIUM RUBRUM, *£2*, *£2* 10*s*.
100 LILIUM LANCIFOLIUM ALBUM, *£2*, *£2* 10*s*.
100 SPIRÆA JAPONICA, 15*s*., *£1*.
100 OTAHEITE ORANGES, *£3*, *£4*, *£5*.
100 OTAHEITE ORANGES, with fruit, *£5*, *£6*, *£7*.
100 CHIMONANTHUS FRAGRANS, 1-yr. seedlings, *£1*.
100 CHIMONANTHUS FRAGRANS, 2-yr. seedlings, *£2*.
12 CHIMONANTHUS FRAGRANS, 1-yr. cuttings, 12*s*.
LAURUS NOBILIS, the finest in Belgium.
Rhododendrons, Viburnum Tinus, Roses, Phormiums, Pæonies, Myrthus flore-plena, Ilex, Thuja aurea, Thuja semper-aurea, and Araucaria Joseph Napoleon Baumann, the finest of all.

DUTCH BULBS AT GROWERS' PRICES.



THE QUEEN'S SEEDSMEN,
HIGH HOLBORN, LONDON, W.C.

PETER DE COCK AND COLLUMBIEN, Meirelbeke, near Ghent, Belgium, offer to the Trade the following:—
SPIRÆA JAPONICA, *£5* and *£6* per 1000 clumps.
" PALMATA, *£3* per 100 clumps.
DEUTZIA GRACILIS, *£8* per 1000 clumps.
CHRISTMAS ROSES, *£7* per 1000 clumps.
AZALEA INDICA, well filled with buds, in good sorts, *£5*, *£6*, *£8*, and *£10* per 100.
CAMELLIAS, without buds, *£6* per 100.
" with three buds, small plants, *£6* per 100; with more buds, *£8* and *£10* per 100.
GREENHOUSE FERNS, twelve sorts, in small pots, at *£1* per 100, *£8* per 1000.
PALMS of every size and price.
Any good Belgian Plants for the Trade at cheap rates.

LEMOINE'S GRAND NEW DOUBLE GERANIUMS.—These are decidedly the greatest acquisitions of the season 1877. Beautiful, new and varied in colour, habit of the best singles, with enormous trusses. Continually receiving testimonials to their excellence, I can warrant them to please. Twelve varieties for *6s.*, six for *3s.*
THE BEST NEW SINGLES.—These received highest commendations from first-class Gardening Journals. Postans' ten varieties, also his three doubles, Bridal Bouquet, White Wonderful, &c.; the thirteen varieties for *6s.* Smith's four varieties for *2s.* (these are good). Dr. Denny's seven fine singles and two doubles, nine, for *4s. 6d.* New Life, White Vesuvius, and Salmon Vesuvius sent with either collection for *4s.* extra. All post-free, or in pots as preferred (nice plants). Cuttings of all the above half-price, or 100 in 100 varieties, to include choice Golden and Silver Tricolors, Bicolors, white flowers with silver foliage, &c., for *10s.*
Twelve New FUCHSIAS, in plants, for *12. 6d.*, all post-free.
Catalogues on application.
R. PANNETT, Florist, Chailey, Sussex.



BULBS.—BULBS.

H. CANNELL (F.R.H.S.)

Begs to announce that his LIST of the above is ready, and the fact of his having tested the whole family of Dutch Bulbs, and devoted two 100-feet houses last season entirely to their culture, enables him to offer the briefest, best, and cheapest List of Hyacinths and Tulips ever sent out, and the same with Bedding and Forcing kinds. These, together with his Stock (largest in England) of Winter and Spring Bedding Plants, offer unusual advantages to purchasers to attain success. Sent post-free.
HOME FOR FLOWERS, SWANLEY, KENT.

Strawberries.

FROM the fact of my being located in the midst of hundreds of acres of all the best and most profitable kinds I am enabled to offer unusually fine plants, and perfectly true to name. All those who wish to grow for gain should have the Kentish well-known varieties.
CATALOGUE with valuable information post free.
H. CANNELL, Swanley, Kent.

GOOD THINGS.

NEW COLEUS, totally distinct from all others ever yet sent out, and will add an additional charm to every Greenhouse. Their many colours are very vivid and attractive.
G. BUNYARD.
KENTISH FIRE.
LORD FALMOUTH.
Post-free, *1s.* each; the three for *2s. 6d.*

THE FINEST NEW ZONALS OF THE SEASON.—WHITE VESUVIUS, by far the best white for winter, *2s.* each, *18s.* per doz.
SALMON ditto, splendid both winter and summer, *1s. 6d.* each, *12s.* per doz.
STRIPED ditto (New Life), the most saleable all the year, always in bloom, *1s. 6d.* each, *12s.* per dozen.
DR. J. DENNY, positively blue, *2s.* each, *18s.* per dozen.
GUINEA, splendid colour, totally eclipsing Jealousy, decidedly yellow; this and Dr. Denny, grand pot plants; both summer and winter, *4s.* each.
Good plants of all the above, five for *10s.*, package free Cuttings half price, post-free.

VERONICA REPENS, the Finest New Carpet-bedding Plant of the Season, far surpassing all others of a green tint. A gem. Most dense; never exceeds an inch in height. Established plants, *5s.* per dozen. Cuttings, *2s. 6d.*, post-free.

Mignonette for Winter Blooming.

H. CANNELL is now harvesting nearly a quarter of an acre (Seed) of MILES' SPIRAL, and can therefore offer good sized packets at *2s. 6d.* each, and the same with GARAWAY'S NEW WHITE. Both varieties are far superior to the ordinary kinds, and must eventually be generally grown. (See Swanley.) Special Price to the Trade.

H. CANNELL'S named Collection of CINERARIAS now just ready for shifting into 5-inchpots. (See Guide.) Will send twelve splendid kinds for *7s.* This would add a superior feature to any conservatory throughout the spring.

The Finest Winter-blooming Plants in Cultivation.

H. CANNELL will send the best twenty-four varieties in cultivation for *18s.*, twelve for *7s.*, package free. They should be potted-up at once to give a blaze of bloom for Christmas. Cuttings at half above price, post-free.

WINTER-FLOWERING TROPÆOLUMS.—Perhaps there is nothing so cheap to purchase and to grow and to give such an abundance of flowers all the winter as the above. Six best for *3s.*; small, by post, *3s. 6d.*, free.

Zonal Pelargonium Cuttings.

H. CANNELL has an Acre of the above, and now offers fine CUTTINGS very cheap. One Hundred splendid distinct kinds for *10s.*; 25 Doubles, *5s.* *Vide* Catalogue.

Park and Other Bedding.

H. CANNELL has large quantities of all those seen in the most choice designs, supplied either as Cuttings or Plants now very cheap. CATALOGUES post-free.

H. CANNELL has now a great quantity of the following in fine condition, which will be sure to give satisfaction:—PRIMULAS, CINERARIAS, and CALCEOLARIAS, *2s.* per dozen; CYCLAMEN, *3s.*, *4s.*, and *5s.* per dozen. Splendid Bulbs showing flower. All post-free. Fine Plants of each of the above in pots, *1s.* per dozen extra.

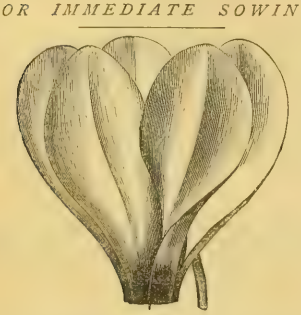
H. CANNELL, F.R.H.S.,
HOME FOR FLOWERS,
SWANLEY, KENT.

B. S. WILLIAMS'

NEW AND CHOICE

CYCLAMEN SEED

FOR IMMEDIATE SOWING.



CYCLAMEN PERSICUM, Williams' Superb Strain, per packet, 5s., 3s. 6d., 2s. 6d., and 1s. 6d.

From Mr. G. BONE, *Gardener, Hingham, January 2, 1878.*

"Sir,—The Cyclamen seed supplied by you have turned out splendid. They have been admired by all that have seen them."

CYCLAMEN PERSICUM GIGANTEUM.—The flowers of this splendid new giant variety measure from a to 2½ inches in length, colour pure white, with a fine bold violet-purple eye Per packet, 5s. and 2s. 6d.

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Now ready, post-free.

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

WM. PAUL & SON,

(Successors to the late A. Paul & Son, Established 1806,)



ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS, HERTS.

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

GEO. JACKMAN & SON,

(ESTABLISHED 1810,)



Cultivators of
FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.

WOKING NURSERY, SURREY.

RICHARD SMITH
WORCESTER

ROSES, choice Tea-Scented and Noisette, in great variety.
ROSES, Hybrid Perpetual, strong, for forcing.
ROSES, New, for 1878.
CLEMATIS JACKMANNI and many other sorts for bedding and climbing.
Bedding Plants, strong and healthy: Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.
Descriptive priced LISTS free on application.
RICHARD SMITH AND CO., Nurserymen, Worcester.

HYACINTHS, TULIPS, CROCUS,

GLADIOLI, &c.

Our Revised LIST for 1878 is now ready, and will be handed to all Gardeners and Amateurs, post-free, on application to
Messrs. MERTENS AND CO., Forwarding Agents, 5, Billiter Square, London, E.C., or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

HYACINTHS, CROCUSES, TULIPS, &c. —Every one requiring large or small quantities should send for my LIST, which is undoubtedly, for the quality and price of the varieties inserted, the cheapest in the Trade.
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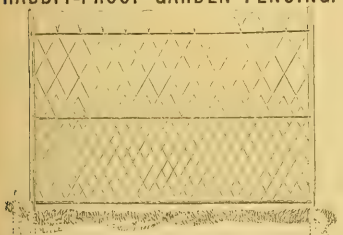
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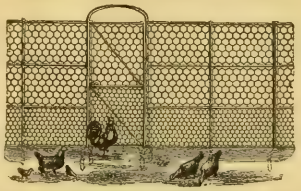
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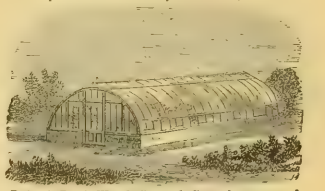
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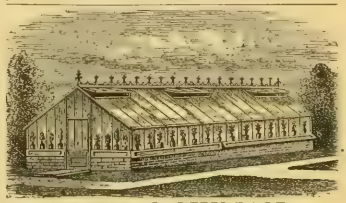
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Unlike any other manufactured Manure, this is permanent in its beneficial results.

It does not burn or exhaust the soil, which is improved in character every year.

It stimulates into healthy action, fortifying the *soil*, the *roots*, and *plants* alike.

In many instances it doubles the size and produce of the plant to which it is applied.

It enables vegetation to withstand atmospheric influences.

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It has been found to overcome the Potato, Vine and Cucumber diseases.

The Manure can be sown with the most delicate seed or plant without injury.

It increases and beautifies the foliage and bloom to an exceptional degree.

It does not deteriorate by exposure to the atmosphere, nor by lapse of time.

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"*Camellias, Azaleas, Cinerarias, Primulas, Fuchsias, Petunias, Begonias*, &c., potted in your Manure have all given the same satisfactory results, by *increasing the size of the flowers and brightness of colour, and causing the plants to bloom more freely*. The blooms of *Stephanotis* appear to be nearly perpetual."

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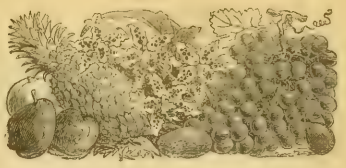
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SATURDAY, SEPTEMBER 14, 1878.

GOODWOOD.

ONE-HALF the glory of Goodwood and all its fame have been created by the Dukes of Richmond. The hill was there, bare and smooth, like the South Downs generally, before that noble family made it their residence. The genius of the third Duke clothed it with its ornament of wood and shrubbery. An eminent but fantastic writer has declared there is soul in Nature, that the very leaves are sensible to fears, and loves, and hopes: if this be so, one can imagine the park-timber at Goodwood assuming its position at the order of the third Duke. "Cedars, Beeches, Limes, and so on," cried the Duke—"I have got a house upon the downs, now let me have a park." And the trees, stepping smartly to their places, formed for his Grace a park which cannot be surpassed.

Love is the source of the most enduring work in Art and Nature. From the front of Goodwood you may see how much the ducal residence is indebted to the trees. Acres and acres of woods were required for shelter only, to begin with, and how kindly they behaved in placing themselves just where they ought to be! They stand upon the high ground, along the brow of the hill, with the park meeting them in waving lines of greensward. There is a wood in full view on the left; it is hollow, and contains the kitchen gardens; there are woods and clumps and beltings right and left, far and near, with long reaches and glades of park around and through them.

All these trees in their earliest youth formed an attachment for the third Duke, and resolved to adorn his residence, whereas in some parks you may observe the trees growing all higgledy-piggledy, and planting themselves in such positions as to spoil the view. When trees dislike a landlord they obstruct sometimes the outlook from his windows. The Beeches so loved Sylva Evelyn that they formed themselves into woods of rare beauty around his residence; some fanatical and spiteful Fir trees have since spoilt Wotton by means of a plantation before the windows. It is delightful to observe the loving care of the trees at Goodwood in placing themselves before the house, singly or in clumps, so as to preserve the landscape and not conceal the silver streak of sea beyond. Like the English army at Agincourt, these trees, standing in a somewhat critical position, are enough in number but not too many. And they are the noblest of their kind. A stately Lime, one of the grandest specimens of that beautiful and bee-beloved tree, has taken his stand in the park, close to the garden fence before the windows. He relies, no doubt, on his true love and fidelity, and on his pyramidal grandeur. May his affection be returned for centuries to come by the same noble family whose dwelling he has for fifty years adorned.

The top of this tall Lime looks far out to sea. He would hardly have flourished there but for the shelter of those benevolent and skilful beltings which guard the park. There is a good deal of wind on the South Downs generally. An experienced medical man used to say that he once met five haystacks and two barns, in a single journey, coming up from the south-west. But for the woods the Grand Stand at Goodwood might be overturned any day, and no

unsheltered garden would produce exotics. "Let the wind blow from what quarter it may, we know nothing of it here," says Mr. Rutland, speaking from the kitchen garden, and in this year of defective fruit crops he reported, in the columns of the *Gardeners' Chronicle*, a good crop of wall-fruit. There are more than 6 acres of kitchen garden within the walls, but high walls alone will not exclude high winds from that space of ground on the south slope of the Sussex Downs. The complete shelter at Goodwood is due to its beltings, and its beltings are magnificent. With the sea within five miles, the best wind-defier is the evergreen Oak or Quercus Ilex. I have never seen such fences and such defences as are formed here by the Ilex. The outworks are of Ilex, the inner fortifications of the same, and the citadel is secured by walls of Ilex 70 feet high. Against these combined defences the wind dashes itself in vain. Elsewhere it pours over the smooth hill and shaves the trees on the south-west side, at twenty miles from the shore; here it is first checked and then subdued. The Cedars and Turkey Oaks in the park are as safe and snug as on the banks of the Thames at Fulham. The Beeches might be at Blenheim, they are so entirely at home; and a Eucalyptus, 30 feet high, in the pleasure-grounds behind the house, is as happy as you may see that tree in the Channel Islands.

The house stands below the ridge of the hill, where the park begins to slope gently towards the arable fields to the south.

It stands in a park of 1700 acres, which include the race-course behind the woods at the rear, and the adjoining base round Beacon Hill —one of the highest points in Sussex, called the Trundle, and sometimes called in books Roch's or St. Roche's Hill. Travellers passing by the South-Coast Railway may see the woods of Goodwood on the high ground, and the masses of timber, with glimpses of green park. A more fortunate traveller mounted lately by the side of a most genial companion, saw Goodwood in more detail. We started from a house, without the park, well covered with creepers and planted with evergreens, including that bright-leaved one, the Escallonia macrantha. It is a bachelor's abode, and Liberty Hall might be its name, for the traveller, though a stranger, was told to call at any time for refreshment—the owner absent or at home—whenever he might pass that way. First we entered Halnaker Park, now joined to Goodwood, once the domain of the ancient families of Poynings and of West, next of the Mostyns and their heiress, the Countess of Derby; and then of her cousin, Sir Thomas Dyke Acland, who sold it to the Duke of Richmond in 1765. Halnaker House is in ruins, and its walls are clad, not in the rags that would seem befitting to the ruined state, but in the best suit of Ivy I have seen. Wealth alone could have produced such Ivy, and that same wealth of a fertile soil has produced scores of great Chestnuts in the park, with boles running up to a great height, and measuring 18 feet and upwards round the trunks at 4 feet from the ground.

In the outer court of the ruined mansion is a most productive orchard full of good old and new sorts of young Apple trees, bearing even this year an abundant crop of Apples, which are now swelling after the rains, and waiting for September sun to put colour in their cheeks.

In the inner court the gardener's care marks the ancient state and hospitality of the great house. Above the fireplace, where the ox was roasted at Christmas, the huge chimney yawns, much dilapidated. 'Tis ill when the grass grows in the Lord Mayor's kitchen, but here, in Lady Derby's kitchen, erst the Lord Delawarr's, Mr. Rutland has planted the floor with Filberts. Tell it not in Lancashire or at Buckhurst Park, but the floor of the great hall is planted too with Nuts; a Willow grows within the chapel walls, and a quantity of young evergreen Oaks—useful stuff for planting out—fills one of the open courts. To pile up these contrasts of past and present one storey higher, the floor of one of the best bedrooms, which has not yet tumbled in, was this year in Potatos!

We clambered up: haulm strews the floor now instead of Rushes, the Potatos have been dug up, and all the noble ladies who, in the olden time, found slumber here, have been dug in long since. *Sic transit!* The view, looking from the mullioned windows southward across the park, must always have been lovely, but it is better now perhaps with the Chestnuts and Scotch cattle, than in the time of Lord Delawarr, who perhaps planted the Chestnuts, and who built the house in Henry the Eighth's reign and soon after flitted by royal hint to Wherwell, in Hampshire. After the dissolution of the Priory of Boxgrove, Queen Elizabeth granted the lands, including Halnaker, to Sir John Morley. The Chestnuts look like trees between 300 and 400 years old.

Moving onwards, we turned towards the hill. Some extensive marks and scorings on the grass, close to the ruins, indicate the site of former pleasure grounds of some kind, and there is an amphitheatre with benches, including a small circular space which was probably devoted by my Lord D. to some classic entertainment, such as cock-fighting. Above we entered the "Gallop," an accessory to an existing and far nobler sport. It is a measured stretch of mown turf for the trial of racehorses. We passed along it, and along the crown of the hill, through a wide glade among the woods. There is a change in the soil here—we are nearer the chalk; the feeding grasses of Halnaker Park do not cover this thin surface, and the soft elastic turf of the "Gallop" consists almost entirely of a carpet of Helianthemums drawn over the rock.

Delightful views open as we climb the hill, till at the ridge we reach the very button on the cap of this fair domain. The sea is on the one side, and on the other are Charlton Forest and several neighbouring forests, filled from time immemorial with the Beech trees which afforded the third Duke a suggestive hint of the best kind of tree for his purpose.

To see the paradise of Goodwood you should climb the hill from Halnaker Park, and, pausing at the points of vantage below the ridge, you will observe the combes hollowed transversely across the park. There are several of these. One cuts deep into the hill a little to the west of the house, the Birdless Wood standing on its edge; on the east side of the house there is another, in which is the cradle of the present Duke's family—Molecomb, which he occupied for some years, and where his brother-in-law, the Prince of Saxe-Weimar, now resides. I fancy that a certain gentleman, whose name may not be mentioned, who has visited the Sussex Downs sometimes, and especially the Devil's Dyke, finds Goodwood too near heaven for his taste, and keeps away.

At the end of the "Gallop" we turned along the ridge to the lodge-gate at Pilly Green, a noted meet for hounds; thence along the ridge, with woods on either hand, to Countess Gate, and further on to the racecourse and the Grand Stand, where we turned through the woods to the left towards Goodwood House. Before reahcing it we stopped at the pheasantry and inspected the cockatoos and the gold and silver pheasants with their exquisite plumage and less delightful voices. They have the run of a former chalk pit, which is now a pleasant lawn and shrubbery, running deep into the side of the hill. Cairney Seat, hard by, is a fit memorial to an old servant of the family, and here all persons wishing to pic-nic in a park that is always freely opend to the public can find shelter in a handsome apartment commanding a view of the Isle of Wight and a wide landscape. They can here make "a feast of the landscape," and they can order hot water of the attendant at the cottage, and partake of the tea which, with its occasional concomitants, by no means spoils a landscape, but makes it better. That handsome creeper, the Bignonia radicans —which is not uncommon here—blooms on the cottage wall at Cairney Seat. *H. E.*

(To be continued.)

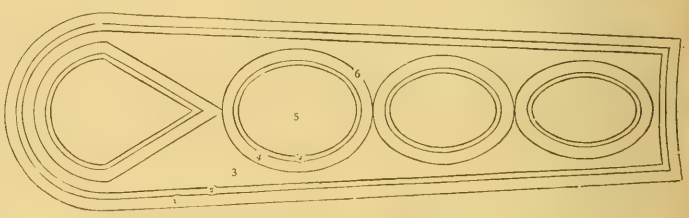


FIG. 59.—PLAN OF A CARPET BED IN BATTERSEA PARK. (SEE P. 333.)

New Garden Plants.

EULOPHIA SCRIPTA, *Lindl.*

This plant, whose flowers are "speciosi" according to Dr. Lindley (*G. and Sp. Orch.*, 182), has columnar pseudobulbs, with narrow leaves, and panicles of Grammatophylloid flowers, greenish yellow with brown blotches. If I remember rightly it has been stated by Mr. Spencer Le Marchant Moore to have two kinds of flowers. I have only once in my life seen fresh flowers, which I obtained from Mr. Wilson Saunders, grown by Mr. Green. It has also flowered once at La Calle, near St. Cloud, grown by M. Luddemann at M. Pescatore's. M. Léon Humblot has just introduced a small stock of this rare Madagascar plant, which may be valued by many orchidists. *H. G. Rchb. f.*

LÆLIA DOMINYANA, *n. hybr.**

All the staff of the Veitchian nursery was in great excitement lately about "the seedling." The seedling had flowered. "The seedling!" you say, wondering, since there are thousands and thousands of seedlings at the Royal Exotic nursery. You are right; but the seedling *καὶ ἔξοχην* was understood by a kind of universal suffrage to be Mr. Dominy's seedling, a cross between Cattleya Dowiana and some Lælia, probably elegans. There were three beautiful buds, and one expanded on Sunday, August 11, just at 12 o'clock, to the ecstacy of those present. The plant has the habit of a Venezuelan Cattleya Mossiæ, but the leaves are longer and remind one of Lælia elegans. The sepals are light purple, with dark reticulations which remind one of the just named species. The petals and lip are nearly those of Cattleya Dowiana even as to the diameter. The lip has nothing of the yellow of that species, but its deep blackish-purple makes a wonderful impression. The pollinia are exactly like those of Lælia elegans. The wishes of Messrs. Harry and Arthur Veitch coincided in the dedication of this beauty to Mr. Dominy, whose merits are too well known to require me to speak more of them. The plant received the most distinguished of

* *Lælia Dominyana*, n. hybr.—Pseudobulbis fusiformibus abbreviatis monophyllis; folio ligulato oblongo; spatha conspicua; racemo trifloro; sepalis ligulatis acutis; tepalis cuneato oblongis acutis; labello amplissimo obtusangulo quadrilobo; lobis lateralibus medianis obtusis brevioribus; omnibus crispulis; columna trigona; sepala et tepala lilacina; labellum obscurissime atropurpureum maximum.—Hybrida ex Cattleya Dowiana et forte Lælia elegans.—*H. G. Rchb. f.*

London and suburban Orchid-loving visitors at its domicile, and then crossed the Channel for Versailles, and now two of the flowers lie before one very distinctly, showing the fatigues of travelling and of being exhibited. *H. G. Rchb. f.*

Grammatophyllum Ellisii, Lindl. in Hook. *Bot. Mag*, 1860, 5179; Van Houtte, *Flore des Serres*, xiv., 1488-89 (*eadem icon*).

Hitherto this plant has been regarded as one of the rarest of all Orchids. I saw good plants with Messrs. Day and Veitch, who were very proud of their possession, and had two or three inflorescences sent fresh. I also know of its being with M. Lüddemann at Paris in a single specimen. It is quite an original plant. The fusiform pseudobulbs of a span's length are square, and bear several broad, ligulate, blunt, glaucous leaves. The inflorescence is very graceful, bent over, provided with large deciduous yellowish bracts. The flowers are pretty, as large as those of Lycaste aromatica, very numerous; sepals yellow, with numerous transverse brown stripes and bars; petals and lip whitish, with purplish broad lines on the anterior part of it.

BATTERSEA PARK.

We have so often alluded to the characteristic features of this fine park, which year by year improves in appearance as the trees and shrubs increase in size, that we do not intend on this occasion to say more than a few words with reference to the bedding-out. At Battersea this has always been of a high order of merit, and equally so has been the display of the season now drawing to a close, notwithstanding the drawbacks and difficulties that had to be contended against in the earlier part of the season. The subtropical garden, we are glad to note, has been very greatly improved by the introduction of a neat, low wire fence, in the place of the ordinary iron hurdles, which, however ornamental they may be in a park proper, are entirely out of place in a flower garden or dressed pleasure-grounds. The tropical and subtropical plants are all as gracefully disposed as heretofore, and remarkably effective, while the carpet-bedding has been carried out with an originality of design and effectiveness of execution that is really surprising when we consider what a difficult thing it must be to get new designs that, when worked out, will look as well upon the ground as most of them do upon paper. The circular beds have all been very "telling," and especially three of them, of which Mr. Rogers has been kind enough to furnish us with the ground plans. The first of these (fig. 60 B), though somewhat elaborate, looked exceedingly well on a large bed, and was planted as follows:—1, Golden Feather Pyrethrum; 2, Alternanthera amœna; 3, Alternanthera paronychioides major; 4, Mentha Pulegium gibraltaricum; 5, Alternanthera versicolor grandis, and six lines of Leucophyton Brownii. Fig. 60 A is a more simple design, but a very pleasing one as here planted, with—1, Alternanthera amœna; 2, Veronica repens; 3, Leucophyton Brownii; 4, Alternanthera paronychioides major, and five lines of Golden Feather Pyrethrum. Fig. 60 C is a smaller bed than the others, but equally chaste and pleasing with them. It is planted with—1, Leucophyton Brownii; 2, Alternanthera amœna; 3, Pachyphyton bracteosum carpeted with Sedum hispanicum (glaucum); and 4, Cacalia tomentosa, also carpeted with Sedum hispanicum Our next design (fig. 59) is taken from a bed, one of a pair with a circle between them, to be seen on the left-hand side of the path leading to Alpine Point, and which has a particularly soft and pleasing effect. It is planted with—1, Alternanthera amœna; 2, Golden Feather Pyrethrum; 3, Mentha Pulegium gibraltaricum; 4, Sedum hispanicum; 5, Alternanthera paronychioides major; and 6, lines of ovals, Kleinia repens. Returning to the subtropical garden, we note the removal of the deep Ivy edgings to the two well-known scrolls, which had overgrown their intended dimensions. They are somewhat awkward beds to plant to an elaborate design, but Mr. Roger succeeded admirably with the pattern shown in fig. 60 D, which was worked out with—1, Mentha Pulegium gibraltaricum; 2, Alternanthera amabilis latifolia; 3, Golden Feather; 4, Alternanthera versicolor grandis; 5, Alternanthera magnifica; 6, Cerastium tomentosum; 7, Alternanthera paronychioides major; and 8, circles of Mentha Pulegium gibraltaricum studded with Aralias and Grevilleas.

The Fern and Palm glens, such conspicuous objects on either side of the path leading to the Peninsula, are more beautiful than ever. The former is lighter and more effective than we remember to have seen it, and includes among other admirable plants a handsome specimen of Pritchardia grandis. The Palm Glen has been extended for some length since last year, and with excellent effect, the view now being particularly rich and effective. The two oblong beds on the left-hand side of the path through the Peninsula have a very quaint appearance, being planted, the one with a Japanese, the other with a Chinese pattern; and the two large circles are exceedingly fine, being dotted with Yuccas and Aloes, and other succulents, and carpeted with Mentha Pulegium gibraltaricum and Herniaria glabra, a useful carpeting plant, much in the style of Arenaria balearica. Alpine Point has probably never been better clothed than it has this season, and has further been rendered more realistic by the removal of such of the coniferous subjects as



Fig. 60.—Plans of carpet beds in Battersea Park.

Till now the known specimens numbered scarcely half-a-dozen, so that the plant is practically but little known in the horticultural world. Now, however, the opportunity of trial is given—Mons. Léon Humblot, the friend of M. Rompler, of Nancy, has just succeeded in introducing a fine lot of this remarkable plant, that has braved the extreme heat of the Red Sea with great success. The plant is very local in Madagascar; hence it may be understood why it has lurked so long time unknown—unknown even to the best elder French travellers. The Rev. Ed. Ellis discovered it probably by a mere accident, as is often the case, finding it on a branch stretching over a river. Mons. Humblot hunted with his servants a long time for the plant. Each was got by cutting down the tree on which it sat enthroned, usually quite alone.

It grows in light places, on the oldest trees only, sheltered above by branches, but submitted to rich side-light. For two-thirds of the year it has to be kept at rest. It is specially remarkable by its odd bulbs and nice bluish leaves. The development of the beautiful inflorescence is very rapid. From the experience of Mons. Léon Humblot, this and the Ouvirandra fenestralis prove to be very long-lived Madagascar plants. *H. G. Rchb. f.*

had overgrown their bounds. A new carpeting plant introduced here with great success is Leptinella scariosa, a close-growing Milfoil-leaved plant.

Amongst the subtropical plants we note but little that is absolutely new, but may remark that amongst the Cannas, C. Rendatleri, with large dark green leaves and fine bold flowers; C. peruviana, one of the oldest, with orange-scarlet flowers; C. Annei grandiflora, a noble-foliaged plant, with very bold yellow flowers; C. Van Houttei, a light bronzy-leaved form; and Adrienne Robini, a fine stately-habited plant, with foliage of a warm, bronzy tint, are amongst the best. Most striking amongst the large beds is one of the noble-flowered Brugmansia Knightii; and Polygonum sachalinense, a splendid plant of tropical appearance, has a grand effect in single clumps. A very fine grass, either for dotting on lawns or planting thinly in a bed of fine-foliaged plants, is Gymnothryx latifolia. Epilobium hirsutum variegatum is used with great effect here, immediately in front of clumps of shrubs which show up its almost silvery white leaves to great advantage. It grows about 3 feet high. Mr. Rogers has more than maintained his well-tried reputation, and this even remembering that he succeeded John Gibson.

NOTES FROM SLOUGH.

DAHLIAS.—This is not the best month in the year to visit any of the nurseries; but I was very anxious to see the Dahlias—I knew they would beat their best, and there is much to be learned by inspecting minutely the autumn flowering Roses. There is no other collection of Dahlias worthy of the name within easy distance of London. Indeed, no encouragement is given to Dahlia growers to do the best they can with their flowers to bring them up to the exhibition standard, as no shows are held in London. What the metropolis lacks in this respect however is amply atoned for by the excellent displays of this flower held in most of the provincial centres. The Dahlia is a noble flower, and when well set up as cut flowers on suitable stands is indispensable for furnishing the stages at autumn exhibitions. Whether there is a chance for Mr. Turner to show at exhibitions or not, it answers his purpose to devote a very large portion of his home nursery to the culture of the Dahlia, and it is needless to say that the plants are healthy and well furnished with grand flowers. In my early gardening days I had much to do with growing Dahlias for exhibition, and what struck me most was, not so much the improvement in the size and "build" of the flowers individually as in the habit of the plants. Twenty years ago many varieties let out at high prices, would grow from 6 feet high; and some of them in rich soil would go nearer 7 feet. Amongst those sent out by Mr. Turner this season, and the new ones not yet in commerce, none are over 3 feet, many are under that. This desirable feature has not been gained at the expense of the flowers; the improvement in these has been gradual and uniform. Persons who attend the floral committees at South Kensington have been heard to say that certain new flowers are no improvement on others of the same colour; but if they should be as good while cut from a plant 1 foot less tall than the other that alone would be a sufficient reason for sending it out; but I believe this is not acted on, for growers like Mr. Turner value their reputation too much to venture upon sending out a flower that is no advance upon others of the same colour, or that has not some novel feature to recommend it. Another desirable feature in the Dahlia is its constancy, and you cannot tell whether a Dahlia is constant by seeing its flowers at an exhibition simply; it may be that not more than one flower in six is fit for a stand, and there are others that will seldom produce a bad one. There are a large number of seedlings now in flower from which a selection will doubtless be made to send out next year. Of these the following are of undoubted merit:—

Prince Bismarck, a very large flower, perfect in form, with high centre; it may be a seedling from Ovid, as it inherits its constancy, as I could not find a bad flower, and the centre is full when the outer petals have dropped off. The colour is maroon-purple, with darker centre.

Helen McGregor is also a fine flower of the largest size; it is quite distinct, pinkish lilac, shaded to the outer edges of the petals with purple.

Robin Adair may be described as of a reddish buff or chestnut colour, it has all the other qualities that constitute a good Dahlia.

Queen of Italy is a very distinct flower, good in all its parts; I also noted it as reddish buff, but it is quite distinct in colour from Robin Adair.

Joseph Ashby is a flower that can be well recommended for its constancy; it has a high centre, and is large in size, colour orange-red suffused with gold.

Amy Robsart is one of those pleasing colours, light lilac, clear and bright. The flowers are large and well shaped, and the plant dwarf—about 2½ feet.

George Thompson is a very dwarf variety—2 feet. It cannot be recommended as a show flower but will come in as a bedder; the flowers are large, of a primrose shade, and very freely produced. The above are not yet sent out.

Of the new ones sent out in the spring of the present year Charles Lidgard is one of the best; the petals are well formed, of a rich gold, with crimson or scarlet edge.

Lady Golightly, blush, with lilac edge, a most charming flower, will be as much prized in the garden as it is for exhibition.

Rifleman, fine scarlet, with darker centre.

Louisa Neate, a very fine flower, perfect shape, of the blush or pale lilac type.

William Dorkings is one of the yellow flowers edged with scarlet, and is of full size, good shape, and constant.

The Countess, lilac, shaded to purple at the edge.

Constancy is a large yellow flower, shaded to buff.

Charles Wyatt is a new fancy sent out this year; if it can be caught it is a good flower, light purple with darker stripes, but it is inconstant, and as a self it will not stand A 1. I have no notes of new fancies.

ROSES.—Passing from the Dahlias to the Roses, it may be as well to say that I did not expect to see much in this department. Mr. Turner has an immense stock, and he is able, by taking in new ground annually, to keep them up to a high standard. In order to grow the Rose to the high state of perfection that it has now been brought to by exhibitors it is quite necessary to change the soil. What I most feared was that mildew would have checked the development of flowers here, as it has done at most places, including our own collection at Loxford; however, I found the Roses at Slough were more free from this parasite than any I have seen this autumn. I must have sorely tried the patience of Mr. Turner as we plodded through the beds and quarters, carefully noting the flowers best adapted for a trying season like this.

The new sort, Harrison Weir, I did not see, for the sufficient reason that it is all being cut up for propagating. This is a grand Rose, with many points of excellence. The colours of the Roses are different in the autumn from what they are in the summer. The shorter days and lack of sunshine seem to intensify the colours. The following sorts are hybrid perpetuals, and are selected as the best, not because they are of recent introduction:—

Penelope Mayo, a finely formed flower, reddish crimson, large.

Star of Waltham was good, but I have not seen this flower so fine as it was shown by Mr. W. Paul before it was sent out. I noted one flower here very fine, the colour carmine-red.

Prince Arthur, one of the best crimson Roses.

Princess Beatrice was flowering fairly well. This should be noted as a fine pot Rose.

Mrs. Baker is of the Victor Verdier type, and the colour in autumn is almost crimson.

Marguerite de St. Amand, deep pink; very bright.

La France. This is noted as the best light Rose either on the Manetti or as a standard.

Captain Christy, salmon-rose; very fine.

Fisher Holmes, a fine dark scarlet Rose.

Duke of Wellington should be grown for its vivid crimson colour.

Comtesse de Suresnes was very pretty in the bud; the colour is blush.

Countess of Oxford is certainly a most desirable autumnal, distinct in colour, which is carmine-red, with a dash of purple.

Auguste Rigotard, rosy crimson; the growths very clean.

Mdlle. Annie Wood, rich rosy crimson; a fine full flower.

Boule de Neige is a small very pretty white Rose, clean in the wood, and free from mildew; the best to work into wreaths.

Jean Liabaud, very dark crimson; a healthy grower.

Baroness Rothschild was standing bravely; Alfred Colomb, one of the very best. Madame Victor Verdier and Vicomte Vigier maintain their reputation as good and distinct Roses.

Xavier Olibo, a fine dark Rose.

Amongst the Teas as a standard Gloire de Dijon stands highest in the list; the plants were flowering as freely as in summer.

Catherine Mermet, light rose or flesh-coloured, is a grand Tea Rose of free growth; Le Nankin, saffron, like Madame Falcot, fine in the bud.

Madame de St. Joseph, a fine free-growing Tea Rose of a rosy buff colour.

President, a fine old Rose; Madame Falcot, Madame Margottin, Perle des Jardins, a fine clean yellow Madame Jules Margottin, Belle Lyonnaise, Marie Van Houtte and Niphetos, are indispensable amongst Teas.

Mr. Turner has a small stock of a very old Tea Rose, Magnolia, that had been lost to cultivators. It is not more than semi-double when open, but beautiful in the bud: the flowers are pale yellow or sulphur.

BOUVARDIAS, &C.—Bouvardias are exceedingly well-grown at Slough, and a long span-roofed house is devoted to their culture. The sorts grown in the largest numbers are of the B. Hogarth type, comprising B. Vreelandi, white or blush; and a variety similar, B. intermedia, flesh colour. B. longiflora flammea is a flesh coloured sort, of the old pure white form; B. Humboldtii corymbiflora may be noted as the variety with the largest flowers, which almost rival the Stephanotis, and are pure white. B. Oriflamme. One of the very best and most useful pure white sorts for bouquets is B. candidissima.

Enough has been said of Carnations and Picotees for the present. There is an immense stock of plants, sufficient surely to set up hundreds of amateurs. The Auriculas, too, are extremely interesting in their varied foliage, some of it with a rich coating of farinaceous powder which makes the leaves as white as snow. There are not nearly so many autumn trusses as we have had in our own garden, and the plants look well for a fine bloom next year.

Jefferson, grown in Mr. Turner's nursery, Slough, is an excellent early dessert Apple; it succeeds the Irish Peach, but is superior to it, and is well deserving of cultivation. *J. D.*

THE FENHAM NURSERY, NEWCASTLE-ON-TYNE.

NEWCASTLE-ON-TYNE and its neighbourhood have had famous nursery grounds in times past: that was before the mighty material forces—the development and application of which have done so much to extend the communities in the North, and build up villages into small towns—had so changed the face of Nature. But before the growth of populations and the extension of great manufacturing works, nurseries have declined. Atmospheric conditions made it difficult to cultivate, the cost of production was enhanced, and gradually a decline set in. Gateshead and Newcastle have been the home of good nurseries; the name of Falla, among others more or less worthy, is still gratefully remembered; and who knows but that, in the future, successors to these men may spring up armed with a knowledge that shall subdue the antagonistic forces of the atmosphere, and restore something of the fame that belonged to Northumberland and Durham nurseries in the past.

A few years ago Mr. W. J. Watson, seedsman, of Town Hall Buildings, a gentleman whom ill-health and a great liking for open-air pursuits had changed from a solicitor to a seedsman, took on lease the old kitchen garden and a portion of the grounds of Fenham Hall, on the north-east of Newcastle-on-Tyne, for the purpose of growing certain plants that were found to be in special demand, and which it was difficult to obtain elsewhere. The garden, or rather the nursery, occupies a warm sunny slope, sheltered by trees and hillsides on the coldest part, and to a great extent screened by the rising ground from Newcastle smoke on that side. The place is some two and a-half miles from Newcastle, but easily accessible. The old vineries, plant-houses, and walls were retained, and on the lower ground were planted, for the purposes of shelter, a series of Beech hedges in parallelograms, which are of great value in warding off the furious winds that occasionally come sweeping along the valley. The leaves hang on for a considerable time, and while securing shelter and warmth allow of a sufficient passage of air. Some time hence these nurseries will acquire considerable repute in all probability; at present they serve to illustrate the various plants in demand in the district, for Newcastle and Gateshead love and largely use plants, flowers, and fruit. The soil is a good black loam resting on rock.

The plantations of common Elder cannot fail to strike the visitor; it is a subject in great demand to plant in various places where a quick growth and hardihood are necessary. The plants are sold when three years old, after being twice transplanted. The Elder is largely grown at Fenham, the demand coming up to from 15,000 to 20,000 plants in the year.

The Elder is propagated by cuttings in February, made about a foot in length, planted in lines in nursery fashion, and almost buried in the soil. The oval-leaved Privet is also in large demand, and any quantity of it can be sold, as it stands so well about the northern towns. Mr. Watson states there is something akin to a rage for this Privet, and he finds no difficulty in disposing of from 18,000 to 20,000 plants annually. Retinospora pisifera aurea is a favourite plant, also finding a large sale for hotel halls and corridors, as well as for sitting rooms in houses. If looked after, it stands well in good condition from October till February. Poplars are largely grown at Fenham, to meet the demands for planting. The Ontario, Lombardy, Black Italian, and the Abele, which stands as well as the Ontario, are in great demand, and the difficulty appears to be to get them into anything like size, so much are they sought for. All the race of Thorns do well in the North, making a strong growth, and blooming freely at the proper time. The Bay Laurel also does well, and is wanted in large quantities.

The best deciduous trees for the Newcastle district, next to the Poplars, are the Sycamore and Elm ; these are, in fact, the most popular trees among the residents. Mr. Watson has a fine lot of these, specimens 14 feet in height being in great demand, especially in Sunderland and along the coast line. Sycamores and Elms are also well grown, averaging 12 feet in height. Rhododendrons find a large sale here, so well are they suited for the outskirts of manufacturing towns.

Of coniferous plants Picea Nordmanniana is the best for the neighbourhood ; it is the only one found to grow in the smoky atmosphere of the towns. Other good shrubs for the neighbourhood are Aucuba japonica, Rhododendron ponticum, and Hollies, but especially the variety known as Sheppard's, which is a rare grower and very robust ; also what is known as Fraser's Laurel. A very large quantity of Euonymus latifolius strikes the eye of the visitor, and it is stated that it is in great demand in Newcastle, Gateshead, &c., for exterior window-boxes, growing freely and standing well.

Ribes and Weigelas grow well in the soil of the district, and they are in large demand as flowering shrubs. The double Whin, or Furze, is quite a feature in these nurseries, and Mr. Watson grows it by the thousand in pots ; it is a favourite plant because it stands so well at the seaside and in the midst of smoke. Mr. Watson states that he has planted a lot of this Furze in the middle of Gateshead, and that the plants are doing well. The plants should be well established in pots before planting out. There are some huge bushes of it in the old Hall gardens, from which large supplies of cuttings are drawn, and when the plants are in full bloom the rich golden radiance of their blossoms is very striking.

There is of course a general collection of fruit trees, but among these the Gooseberry plays an important part. They are in great demand among the pitmen, especially such sorts as the Aston or Red Warrington, Crown Bob, Gretna Green, &c. Many of the pitmen have gardens to their houses in the pit-villages, provided by the masters, and Gooseberry growing is a favourite pursuit.

Hardy Heaths are a great feature at the Fenham Nursery, where there is a collection of about twenty varieties. They are found to stand well in town gardens ; and so do Sedums and Saxifrages on rockwork ; and of these there is also a good collection.

Roses are found to be doing well, but the majority of the plants grown are dwarfs on the Manetti stocks. So great a favourite is Gloire de Dijon in this district that out of some 8000 dwarfs sold annually, 2000 at least are this fine Tea Rose. Of standard Roses the demand does not get beyond 200 to 300, the dwarfs being so preferable as garden Roses.

On the old walls are a fine collection of Ivies and other plants. One of the very best for the north is the Caen Wood variety of Hedera digitata or palmata. What is grown here under the name of H. paniculata is an excellent variety for exposed places, as it adheres so well and closely to the wall : the roughest winds fail to detach the shoots. Here, too, was a fine plant of Garrya elliptica, which does well without protection, and does not mind the smoke.

In an open border are many fine spring-flowering bulbs and choice hardy plants, which, supplying subjects at all seasons of the year, is never without something of interest. In the spring-time the charming Scilla bifolia rosea is extremely pretty in large clumps. All the best hardy plants are well cared for : the tide is rising strongly in their favour in the North ; Polyanthuses, Primroses, &c., find great favour with the people.

In the houses is a general assortment of plants, with many things grown for supplying cut flowers, especially in winter and spring. Dracænas, Palms, Ferns, Ficus elastica, &c., are in demand for table decorations, for communities deprived by reason of the vitiated atmosphere from enjoying plants in the open air embellish their houses with them, so that some portion at least of the beauty found in leaf and flower may be feasted on.

The new decorative Pelargoniums find great favour among the Newcastle folk—such varieties as Digby Grand, Bridal Bouquet, Queen Victoria, Prince of Wales, &c., being eagerly sought for. The spring Hyacinths, Primulas, Spiræas, Cyclamens, Tulips, and all other gay-flowering plants find a ready sale ; and these are succeeded by Pelargoniums, Fuchsias, and the usual summer-flowering decorative plants.

Bedding plants are also in great demand, especially Pyrethrums, Lobelias, and those that stand well. As they have to be produced in great numbers and sold at a cheap rate, Mr. Watson pricks the plants off from the seed pans into shallow wooden boxes 20 inches by 11 inches, and they take about two dozen plants each. This is a great saving of time and labour, while the plants are found to do as well as when potted.

Such are a few of the leading features of the Fenham Nursery. It is at all times well worthy a visit, and visitors will find much to interest them. *R. D.*

MESSRS. KELWAY'S GLADIOLI.

LANGPORT, SOMERSETSHIRE.

MR. KELWAY'S name has been long associated with this flower, and few, if any, have done so much to improve it, or have been so fortunate in raising so many fine kinds, remarkable alike for their diversity in colour, as also for their substance, breadth of petal, and general habit, points which Mr. Kelway has persistently maintained were essential collectively to constitute a good Gladiolus. A few particulars of the extent to which this flower is grown at Langport, with the general details followed in the cultivation, may be interesting. On seeing the place during the growing season the immense quantity grown is the first thing that impresses the visitor, some eight acres being at present devoted to the young and old stock, and the quantity cultivated is ever on the increase. The seeds are sown in the open ground, some broadcast and some in drills, about the first week in April ; so managed the bulbs the first season are very much smaller than where only a comparatively few are cultivated, and the seeds are sown under glass in the winter, to be afterwards planted out as the season advances ; but, where seedlings are raised to something like the extent of half a million a year, to sow under glass is out of the question.

The first-year seedlings are the first to ripen their foliage, and are the first taken up, at which time they will average about the size of Peas. The character of the soil here is such as to necessitate that the whole of that in which the first year seedlings are grown, for a few inches of the surface should be run through a very fine sieve, so as to separate them from it, and secure all. The time occupied here, as I understood, from the saving of the seed to the plant attaining the full strength necessary to exemplify its real character, is from three to four years ; those that at the first flowering give promise of being sufficiently distinct, and possess the other requisite properties, are the following spring planted out in the testing ground to be fully proved. The young bulblets formed by these are each kept separate, and if the variety turns out on further trial to be equal to the first impression formed of it, this young stock is so much done towards getting sufficient stock for its distribution. But there is very great difference in the way some varieties increase as compared with others. Mr. Kelway informed me that some of the very finest kinds he has raised never would produce any young brood from the old bulbs, and consequently stock could not be had to send out ; some will furnish enough in five or six years, others require considerably longer. With these, as with most other things, the best are often the slowest to increase. After the small stock are taken up, then follow the larger roots. The tops are cut off about eight inches above ground ; they are then lifted and carted to the drying sheds. The young brood at the time of taking up is all rubbed off from each corm that produced it, that of each variety, as a matter of course, being kept by itself.

The soil is of an adhesive nature, which makes it necessary for the young brood to be washed so as to separate them from it. The shed room required for drying and storing is very extensive. When dry the remaining portion of the tops is removed, and the corms put in drawers for the winter until required for the execution of orders : this work employs from a dozen to a score of men and boys for many weeks. The planting and keeping clean from weeds entails a serious amount of labour. The unceasing care and vigilance requisite to keep the whole of such a stock true to name will be understood only by those who have had to deal with things of a similar nature. To keep the respective varieties thus correct to name previous to planting (which is begun early in March) the roots are all peeled, each sort separately. Those accustomed to the work can immediately detect from the colour of the inner skin any that are doubtful, and where any doubt exists the individual corm is at once consigned to the mixed or unnamed lot.

There appears to be no falling off in the demand, for each year the supply of proved kinds is usually exhausted before the close of the planting season. This year the stock of what may be called good, showy, cheap, decorative kinds, of such varieties as Augusta, Brutus, Maria Theresa, Abana, Ledœa, Liger, Capio, Orcus, Accius, and Meyerbeer, there are grown from 10,000 to 60,000 each. The following may be relied upon as good sorts :—Eugène Scribe, Etendard, Oracle, Edith, Iphicles, Prince Imperial, Princess of Wales, Lord Byron, Isoline, Le Titien, Apollon, Mrs. Neville, Xerxes, Etasippus, Una, Victory, Madame Monnéret, Macbeth, Mr. Bonfield, Amelia Catenes, Octavius, Mathilde de Landevoisen, Fulton, Evelyn.

The undermentioned are a few of the best show sorts, combining new and old :—Agrius, Arimus, Beauty of England, Belgica, Dr. Hogg, Dr. Woodman, Eusebia, Eusebius, Leonidas, Lord Beaconsfield, Mr. Marshall, Mrs. Kynaston Mainwaring, President, Rev. M. J. Berkeley, Duchess of Edinburgh, Sir M. Lopes, Mr. Spary, Mrs. Bates, Sir T. Symonds, Gwendoline, Ball of Fire, Mr. Ashbury, Mr. Derry, Hermanni, Robert Fortune, Colonel Finney, Pictum, Norma, Brennus, Damia, Hogarth, Iphis, Lady Bridport, Maréchal Bazaine, Miss Salway, Oberon, Pheneus, Prince Arthur, Semiramis, Yellow King, Neptunius, Muta, Lord Napier, Justinus, Julia, Hemon, fine and distinct.

The demand for cut Gladioli for decorative purposes is on the increase. Mr. Kelway sends from 3000 to 4000 spikes per week away through the flowering season. When there I saw 1000 for one order being made up. The whole business in Gladiolus as it exists at Langport is an evidence of what may be accomplished by taking in hand any particular speciality and doing it well. Mr. Kelway's views about the so-called disease in Gladiolus is that there is no disease at all, at least no contagious disease, but that in unsuitable soils the plant gradually becomes weakened, sickens, and dies. Even in the most congenial soil the adverse springs will sometimes produce an unhealthy appearance in the leaves, but this disappears on the advent of genial weather.

Mr. Kelway takes a common-sense view of the plant in maintaining that the Gladiolus, like most other bulbous or corm-rooted subjects, have very much more taken out of them by flowering than other members of the vegetable kingdom. By producing a large head of bloom that is allowed to remain on the plant until it forms seed more or less perfected, in addition to the formation of, in most cases, young bulbs at the base of the root, the new corm becomes so far weakened that when the autumn comes it is in anything but a condition to grow and flower satisfactorily the ensuing year. To counteract this state of things he is a strong advocate for cutting the spikes of bloom when fully open, which gives the plant a chance to build up and mature a new corm capable of growing vigorously the ensuing season. This is simply acting in accordance with the practice of the Dutch Hyacinth growers.

Mr. Kelway has also for many years been a large grower of Cucumber seeds, and has sent out a number of new kinds ; he has this season eight large houses, as many pits, and a quantity of frames filled with each sort in a separate house or pit,

and each variety grown from a single selected fruit. The principal kinds are Rollisson's Telegraph, Kelway's Improved Telegraph, Kelway's Lord Beaconsfield and Prince of Wales, Carter's Model, Douglas's Tender and True, Sutton's Duke of Connaught, Daniel's Duke of Edinburgh. A new kind to be sent out next year, Kelway's Empress of India, is a smooth variety, what few spines it bears are black; it averages from 15 to 18 inches in length, is one of the most symmetrical in form, even from end to end as a paste pin, a profuse bearer, and as far as can be judged from the appearance of the crop all but faultless. It seems a very shy seeder.

Tea Roses are planted out in almost all the houses devoted to Cucumber growing; they are planted inside along the front for the purpose of taking cuttings from: some 8000 of these are struck annually. *T. Baines.*

HARDY STONECROPS.

(*Continued from p.* 303.)

8*a*. S. TELEPHIOIDES, Michaux, Fl. Am., i., 277.

Glabrous, stem 6—12 inches.

Leaves scattered, 2 inches by 1 inch, oblong obovate obtuse, nearly entire or sparingly toothed, wedged-shaped at the base.

Flowers numerous, flesh-coloured, in small dense cymes 1—1½ inch diameter.

Calyx $\frac{1}{12}$ inch, tube very short, sepals lanceolate.

Petals $\frac{1}{8}$ inch, lanceolate, falcate, hooded at the tip.

Stamens as long as the petals.

Style one-third as long as the oblong follicles.

Fl. June.—Gray, Manual, 172; Watson, Index, N. Am. Bot., 351; Anacampseros telephioides, Haworth, Pl. Succ., p. 112.

On the Alleghanies from Maryland southward.

Our only knowledge of this as a cultivated plant is derived from the notes of Mr. Baker, who saw the plant in Mr. Wilson Saunders' garden at Worthing, and notes it as very near S. Telephium. Professor A. Gray also considers it "too near" to S. Telephium, of which it forms the American representative.

9. S. MAXIMUM, Suter, Fl. Helvet., i., p. 270.

Stem 1—2 feet, erect, green or purple.

Leaves opposite, sessile, spreading, stem-clasping, 2½ inches, ovate-acute, more or less cordate, crenate-dentate.

Cymes terminal and lateral, on long stalks forming a loose panicle, subglobose, many flowered, the lowest stalks usually longest; ultimate pedicels longer than the flower.

Flower-buds obovoid, abruptly pointed.

Sepals deltoid, lanceolate, half the length of the lanceolate whitish petals, whose tips are spotted with red.

Anthers reddish, projecting.

Carpels white, equalling the petals.—Fl. August, September.

Rchb. Ic. Crit., t. 737, fig. 969.

Europe, and North-Western Asia.

Of this species, as of S. Telephium, there are very numerous forms, some of them of much greater value as ornamental plants than others, on which account it is desirable to call attention to them and to affix a name if possible. In distinguishing these varieties, the most obvious points are the green or purple stems and leaves, the green or reddish flowers, the leaves cordate or tapering to the base, spreading or recurved. It must be remembered, however, that these characters are not absolutely to be depended on, as in different individuals they slide the one into the other, rendering definition impossible.

Var. *hæmatodes*, Miller, Gard. Dict. (sp.) (see fig. 60, p. 336).—Stems erect, glabrous, 2—2½ feet, deep purple; leaves, 5 by 3 inches, opposite, oblong-ovate, obtuse, subcordate, coarsely and irregularly toothed, purplish, veins impressed on the upper, prominent on the lower surface. Cymes numerous on long stalks, forming a large, loose, inversely pyramidal panicle, with a few scattered leaves. Flower-buds ovoid, five-angular; calyx-tube very shallow; sepals deltoid; petals whitish, tipped with red; anthers red; carpels erect, white.—Fl. September. Syn. Anacampseros Milleri, Jord. et Fourr., Ic. Pl. Europ., i. 1866, p. 35, t. 80; S. atropurpureum, hort.; Anacampseros chlorotica, Jord. et Fourr., *l.c.*, t. 86; Anacampseros cebennensis, Jord. et Fourr., *l.c.*, t. 83.

Said to be a native of Portugal, the Latin name of which, Lusitania, has been transformed in some catalogues and books to Louisiana! This is really a noble plant; its robust habit, deep purple stems and leaves, and copious flowers render it a desirable inmate for the herbaceous border or for rockwork. In autumn, however, it is apt to get too straggly, and needs support.

To this form we refer several robust habited purpled-stemmed Sedums with dark green or wine-red leaves, cordate at the base. A. chlorotica of Jordan and Fourreau seems only to differ in its recurved leaves, but this recurvation occurs at the base of the stem in many of the forms where the upper leaves are flat or concave. Other forms of maximum are—

ternatum.—Stems red. Leaves reddish above, green below, in verticils of three; upper surface red, lower dark green. Inflorescence corymbose. Buds oblong. Flowers yellowish. = Anacampseros ternata, Jord. et. Fourr., Ic. Pl., t. 87.

rigidum.—Boreau, Mon. p. 8 (sp.)—Stems deep red, 2—3 feet. Cauline leaves opposite, sessile, ovate-oblong, obtuse, slightly and irregularly sinuate dentate. Inflorescence loose, corymbose. Flower-buds ovoid, subangular. Flowers greenish.

corsicum.—Stem purplish. Leaves alternate and opposite, spreading, oblong-ovate, dentate, green. Inflorescence corymbose. Buds oblong, pointed. Flowers pale yellow, with a pleasant Apple-like fragrance. = Anacampseros corsicum, Jord. et Fourr., t. 81; Sedum majus, Hort. Hend., n. 239; S. latifolium, Hort. Florence.

cordifolium.—Baker (sp.), Ref. Bot., t. 34.—Stems purplish. Leaves alternate and opposite, spreading horizontally, oblong-ovate, sinuate dentate. Inflorescence corymbose. Buds sub-globose, 5-sulcate. Flowers ⅛ inch in diameter. Petals concave, whitish, with red spots. Anthers reddish. = S. maximum, Hort. Hend., n. 241. Anacampseros collina, Jord. et Fourr., t. 89, is very near to this form.

pachyphyllum.—Stems reddish. Leaves opposite, spreading, cordate-ovate, serrulate. Cymes globose, long-stalked, forming a loose terminal panicle. Buds ovoid-acute. Flowers greenish-yellow. = Anacampseros pachyphylla, J. et. Fourr., *l.c.*, t. 82.

serotinum.—Stems green, weak. Leaves opposite, upper ternate, spreading, ovate-oblong, sinuate dentate, green. Inflorescence loosely panicled. Buds oblong, abruptly pointed. Flowers greenish yellow. = A. serotina, Jord. et. Fourr., *l.c.*, t. 88. Sedum laxifolium, Hort. Henderon, is nearly identical with this form, as also S. leptorhizum, Hort. Florence.

assurgens.—Stem weak, ascending, green. Leaves ascending, opposite, green, oblong-obtuse, sinuate. Inflorescence lax, terminal cymes corymbose. Buds ovoid. Flowers pinkish. = A. assurgens, Jord. et Fourr., *l.c.*, t. 91.

triphyllum.—Leaves ternate verticillate, oblong, serrate. Corymbs terminal. Boreau, *l.c.*, 9. = Anacampseros triphylla, Haw. Syn., p. iii.

præruptorum.—A form with green stem, and recurved finely toothed leaves. Cymes globose, on long stalks. Flower-buds ovoid, subglobose. Flowers greenish. = Anacampseros præruptorum, Jord. et Fourr., Ic. Pl. Eur., t. 84.

recurvum.—Stems green, leaves opposite, oblong-ovate, irregularly toothed, recurved. Cymes in a loose terminal panicle. Buds ovoid, pointed. Flowers greenish yellow. = Anacampseros recurva, Jord. et Fourr., *l.c.*, t. 85.

Rodigasi, Fl. des Serres, xv., t. 1669.—A form with purplish leaves variegated with yellow. In cultivation it is more tender than most of the forms.

10. S. SPECTABILE, Boreau, Mon., p. 7.

Robust, glaucous. Stem 18—24 inches.

Leaves opposite, decussate, or in verticils of three horizontally spreading, 3 by 2 inches, flat, scarcely petioled, or the upper ones quite sessile; ovate-obtuse or spatulate, entire or obscurely sinuate dentate, slightly wedge-shaped at the base.

Flowers numerous, each ½ inch diameter, pink, in large flat-topped inversely pyramidal leafy umbellate cymes.

Buds elongate, pointed, slightly angular.

Calyx-tube extremely short or none.

Sepals linear-lanceolate, whitish.

Petals 3 lines long, double the length of the sepals, slightly concave.

Stamens ten, five epipetalous, slightly exceeding the petals; five alternate with the petals, and nearly twice as long. Filaments white. Anthers orange.

Carpels erect, pinkish, scarcely so long as the petals. Glands white, oblong, emarginate.—Fl. September.

Baker, in Saund. Refug., vol. i. 1869, tab. 32; Regel, Gartenflora, t. 709; Anacampseros spectabilis, Jord. et Fourr., Ic. Pl. Europ., p. 37, t. 100; Sedum Fabaria, Lemaire, Ill. Hort., viii., t. 271, non Koch; and of gardens, but erroneously.

Japan.

This is a noble species, most useful for herbaceous borders, rockeries, or for prominent positions in mosaic beds. For forcing or for conservatory decoration it is almost equally useful. It remains in bloom a long time, and offers great attractions to butterflies



FIG. 61.—SEDUM TELEPHIUM VAR. JULLIANUM. (SEE P. 303, ANTE.)

and other insects. It thrives with us in stiff clay; in lighter soils it does not do so well, but in any case it is a plant that should be grown in all gardens. It is also an excellent plant for windows, balconies, and even for garret windows in narrow streets. The flowers vary in depth of colour, on which account in the nurseries it may be met with under the names of roseum, purpureum, &c., but the colour is very much a matter of external circumstances. In the bud the leaves are first obvolute, subsequently valvate. The native

Buds elongate ovoid obtuse.

Calyx tube very short; sepals deltoid lanceolate, green, unspotted.

Petals spreading, lanceolate, greenish, flushed with pink, twice the length of the sepals.

Stamens ten, five epipetalous, exceeding the corolla, five alternate, with the petals rather shorter than the others.

Glands linear, strap-shaped, entire.

Carpels whitish or rosy, erect, as long as the petals.—Fl. September.



FIG. 62.—SEDUM MAXIMUM VAR. HÆMATODES: LEAVES AND STEMS BLOOD-RED, FLOWERS GREENISH. MUCH REDUCED. (SEE P. 336.)

country of this plant is not accurately known. It is supposed to be Japanese, but it is not admitted as such by MM. Franchet and Salvatier, the latest enumerators of the Japanese flora.

11. S. ERYTHROSTICTUM, Miq. in Ann. Mus. Lugd. Bat., ii. 155.

Glaucous, stem erect, 12—18 inches, greenish.

Leaves opposite or alternate, ascending, 2½—1 inch, concave, oblong, sinuate, obscurely dentate, entire and subcuneate or rounded at the base, sometimes tapering into a very short petiole, or quite sessile.

Flowers greenish, nearly ¼ inch in diameter, arranged in terminal corymbose cymes; not so flat topped as in S. spectabile.

S. albo-roseum, Baker, in Saund. Refug., t. 33; Gartenflora, t. 709; S. japonicum and S. macrophyllum, Henderson Cat.

Var. *variegatum*.—Leaves blotched with yellow.

Japan.

A handsome species, not much inferior to S. spectabile, and suitable for growth in the same situations. The variegated variety is also striking.

The plant varies in the attachment of its leaves, in the length of the stamens, and even in their number, for in 1874 we observed that all the flowers on our plants had five stamens only, those usually found attached to the petals being absent.

(To be continued.)

STRATTON PARK, HANTS:

THE RESIDENCE OF THE EARL OF NORTHBROOK.

MIDWAY between the North Hampshire towns of Basingstoke and Winchester is placed Stratton Park, the home of the head of the Baring family, and the residence of the ex-Governor-General of India, Lord Northbrook. This fine park may be said to be the centre of a magnificent estate of many miles circumference, cut up into first-class farms, and having portions finely wooded, but the larger part of the land is arable, and is famous for its corn and meat producing properties. Some of the holdings on this estate comprise fine properties in themselves, and it may not be uninteresting to state that that famous agriculturist, Mr. James Caird, rents under Lord Northbrook to the extent of nearly 2000 acres. A few generations only have passed since this large property was the heritage of the Dukes of Bedford, and the ducal residence and park were then at Micheldever, some two miles below Stratton; but all vestiges of that time have disappeared, save that the immediate meadows exhibit park-like aspects, with numerous fine trees abounding. A lane leading thereto, which time has vulgarised with the appellation of "Duck" Street, was originally known as Duke Street. The great Baring family, next to the Rothschilds the greatest banking firm in the kingdom, has many branches, the Ashburton family being one of them, but the actual founder in this country of the family's greatness was a whilom woollen merchant of the Low Countries, who, settling in England, became the prosperous progenitor of a race that comparatively within a few years produced English statesmen and peers. A curious characteristic in nomenclature seems to have marked the various heads of the Baring family. The founder was named Thomas, his son Francis, then came Sir Thomas, well known to present inhabitants in their younger days. Then Sir Francis, once First Lord of the Admiralty under Lord Palmerston and the first Lord Northbrook. Then the present head, the Earl of Northbrook, whose name is Thomas, and his only son, Lord Baring, is named Francis. Should this young man follow in the footsteps of his predecessors he may assist to add yet more political lustre to the house of Baring. Thus much for the geographical and genealogical incidents attached to the subject of this sketch, and now for a few remarks descriptive in a garden sense.

The gardens at Stratton Park present no features that excite or call for special laudation. It is rather pleasant perhaps to find that things are quiet and perhaps a little prosy, and that there are no displays of garden fireworks to be seen and no surprises. Everything looks neat and nice, and all the various departments are generally well done, and now that the control is in the hands of the gardener, Mr. Edward Gandy, who has spent the best years of his life in the family's service, and is emancipated from the surveillance of a steward who knew nothing of gardening, strides in advance will be made and much will be done to improve a place that has now many features that call for special approbation. The mansion, situated in a commanding position in the extensive park, is a large square building, simple and unpretentious in appearance, and having for its chief ornament a noble portico that forms the southern entrance. Its situation is upon what might be termed the centre of three distinct plateaus or terraces, the centre one being probably of artificial formation, for whilst in front the ground falls away into the verdant valley beneath, behind it rises with a sharp ascent and is even with the first floor of the building. On this rising ground, reaching near to the London road, are the extensive pleasure grounds, well-wooded and abounding in shrubs showing fine and luxuriant growth. From this elevated ground the eye looks over the shrubs and discerns on the same level the tops of the chimneys of the mansion, and it is hard to repress the wish that the house might be bodily transplanted to this more elevated and more commanding situation.

A notable feature on the north side of the house and pleasure grounds is an excellent grove of Lime trees that tower up to a great height, and form a grand and efficient protection from the north winds. If the busy bees are kept thereabouts they may indeed in their season reap a rich harvest of honey. Through this grove runs a broad gravelled walk, newly made, and a conversion from a common cart-road. This is one of Mr. Gandy's improvements, and should be highly

appreciated. It would be difficult to find during the intense heat of summer a more pleasant and cool spot; indeed it might well be likened, in its delicious coolness, to some cloistered seclusion where the sun never penetrates, and the heats and excitements of life are shut out.

In the outer park, fronting the mansion, are some noble groups of Spanish Chestnuts and Sycamores, that present very picturesques features. The Spanish Chestnut, not often a noble specimen alone, makes in company a fine group, and in these some thirty or more trees exhibit a splendid mass of foliage, and form a noble outline. The Sycamore here thrives superbly, and is remarkable for the even and almost smooth nature of its growth. Looked down upon from an elevation these fine trees have enormous heads, that appear as if clipped with shears, so close and compact is the foliage. Beech, Oak, and Elm also thrive well in this place.

The gardens lie some quarter of a mile from the house, and are entered from that side by ornamental iron gates that open up a vista of a long walk covered for a considerable extent by wirework, over which are trained numerous kinds of hardy climbers, and forming a perfect bower of flower and foliage. On the right hand of this walk are the glasshouses, some of which are perhaps as old as the mansion itself, but a capital range of vineries, now filled with well-established Vines in good fruit and span-roof stove and cool plant-houses, have been built for the production of plants suitable for house furnishing and decoration. One old house has mid-supports to hold up the long rafters, and up these have been trained strong-growing Fuchsias of various sorts. The long shoots of these plants are being carried up and down the rafters, and as the floral branches, now full of bloom, hang pendent from the roof, they exhibit an idea in house decoration that is well worth copying.

The old Riccarton Fuchsia thrives finely in the open air at Stratton. Just in front of this greenhouse are the remains, seen in long grass paths, of a former parterre flower garden. The beds have now been allotted to the production of fruit and herbaceous flowers, and in the midst is a raised pond swarming with gold fish, round which the old Fuchsia luxuriates during the summer most freely. The plants are cut back in the winter, and the stools have the protection of some sashes. The growth each season reaches to some 5 feet in length, so that large bushes are formed, and these were at the time of our visit covered with flowers. This old Fuchsia ought to be grown universally, and should find a prominent place in all gardens. When it does well, and that is generally in all places where it is grown, it proves during the summer one of the noblest deciduous hardy flowering shrubs.

The kitchen garden quarters are extensive, and the crops of the various vegetables as good as could be desired. The soil is evidently good and well cultivated. Potatos are largely grown, but the haulm had nearly all disappeared, and the workmen were then lifting a fine clean crop of Late Rose, a favourite Potato here. Fruit crops had been fairly good, except in both Apples and Pears, the produce being about as elsewhere. In most features the gardens are not behind other good average places, but the absence of the family in India and elsewhere of late has not tended to lend that interest in their development that will be found in future years.

Micheldever station, on the South-Western Railway, is the nearest to Stratton, and is about two and a-half miles from it, on the west. On the east, most delightful drives through charming woodlands lead to Alresford and the Grange, Lord Ashburton's noble property, with descriptions of which not a few readers of the *Gardeners' Chronicle* are already familiar.

A. D.

The Villa Garden.

CROWDED FORECOURT GARDENS. — This is a common evil in large gardens as well as in small ones. The trees and shrubs are planted too thickly in the first instance, but then it is pardonable, on the ground that a naked plot of garden should be furnished and clothed as soon as possible; and no one can object to it. But when the shrubs and trees begin to grow a little thinning out should be carried on from time to time, leaving the most desirable plants and taking out those of less importance. But this is rarely done, and the consequence is the plants get crowded and drawn, the bottom branches of shrubs decay and become naked, and the screen of leaves is just where it is least needed. The forecourt becomes spoilt in appearance, and all for want of a little attention at the right time.

Another common fault is to allow the trees, and especially coniferous plants, to grow so tall as to screen the windows of the house from the light, and impede the circulation of fresh air. What a miserable place to live in, especially when the trees are on the north or sunless side of the house, shutting out light and air, and holding the rooms in a constant shadow. Why, even Mark Tapley would be prevented almost from making himself jolly under such depressing circumstances. A few years ago, when it was the fashion to plant coniferous plants, both rich and poor had caught the infection, and on almost any spot of ground, however small, a Conifer was placed. The Araucaria, and especially Cedrus Deodara, were planted in places which in a few years they would be certain to outgrow. One sometimes felt inclined to lop down some of these ill-placed and overgrown trees, and let the light of Heaven flow into the habitations of men.

Over the way, as we write, a jobbing gardener is amusing himself—it would be undignified to designate it as labour—in clipping some shrubs instead of pruning them. He thinks he is pruning them, but he is simply clipping into a round-headed form sundry Laurels, Thorns, &c. He is evidently desirous of getting them to resemble, as far as possible in shape, some Arbor-vitæ in the middle of the garden; and all round it, whatever the style of growth, the trees must be brought into harmony with the rounded outlines. He would doubtless be a master-hand at clipping Yews and Hollies into the grotesque forms one still sees in country districts, as if the lines of beauty in natural objects were to be found alone in turkeys, peacocks, and other birds and animals, and in various decanter-shaped ideals. But what a monotonous uniformity of shape and outline the gardener is perpetuating by his practice.

In a small forecourt garden the shrubs should be kept dwarfed, and the old growths should be removed at intervals, so as to permit of the young shoots coming up, and so refurnishing the plants. Take Laurels for instance—so common in the forecourt gardens of Villa residences—these are too frequently permitted to grow up tall till they have naked bottoms and green foliage only at the tops. This method of growth is adopted—or, perhaps, it would be best to say permitted—to shut out from observing eyes the space between the roadway and windows; and when this fence gets tall the plants in the garden dwindle and die. Then it becomes a paradise for slugs, snails, and other vermin; and mould and damp flourish where pleasant flowers might else blossom.

What an unfortunate thing it is for a grass-plat when it is so shut in from light and air, and more especially so when the soil is clayey and damp. What a pitiable growth of grass ensues. It becomes long and attenuated; the scythe cannot cut it; and to attempt to shorten it with shears is a kind of penal labour. A grass-plat cannot be pleasant to the eye amid such surroundings; the worms revel amid it, and throw up worm-casts as if they had taken compassion on its miserable appearance and were desirous of burying it out of sight.

In many large suburban gardens the same overcrowded condition may be witnessed, and fine specimens of valuable trees and shrubs are crowded almost to death and spoilt by the common shrubs about them. The close contact of other trees of a common character injures the development of choicer subjects. How often may this defect be noticed and its consequences deplored.

It is possible to improve the climate round a dwelling very much by proper planting, and, what is as important, by timely thinning-out. There are points where storm and wind need to be kept at bay, and there are points, too, where the life-giving sun should be allowed to play, and invigorating breezes blow with unrestricted freedom. But when it is necessary to set up a barrier of trees or shrubs to break the force of the blast, or hide a disfiguring outlook, let it be done at as great a distance from the house as possible, and on the supposition that there may be ground to spare for the purpose. All around the house let the air have full play among the trees and on the dwelling, especially at the surface of the ground, and let no rubbish in a decaying state be left under the trees or bushes at any time. Between the house and the trees let there be an expanse, however limited in extent, of well-kept short grass; it is a pretty and a pleasant sight, cool and refreshing in summer, and agreeable in winter.

Garden Operations.

FLOWER GARDEN, ETC.

The layers of Carnations and Picotees should now be in fine condition for removal to their winter quarters, whether that is in pots to be sheltered through the winter, or whether they are to be planted in the open beds or borders. The best rooted layers should be selected for the purpose of potting in pairs in 5-inch pots to be wintered in a cold frame, and in the spring to be shifted into 8-inch pots to flower. They are troublesome subjects, being very liable to spots of mildew, and very particular as to soil. The subject is too wide to enter upon minutely, but two great essentials are, never to allow the plants to be surrounded by a stagnant atmosphere, and to ensure a thorough drainage, even by so increasing the size of the pot as to be able to fill quite one-third of it with broken crocks, charcoal, and chalk. The presence of worms and brown grubs is to be especially guarded against. The culture in beds is more simple, but here the great essential is thorough drainage, and if the subsoil is at all retentive and cold it is best to raise the beds by means of stout boards 9 inches above the general surface level. This will often ensure success in localities where, if planted among the general stock in mixed borders or in beds on the general level, they cannot be made to thrive. The Clove varieties of Carnations will come under the same routine of operations, but the sooner the beds are now planted the better will they be able to sustain the vicissitudes of winter.

Before the advent of frost it is advisable to go over the stock of Dahlias, and to see that they are correctly numbered as to height, colour, and general adaptation for effect, for which purpose many of the older and more floriferous varieties are much better adapted than some of the newer and more symmetrically beautiful exhibition varieties, many of which hide their beauty under the foliage; this does not really matter where exhibition is the only object of culture, but for the production of effect in a flower garden those varieties are to be preferred which throw the flowers well above the foliage. Mr. Turner sent me this spring a very desirable variety called Little Wonder, which embodies these characteristics and is well adapted for garden purposes; the colour is nearly the same as the Rising Sun, a well-known dwarf variety, which I saw used with great effect in some of the beds at Drummond Castle.

We must now begin to look forward to what will be required for the purposes of floral display in the spring, and foremost amongst these are the numerous and charming varieties of bulbous plants, some of which for very early bloom will soon have to be committed to the earth. Crocuses of all varieties, for example, may now be planted at any time, as also may Scilla, Muscari, Fritillaria, including the grand old variety Imperialis; Trillium grandiflorum, and some Hyacinths in patches in the mixed borders, for which all the above are very eligible, but the general planting of Hyacinths must be left until the bedding plants are over: these will make a very interesting display in combination with Myosotis dissitiflora as a groundwork. The reserve garden should contain a large stock of this plant if former directions in regard to its culture were carried out. From the same source also must be derived the stock of Pansies, so useful as spring-flowering plants; and if the necessary attention has not been accorded to them, no time should be lost, as they may still be struck from cuttings, but still better from divisions of the old plants, which will often split up into a good stock of rooted suckers. The stock of Alyssum saxatile, Arabis, and evergreen Candytuft should also be looked to, as they will all be in request as the season advances.

Those who have a pure strain of the Golden Pyrethrum, or Golden Feather as it is called, will do well to save their own seed with particular care, as I find that bought seed is becoming very apt to degenerate into a coarse and pale green variety; and as it is, after all, one of the most useful, and, I may add (where the strain is pure and dwarf), most tractable of the plants used either as edgings or to mark the divisions in carpet bedding, it is worth while to make the endeavour to secure and retain a perfectly pure and true variety, and it should not be discarded because in some instances a coarse-growing and almost green variety has resulted from carelessly saved seed.

The Czar, Lee's Victoria, and several other kinds of Violets of that strain will now be in request, and the plants should have every attention to induce them to flower freely. Let the surface of the ground be stirred up and covered with some strong and well-decomposed stimulating manure, and this again covered with cocoa-nut fibre; this will prevent the flowers from being soiled by heavy rains. In favourable autumns the Viola arborea will also throw up an abundance of flowers if the beds were formed early in

May; these beds should moreover be dressed as advised. Copious waterings will be very necessary if dry weather prevails. Flower-beds becoming vacant, or even shabby, should be at once cleared, trenched up, dressed, and otherwise prepared for the reception of bulbous and other spring-flowering plants. *John Cox, Redleaf.*

FRUIT HOUSES.

Strawberries in Pots.—Where autumn Strawberries are appreciated they ought to be advanced in different stages during the present month, so as to have something in hand against unfavourable contingencies later on. Those plants that were planted out during the early part of the summer are now bearing fruit, and many are with us in full flower. If it should be necessary to increase the stock already in reserve for autumn fruiting, a portion of those in flower might be lifted and potted up after the fruit has set. The one point of importance in autumn Strawberry growing is to get the fruits set while the weather is favourable, and the different organs of the flowers have sufficient vitality in them to perform their respective functions perfectly. They can be advanced by stages as they are required afterwards. Plants intended to fruit early next month should have their fruits thinned and be placed on shelves near the glass and liberally fed with liquid manure.

The routine duties connected with the management of the general stock for next spring consists in removing runners daily, and keeping the pots clear of worms and weeds. The leaves of strong growing varieties are unusually fleshy and vigorous, and require more space as the foliage expands. They should lie flat over the sides of the pots, with short leaf-stalks and prominent crowns, if they are carefully grown. We have observed one or two perforated leaves already, and on examination we find it to be our old friend the Strawberry maggot, which nestles itself on the under-side of the leaf, and which if not stamped out will become both troublesome and destructive. Now that the pots are filled with roots, a passing shower that wets the surface of the leaves and soil will not be sufficient to sustain leaves and roots in full action. *W. Hinds, Otterspool.*

Orchard House.—All the fruit has been gathered from the trees in our house now, and attention may be given to ripening the wood. The old trees are well set with blossom-buds for next year, and the attention required now is to keep the soil in the pots sufficiently moist to retain the leaves in a healthy condition. As a further aid to this, all insect pests should be removed. Red-spider will be sure to have gained a foothold while the use of the garden-engine was discontinued to allow the fruit to ripen. If the trees are thoroughly syringed so as to rid the leaves of this pest entirely, it will not be necessary to syringe the trees every day afterwards. If aphis are clustering about the young wood still, it will be as well to get rid of them, but it must be by washing with strong soft-soapy water, with a little tobacco-liquor added to it. Ascertain whether it is strong enough to kill the aphis without injuring the leaves by dipping a shoot in the mixture, and allowing it to dry on. If no leaves are injured, and the aphis is killed, three hours after the whole may be washed. If a large number of trees are badly infested with aphis it would be tedious work to hand-wash them. The best way would be to lay the trees on their sides (presuming they are in pots) and carefully syringe every part of the wood. The object in laying the trees on their sides is to prevent the water from running into the pots.

Brown-scale is a troublesome pest, that will steadily increase during the summer months, notwithstanding all the care that may be bestowed on syringing. There is no more effectual method to destroy it than to wash it off with a sponge and soapy water. If the trees are too thickly furnished with young wood, the surplus ought to be cut out, and in doing so the gross wood should be removed, leaving the small shoots about as thick as a goose-quill. They should now be well studded with round buds, which are the blossom-buds, and the bark ought to be of the colour of polished mahogany. It may be as well still to allude to the practice of shortening the young wood, and to say that care must be taken in doing so only to cut at a point above the triple buds; the single buds are sure to be flower-buds. This has been mentioned several times during the season, but the advice is still necessary, as I saw a large orchard-house quite recently where the young wood had been cut back without any care whatever being taken as to what sort of a bud the shoots had been cut back to.

If the trees have not yet been repotted, the operation should no longer be delayed. Some compost should also be prepared for the young maiden trees—good clayey loam, the turfy part of an old pasture, if it can be obtained, four parts, to one part of rotten stable manure. The loam should have been stacked for two or three months, or long enough to kill the roots of the grass. It ought to be forked off the heap, and then be torn to pieces by the hand. It is best to mix up the compost a month or two before using it. The roots of such trees are sometimes dug up very carelessly in the nurseries, and perhaps in some cases the fault is with the purchaser, who will insist on having the trees cheap. On one occasion I was selecting some fruit trees in one of the large nurseries at the same time that two men were lifting some. They were not at all careful about it, and I told the foreman that I would not like the trees I had selected to be lifted as those he was then doing. "No," he said, "yours will be carefully lifted, as they ought to be. You are paying a fair price for them; that order is a cheap lot." Better far pay 6*d.* extra on each tree, and have them lifted without bruising the roots. If the roots have been injured, it is best to cut off the injured portions before potting. If it is seen that any of the trees are likely to have imperfectly ripened wood, such ought to be placed where the full blaze of sunshine can act directly upon them, and a high temperature should be kept up by day. *J. Douglas, Loxford Hall, Ilford.*

PLANT HOUSES.

Secure and pot up good batches of Roman Hyacinths, Paper-White and Queen of the Netherlands Narcissus, White Pottebakker, and Duc Van Thol Tulips in variety, for early flowering. The pots used should be clean and well seasoned. Nothing is more destructive to the roots of bulbs than new pots. Immediately the roots come in contact with the sides of a new pot they blacken and die back, in most instances for their entire length. Various opinions exist as to the best soil for potting purposes, some recommending good rich loam that has been stacked up for twelve months, with alternate layers of pig-dung; others recommend loam and cow-dung in the same way; others peat, loam, leaf-mould, and cow-dung; and others again good loam, naturally rich, or without the admixture of dung. We prefer loam of the latter quality, as the addition of dung has a great tendency to induce the bulbs to make too much grass even under the most careful treatment and attention to light, air, &c., and which very much mars the effect of good blooms or spikes, particularly Hyacinths intended for exhibition purposes. For home decoration good ordinary loam will grow all bulbs of this class sufficiently well to meet the requirements of most cultivators.

The general collection of bulbs required for decoration should be potted before the end of this or early next month. Hyacinths should be potted singly in 6-inch pots, with a little sand under each bulb, except Romans. These and Tulips should be potted four or five in a pot, Narcissus three in a pot. When pressed for pots or room Tulips may be planted in rows in boxes about 1 inch or a little more apart, and potted four or five in a pot just before they come into flower. In this way a great quantity of bulbs may be grown or forced in a minimum of space. Immediately the bulbs are potted they should be placed on a dry hard bottom out-of-doors. The Hyacinths should be covered with an inverted small pot according to the size of the bulb. The whole should be covered over with 6 or 8 inches of sifted ashes, sand, leaf-mould, cocoa-nut refuse, tan, or similar material for a month or six weeks, by which time the pots will be pretty well filled with roots, when the early flowering varieties may be selected and introduced into the forcing pit or frame in batches to suit the requirements.

Large batches of Lily of the Valley should be potted up at the same time for immediate early work. A few selected single crowns potted in 6-inch or 7-inch pots are undoubtedly the best, while for later work clumps suit admirably. Some cultivators prefer to grow on those that flowered late last spring in pots for this purpose, viz., immediately the plants have done blooming they are put into a vinery or Peach-house at work, and grown on until they have formed good crowns and the foliage begins to ripen. They are then gradually hardened off and fully exposed to sun, light, and air in an open situation. When the foliage is all shed, they should be stowed away until required for forcing, but under no circumstances should they be allowed to get dry. Another way is to plant them out in a warm situation in a bed of rich soil, a few crushed bones being added. Here they should remain for two years, and then be lifted as required. We greatly prefer imported crowns, as the flower-scapes and individual blooms are much finer than from home-grown ones. When potted they should be put in cold frames, or where they will not be too much exposed to heavy rains to rot the crowns, and should be covered over with cocoa-nut refuse, leaves, sawdust, spent hops, or tan, and introduced into heat in batches as required. To start them well into growth early in the season a good amount of bottom-heat is necessary. Plunge the pots into a frame in the forcing-house, and cover them over with moss or any plunging material to the depth of 2 inches. Keep up a steady bottom-heat of about 90°. This will induce the crowns to throw up both leaves and flower-spikes, and when they are about 2 inches high they may be gradually exposed to the atmosphere of the forcing-house. Plants subjected to a cooler treatment too frequently throw up flower-spikes destitute of foliage, rendering them worthless, and sometimes they are a couple of months before they start at all. Tuberoses that have made spikes a couple of feet long should be removed from the cold pits and assisted with a little warmth, otherwise when the flowers are produced they too frequently come yellow or straw-colour instead of white. Later batches should be retained in the cold pits or frames some little time yet for producing flowers in November and December.

Hard-wooded plants out-of-doors should not be allowed to get too much saturated by heavy rains. When storms threaten turn the pots on their sides, or afford the necessary protection. Pot up the earliest batches of Solanum Capsicastrum from the open borders, place them in a cold pit, and give occasional syringings overhead—keep rather close until root action takes place. Keep Tea Roses planted out in pits well freed from greenfly and other vermin, as their buds and blooms will soon be valuable. *J. Ollerhead, The Gardens, Wimbledon House, S.W.*

Orchids.—A greater amount of light may now with safety be given to the whole of the different divisions. The back blinds will not need to be let down at all, whilst those on the front or south side will also be less frequently required, and on the brightest days will not be needed so soon in the early part of the day, and must in the same ratio be drawn up sooner in the afternoon. In a very short time the shading must be dispensed with altogether. It is well, therefore, that advantage should now be taken of the sunlight, so much as may be allowed with safety.

In speaking of shading and of the necessity of obstructing the direct rays of sunlight, a very great deal will always depend upon the position of the house, the height of the structure, and therefore the distance of the plants from the glass, and also the locality in which the residence may happen to be—whether in the south or northern part of the country—knowing well the difference there is in this latter respect, more especially when the atmosphere of such a city as Manchester is taken into account, directions that may suit one locality seem to a certain extent to be out of place when put in practice in another. So in this matter of shading, whilst the general needs and requirements are in all places very similar, the direct following of suggestions in matters of this sort is very much a matter of personal observation and practice.

The Odontoglossums, more especially those of the Alexandræ, Pescatorei, cirrhosum, and Hallii type, will now be growing vigorously; and that they may so continue see that a regular supply of water is given at the roots, that plenty of ventilation is given at the top as well as the bottom every day, and that the temperature at night-time runs down sufficiently low to leave a slight dewing on the plants in the morning. See also that, as the new leaves push up, that minute but troublesome pest, the yellow thrips, is not allowed under any condition to effect a lodgment on any of the young breaks. This insect seems to have a special fondness for the tender leaves of the Odontoglots, and it appears to make most progress during the summer time, in spite of air and moisture—the reason being doubtless that our plants, even with all we can do, by shading, air, and water, are in a warmer and drier atmosphere than that in which they luxuriate in the ravines, dells, and other favoured spots in New Grenada, Ecuador, and Peru. By sponging, using water with soft-soap mixed in it, and a few drops of turpentine added, the foliage and bulbs may be kept thoroughly clean. A little tobacco-powder blown into the hearts of the breaks, and sponged off again in a few days, will have a great effect in keeping the thrips down. If the plants are badly affected they should be dipppd immediately in a solution of soft-soap, tobacco-water, and a little turpentine, known as Chelsea Composition. Dipped in this mixture, taking care that the pots and roots do not come in contact with it, they should be laid on their sides to drain for a short time, and then dipped in clean water to take off any of the solution that may not have drained away. If this operation is performed in a careful and observant manner it will thoroughly clear away this pest, as well also as the yellow and black fly, should any of these put in an appearance. Smoking, doubtless, would be a much more expeditious method, less labour and time being required.

Under no pretence whatever should the Odontoglossum-house be fumigated; not that thereby the plants must, of necessity, be injured—for, under some conditions, it has been carried out safely; but the probabilities are that after fumigating, and the sunlight once falling upon them, the great number of yellow and disfigured leaves will be such that a twelvemonth's careful treatment and growth will be required to make up the great loss, whilst the weakened growths and smaller-sized bulbs will assuredly bring spikes of less length and deficient also in the number and substance of the blooms. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 14, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept 16	Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Sept 17	Royal Horticultural Society's Fruit and Floral Committees' meetings at 11 A.M.
WEDNESDAY,	Sept 18	Sale of Bulbs, at Stevens' Rooms.
THURSDAY,	Sept. 19	Sale of Established and Imported Orchids, at Stevens' Rooms
FRIDAY,	Sept. 20	Sale of Scientific Instruments, &c., at Stevens' Rooms.
SATURDAY,	Sept. 21	Beckenham and Alexandra Floral and Horticultural Society's Show.

THE articles that we have already published concerning the state of the trees in Kensington Gardens and Hyde Park have brought us several letters endorsing our views and calling attention to the lamentable state of the trees in St. James' Park and in the PLEASURE GROUNDS AT KEW. The circumstances in these different cases are so different, that it is useless to apply to one and all the same reasoning. Each case must be investigated for itself, and be separately considered. In fairness, too, it must be remembered that neither the parks nor the pleasure grounds at Kew must be looked on as pecuniary investments. Sylvan beauty and the recreation of the people are the main objects, the growth of fine timber quite a secondary consideration. The same rules of practice, then, that would apply to a well-managed wood tended on commercial principles, do not altogether apply in the instances we are now considering.

At Kew every effort should be made to preserve intact the woodland beauties of the pleasure-ground. Wholesale clearances are by no means to be advocated, nor even the removal of sickly trees beyond what is imperatively necessary. The cutting of avenues through the woods, as recommended by a correspondent fresh from the woods of Surrenden, should have been done long ago, if at all. To do it now would be to imperil the safety of the existing forest, and to hasten its decay. For in the case of Kew it must be remembered that the trees are dying of premature old age. This is due probably to the miserably poor soil in which most of them are growing. In other cases the mischief arises probably from the fact that the soil is waterlogged in winter, the feeding roots being, as it were, suffocated in stagnant moisture.

For the most part the decay of the trees at Kew, then, is premature. Whether it can be arrested to any material degree is a point upon which we do not care to hazard an opinion; but whether or no, every one will agree upon the paramount importance of preserving the trees as long as possible. Their fate, indeed, is sealed—it is only a question of time; but on all accounts, it is desirable to prolong that time as far as possible, and to make arrangements elsewhere for the future. The felling a few trees here and there will do little good, the planting young trees in the exhausted soil is to court failure, the driving avenues will, as we have said, only accelerate the evil day. What, then, is the proper course to pursue? For the reasons we have stated we do not altogether agree with the recommendations of our correspondent, "An Old Subscriber," whose letter we subjoin. We would remove at once such trees as it is absolutely necessary to remove; but we think the most satisfactory policy for the future would be to recognise the fact that the existing woods have entered upon their period of decay, and that, whatever might have been done in the past, little or nothing can be done now. Let the woods be kept pretty much as they are, interfering with them as little as possible. Their beauty will be great for years to come. Decay up to a certain point will but heighten their picturesqueness.

On the outskirts of the present wood are now gathered together the materials for the most extensive arboretum that has yet been got together in this country. At great pains and labour a splendid and most varied collection of young trees and shrubs has been made, and they have arrived at such a stage now that it becomes necessary to move them into permanent quarters. To some extent this has been done, the trees and shrubs have been planted in avenues according to their botanical affinities. Perhaps enough has been done in the way of forming these avenues to show that other modes of disposing of the trees are now desirable.

Symmetry of form and something like equality of size are essential points in the formation of an avenue, and these cannot be obtained by a strictly botanical or by a linear arrangement of trees of tall stature and free growth mingled with others of low elevation and slow development. Obviously, planting in masses, with the taller ones in the centre and the smaller ones as outliers, would be preferable. But then arises the question, How can this be done at Kew with its restricted area?—for restricted it is when the small patches of good soil are taken into account. To cut down, grub up, or clear and trench the existing woods, even in part, or to drive avenues through them, would be at this present time, to our thinking, impolitic, and destructive of the beauty of the gardens. Very much better to start afresh elsewhere. But where? The answer to this is—the old Deer Park at Richmond. Here is a large level space of old pasture land that has never been exhausted by tree growth — extending from the present boundary of Kew to Richmond Green, and from the Richmond Road on the one side to the river on the other. With Richmond Green direct communication might readily be made. The old Deer Park is, we believe, Crown property, and not very remunerative to its possessors. Here is the very place to lay the foundations of a new belt of wood to replace those now hastening to decay, while the central portion might be planted in masses as an arboretum. Landscape effect and the necessities of horticultural science might each be studied. Neither need interfere with the other. The arboriculturist, the landscape gardener and forester of the future would each find what he stands in need of. The mere loiterer who cares for none of these things would have his roaming fancies gratified, and the artist would rejoice in the new combinations which the juxtaposition of pure woodland scenery and of strict scientific grouping would give him. Whether or no this scheme be practicable, the main circumstances remain—first, that we must preserve what we have, and retain the glorious woods of Kew as long as we can; next, that provision must be made for the future; and, lastly, that the splendid materials that have been accumulating for a national arboretum shall be both fittingly and artistically arranged.

—— BATATAS PANICULATA, represented in the woodcut (fig. 63) which occupies the opposite page, is a very handsome climbing plant of the Convolvulaceous order, inhabiting the East Indies. As will be seen from the figure, it is a plant of noble proportions. It is furnished with a thick fleshy root of considerable length—like one of the elongated forms of Mangold Wurzel not over well cultivated—at the top of which eyes are developed like those on the crown of a Dahlia. The stems, which develope rapidly while young, are as thick as a turkey's quill, and in our hothouses die back nearly or quite to the thick root annually. The leaves, as will be seen, are ample and digitately parted nearly to the petiole, and the large funnel-shaped flowers have a widely expanded limb; they are produced in cymose panicles, and are a pretty pale pinkish rose tint, produced towards the extremities of the annual stems, which reach a development of from 15 to 20 feet in the case of plants cultivated in pots. It is a fine subject for a stove conservatory.

—— OPHIOGLOSSUM LUSITANICUM IN IRELAND.—We have received from Mr. HENRY CHICHESTER HART specimens of Ophioglossum lusitanicum, which he has recently found growing wild in the county of Donegal, in Ireland. It had already been recorded as a "British" plant in virtue only of its occurrence in Guernsey, where it appears to be plentiful. This Irish habitat consequently extends the area of its distribution, and should encourage botanical tourists to search for it on the warmer coasts of England, and in other parts of the Sister Isle. Another correspondent, Mr. O. FIRTH, reports that one of his cultivated plants of this Fern, which ripened off during the early part of the summer, is now again bursting into growth. The experience of Mr. HART and Mr. FIRTH goes to show that the plant is in an active state of growth in the late summer months, and in autumn, as well as at the period usually attributed to it in books, namely, the early spring; and possibly it may make two growths in a season if the conditions of soil and climate are suitable. *T. M.*

—— TENDER AQUATICS IN THE OPEN AIR.—There are few plants that afford more interest and lend a more decorative effect to garden vegetation than a selection of aquatic plants. Of hardy kinds there is now a large number of really fine plants in cultivation, and it has of late been enriched by a few valuable additions. The list of open-air aquatics may be further augmented by introducing such kinds as are of doubtful hardiness. There are many beautiful kinds which luxuriate in the open air during the summer, but which owing to their tenderness must be removed to a higher temperature in winter. This trouble may be avoided in the case of those which annually die down, or of those which have floating or submerged leaves, if the temperature of the water can be raised during the winter to prevent it from freezing. This may be effected without much difficulty if the tank or pond be in proximity to the heating apparatus of a house, as it would require but a 4-inch flow and return pipe for the purpose. It is owing to the comparatively high temperature of the water that the masses of the beautiful Cape Aponogeton distachyon and other aquatics thrive so well in the Exotic Nursery, Tooting, and which is supplied naturally from springs of an uniform temperature throughout the year. Amongst those that are reputedly hardy, but which succeed better under the above treatment, may be mentioned the noble Thalia dealbata, which, if planted in good soil at a considerable depth, will grow more vigourously than when under glass. The Aponogetons, including the newly-introduced A. spathaceum, are all impatient of the cold of our winters, but do not require high temperature. The interesting South European Vallisneria, several of the half hardy species of Nymphæa, Nelumbium luteum, Trapa natans, Calla æthiopica, Richardia albo-maculata, and a host of others, would be perfectly amenable to such treatment. It would be very interesting, and of great service, if the experiment were tried to record the relative hardiness of the kinds we now grow under glass, and seeing that all aquatics, both tropical and otherwise, are the most easily managed in other respects of any class of plants, it would greatly tend to popularise them and bring them into more general cultivation, to which their merits entitles them.

—— KEEPING ONIONS DURING WINTER.—A cultivator of some experience asserts that he finds no better way of keeping Onions during winter than by drying them for a day or two after they are pulled, pulling off the stalks to within a few inches of the bulbs, tying them up in bunches, or to straight sticks, and hanging them up in an open airy shed, where rain only is kept off. Onions kept in this way do not grow out till July; the sticks are preferable to the old plan of roping to straw-bands, as the latter become damp and induce growth.

—— WORCESTER PEARMAIN APPLE.—Some samples of this Apple, growing on quite young pyramid plants in Messrs. T. BUNYARD & SONS' fruit-tree nursery at Allington, near Maidstone, are so fine and so richly coloured as fully to justify all that has been said in praise of it. It is large, handsome, and very richly coloured; it is also a great and early



FIG. 63.—BATATAS PANICULATA. (SEE P. 340.)

bearer, and the habit is almost all that could be desired in an Apple. Messrs. BUNYARD & SONS anticipate that it will become as popular as Lord Suffield, and are growing great quantities of it to supply the demand for this variety for the Kentish fruit gardens. It partakes somewhat of the character of the Red Astrachan, though it is reported to be a seedling from the Red Quarrenden. It is, to all appearance, a variety well adapted for cultivating as a pyramid in small gardens.

—— THE FARLEIGH PROLIFIC OR CLUSTER DAMSON.—This a wonderful bearer, and trees of it in parts of Kent are found to have the branches laden with dense clusters of fruit. It is a constant and astonishing bearer, the fruit small, roundish-oval in shape, the black skin carrying a slight bloom. The fruit is borne in large clusters. It is also known as the Crittenden Damson, probably on account of having been raised by Mr. JAMES CRITTENDEN, of East Farleigh, close to Maidstone. It is a very lucrative market variety, because such a free and heavy bearer; and in their new fruit tree catalogue Messrs. BUNYARD & SONS, nurserymen, Maidstone, state that one grower of the Farleigh Damson sent to market nearly 3000 bushels, which fetched some 14*s.* per bushel, gross. In places where the Kentish orchards occupy exposed positions, it is customary to plant Damsons on the outside, so as to form shelter for choice kinds of fruit. The Cheshire and Shropshire Damson, and the Prune, are also much grown for market purposes, as they are found to produce a return quicker than other fruit trees. The common White Bullace or White Damson is also a good variety to plant as a line of shelter, as it makes a close growth, and in winter as in summer forms an excellent screen. The White Bullace is producing heavy crops of fruit in places this year, and it is well adapted for preserving and for tarts. The favourite mode of growing Damsons is as standards; but they are also worked as half standards and pyramids, to suit the convenience of purchasers, and the requirements of gardens.

—— PLUMBAGO CAPENSIS AS A ROOF PLANT IN A CONSERVATORY.—In the circular conservatory at Preston Hall, Aylesford, the residence of H. A. BRASSEY, Esq., M.P., a plant of Plumbago capensis has been carried up the wall and allowed to grow along the interior of the roof, and then hang down in graceful festoons and falls. In this position the plant blooms with remarkable freedom, and the effect is strikingly handsome. The unpruned liberty the plant enjoys at this season of the year no doubt does much to promote its free-flowering quality.

—— LILIUM AURATUM.—We are informed that Mr. T. PUTNAM SIMMONDS, of Salem, contributed to the Massachusetts Horticultural Society's exhibition on Saturday, August 23, a spike of Lilium auratum monstrosum, which contained 140 perfect blossoms. He was awarded a silver medal by the society. The bulb was set in 1874. At the close of the exhibition Mr. PUTNAM presented the above to Mr. MARSHALL P. WILDER, who kindly sent us a photograph of it. The section of the stem bearing the flowers measured 30 inches in height and 18 inches in diameter; the stem was flat, 2 inches wide, like the sports which in L. lancifolium, are denominated by VAN HOUTTE as monstruosum corymbosum.

—— PHYLLOXERA.—A despatch has been received at the Foreign Office from Nantes, in which Mr. Consul CLIFFERTON reports the serious increase of the Phylloxera in the department of the Charente, and also in that of the Charente inférieure. In the former, the cantons of Cognac, Jarnac, Segonzac, and Chateauneuf, which are the centre of the best brandy district, have been especially attacked. In the latter out of 168,945 hectares of Vines existing in the department in 1875, the date when the Phylloxera first showed itself, 135,490 hectares are now either actually invaded or in the area of invasion.

—— FUCHSIA-GROWING IN THE WEST OF ENGLAND.—One of the chief competitions with Fuchsias in the district where they are so exceptionally well grown, is at the exhibition of the Bath Horticultural Society, at the end of August. In addition to a £5 silver cup, the Royal Horticultural Society gives its Silver Banksian Medal to the best nine plants. There is always a keen competition for honours in this, almost the leading class in the show; and the prizes named above were won by Mr. LYE, gardener to the Hon. Mrs HAY, Clyffe Hall, Market Lavington. These were acknowledged to be the best Fuchsias ever shown at Bath, and they had to be conveyed over twenty miles by road. The group contained four dark varieties, viz., Charming, Doel's Favourite, Gazelle, and Elegance; and five light varieties, viz., Arabella, Blushing Bride—the finest specimen in the show, Schiller, Rose of Castille, and Marginata.

—— OXALIS BOWIEI. — This brilliantly coloured Oxalis is grown as a pot plant for conservatory decoration at Preston Hall, Maidstone, and can now be seen in full bloom, flowering freely, and producing numerous umbels of large and richly-coloured flowers. It is one of those fine old plants that, though much neglected, is yet far too valuable to be allowed to die out, and though rarely met with as a pot plant it is yet pleasant to find it is not altogether forgotten, and that it is well cared for by Mr. BRADLEY at Preston Hall. Its hue of colour is particularly striking when mixed with other plants.

—— GRAPE SPORT AT PRESTON HALL, MAIDSTONE.—One of the vineries at Preston Hall affords just now an excellent illustration of eccentricity in vegetable growth, and adds another instance to those already recorded of the irregular character taken by sports both in fruits and flowers. On January 26 last, Mr. BRADLEY, the gardener at Preston Hall, inserted in a strong rod of a Black Hamburgh Vine four buds of the common White Sweetwater Grape. The first bud was put in about 3 feet up the sloping glass roof, and the remainder were put in at intervals of about a foot. Of the buds so inserted one died and three grew, and two have produced a bunch each. One of the bunches has the exact character of the common Sweetwater, and the other is exactly like it in the build of the bunch and size of the berry, but the colour is quite black. In appearance it is a black Sweetwater, having the flavour of the latter with the colour of the Black Hamburgh. The bud bearing the black bunch is the lowermost one, and it is about a foot or so above a lateral bearing a bunch of Black Hamburgh Grapes. An inspection of the lateral shows beyond doubt that it has sprung from a bud, and it is not a shoot thrown out by the Vine into which the bud was inserted. Both Mr. BRADLEY and his foreman took part in the budding process, and they are prepared to assert that the buds were those of the common Sweetwater, and that no confusion occurred. Whether the sport will retain its present character remains to be seen, and doubtless Mr. BRADLEY will test this in various ways. It is both a curious and interesting phenomenon, and is a matter of considerable interest in the immediate neighbourhood.

—— LOBELIA FULGENS.—At Preston Hall this fine plant is found so useful for cutting from that Mr. BRADLEY has adopted the practice of planting quite a bed of it in a warm sunny spot, so as to get it as early in the season as possible, and another in a cool and shady place, so as to have a later harvest of flowers. This is found to answer remarkably well in practice, and by following this plan a good succession of bloom is had.

—— WOOLHOPE NATURALISTS' FIELD CLUB.—The last field meeting of the year will be held at Hereford, for a foray among the funguses, on Thursday, October 3. An exhibition of funguses will be held in the Museum Room, at the Free Library; members and gentlemen are requested to send as many specimens as they can find, on Wednesday, October 2, that they may be properly named and arranged for study. There will be a meeting on Wednesday evening, from 8 to 10 o'clock, for this purpose, to which members studying Mycology are especially invited. The foray will be made on the lawns of Sufton Court, and on Backberry Hill, and immediately on the return a meeting will be held in the Woolhope Room, for the election of officers for the ensuing year, and the transaction of the ordinary business of the Club. The dinner will take place at the Green Dragon Hotel, at 4.30 P.M., when some edible funguses will be served, cooked from the Club's recipes. A *soirée* will be held the same evening, at 5 P.M., at the house of the treasurer, THOS. CAM, Esq., to which he kindly invites all the members present at the meeting. After dinner, or in the course of the evening, the following communications will be made:—"On the Mosses of Herefordshire," by the Rev. AUGUSTIN LEY; "On Corticium, with Observations on the Modes of Distinguishing the British Species, &c.," by M. C. COOKE, M.A., LL.D., &c.; "Remarks on the British Discomycetes," by WM. PHILLIPS, Esq.; "On a Species of Ustilago," by the Rev. JOHN E. VIZE. Mr. VIZE will also exhibit an unusually fine specimen of Æcidium ornamentale. There will not be any exhibition of fruit at this meeting, but members are kindly reminded that the Pomona Committee will be very thankful to receive good specimens of named varieties of the best kinds of Apples and Pears, as they become ripe, for making the originals drawings for the work; if they will be so good as to send them to the Pomona Committee, at the Free Library, Hereford.

—— COLCHICUM AUTUMNALE.—During the past week we have seen wonderful clumps of this plant in old-fashioned Kentish gardens, not only blooming freely, but also finely. It would appear that the moist, warm season has suited it; the bulbs made a strong growth, and they are now sending up rare bouquets of flowers.

—— EXTRAORDINARY CROP OF POTATOS.—Mr. THOMAS DRAYCOTT, gr. to T. T. PAGET, Esq., of Humberstone Hall, near Leicester, has this year grown some of SUTTON'S Magnum Bonum Potatos, and gives us the following particulars of the produce which he has just lifted:—From 100 roots the produce weighed 6 cwt. 2 qr. 2 lb.; one root weighed 13½ lb., and another 12 lb. 6 oz.; one root had forty-eight Potatos to it, and these, when put in a straight line, measured 15 feet; three Potatos in a line measured 26½ inches, one of them measuring no less than 10½ inches. The whole of the crop was sound and of excellent quality.

—— CENTROPOGON LUCYANUM. — This useful plant is much grown at the Maidstone nurseries of Messrs. T. BUNYARD & SONS, for flowering at Christmas, and again in spring. Young plants raised from cuttings taken in early spring, and struck in heat, are used for the purpose. When large enough they are potted into 48-pots, and treated as a warm greenhouse plant during summer. In the autumn they are placed in a stove, where they flower at Christmas. In early spring the plants start again into growth, and give another supply of flowers at Easter. A little liquid manure is given occasionally. Actually the plants are got into bloom with very little trouble indeed.

—— RIDGE CUCUMBERS. — SUTTON'S King of the Ridge Cucumber would seem to be far in advance of the Rocking Ridge Cucumbers usually grown for market. The fruits average 12 inches in length, are smooth and handsome, and are produced most freely. A few plants of this kind seen growing in a garden recently were literally over-burdened with fruit.

—— PLUMBAGO CAPENSIS.—On the occasion of the recent provincial show of the Royal Horticultural Society at Preston we had to remark on the great beauty of some admirably grown specimens of this fine old plant—such specimens, indeed, as are very rarely seen. Now we have to note the usefulness of the plant in a small state for autumn decoration, which we do the more readily, insomuch that its peculiar shade of pale porcelain-blue is none too common at this season. In the Chiswick garden there is a small batch of plants in 48-pots that are flowering most freely. Mr. BARRON raises the plants from cuttings struck in the spring, and grows them on in a stove temperature, each plant having four or five growths which come into flower together.

—— THE POTATO CROP. — Without any wish to speak in a way calculated to cause unwarranted alarm, or to forebode worse consequences than are likely to result from the unmistakable appearance, since our report was made, of the Potato disease throughout the southern, western, and greater portion of the midland counties, which we have traversed within the last fortnight, it is with reluctance we come to the conclusion that seldom, if ever, since the fell disease first appeared in this country has the attack been so virulent. Beginning as it

did this season much earlier than usual it was checked by the dry weather in July, and many of us were sanguine in supposing that if the summer had continued dry the visitation would have been principally confined to the earliest crops, and that the second early and latest would be less affected than usual; but the great quantity of rain that fell during the latter part of August over a great portion of the island, accompanied as it was by the close smothering electric atmosphere, has had the effect of reducing the previously green healthy tops to a blackened mass of putrefaction that shows the silent working of the insidious parasite. We hear many large growers say that the tubers are even now so badly affected that they intend to let the whole remain in for some weeks until all that are smitten are completely decayed, as they consider that the labour of digging and repeatedly going over afterwards necessary to separate the larger proportion of those that are affected from the few sound, will involve a greater outlay than the sound portion of the crop would be worth. This is anything but a bright picture, yet we fear it is not overdrawn. In gardens, where a limited space is devoted to the crop, we should urge their being taken up at once and the ground planted thickly with Coleworts, Winter Greens, or any of the Kale family. That will do something to make up, although imperfectly, for the loss of the Potatos. With a like view we would advise in all gardens, both large and small, a greater breadth than usual being planted with July sown Cabbages to come in early in spring, for the extent to which Potatos are evidently affected is such as to make their being scarce and dear in spring a certainty.

—— THE OBELISK.—As we write, the obelisk which bears CLEOPATRA'S name, but which was old before she was born, has been slowly lowered into its place on the Thames Embankment, midway between Waterloo Bridge and the railway bridge at Charing Cross. All doubts as to the appropriateness of its position must, we imagine, be now set at rest, and the great superiority of its present site to that at Westminster demonstrated. Seen in connection with the fine horizontal line of Waterloo Bridge and the adjacent Somerset House, it looks as we predicted it would do, nobly. From the north-western corner of the Embankment garden, where it is seen isolated but with a foreground of grass and trees, it looks equally well. From the bridges it also looks well, and it is only here and there that it seems out-of-place with the surroundings—a defect due to the surroundings and not to the Needle. Although we believe of smaller proportions than the obelisk in the Place de la Concorde, at Paris, this one looks more imposing, and is not, as that is, lost in the vastness of the environing space. We sincerely trust the proposed addition of Brummagem Sphinxes will not be made.

—— THE COLORADO BEETLE IN RUSSIA.—Our correspondent at St. Petersburg writes us that the beetle has appeared at Soowalki in Russian Poland. The most energetic measures have been taken to prevent the spread of the insect.

—— RAIN-PROOF BEDDING PELARGONIUMS.—It seldom happens that the flowers of the plants usually employed for ordinary summer bedding are so thoroughly washed out by the rains at so early a period as they were at the end of August this season. Pelargoniums especially suffered in this way. In Hyde Park, where they are largely used, the majority of varieties after the drenching they received during the latter half of last month were almost as flowerless as if the trusses had been removed by hand. But there were a few exceptions to this, notably the good old Hybrid Nosegay Waltham Seedling, crimson; Pirate, scarlet; and Bonfire, crimson-scarlet. These were in very fair condition, and with a few days dry weather and bright sun promised to be again gay; and as these, in addition to their rain-resisting capabilities, are free, profuse flowering kinds, they are deserving of note as especially adapted for parts of the kingdom where the rainfall is greater than others. The well-known pink Master Christine had also stood the adverse weather much better than most kinds. The most effective beds, apart from those devoted to carpet plants exclusively, were those filled with Blue King Pansy and white-leaved Pelargoniums; these bid defiance to the rain, and were as gay as if the weather had been most propitious. Amongst coloured-leaved plants Iresine Lindeni, Coleus Verschaffeltii, and most of the Alternantheras have stood the wet bravely and kept their colours remarkably well.

—— HYACINTH GLASSES.—We have lately seen some of Messrs. STEVENS & WILLIAMS' (Brierley Hill Glassworks, Staffordshire, and Old Bailey, Ludgate Hill) new registered Hyacinth and Flower Glasses. They are decidedly a combination of elegance and usefulness, well proportioned, handsome in design and execution, and equally adapted for the room and window display of this most favourite flower. They are also adapted for holding cut flowers, where there is a desire to dispose of them in that home-like, informal, yet sufficiently artistic manner, which by its simplicity lends an additional charm, and which is lost in the over-done style now often adopted. These glasses are made in blue, amber, green, puce, ruby, pomona, and clear flint, nicely engraved with Fern leaves. The supports with which they are furnished are well adapted for the purpose required.

—— THREE PERSONS POISONED THROUGH EATING FUNGI.—The *Bury Free Press* reports the following sad accident:—

"Mr. MARSHLAIN seems to have devoted a considerable amount of study to fungi, and to have freely indulged in those he thought wholesome. On Monday night he gathered a quantity of fungi, known as colletus edulus [Boletus edulis], as also some of another species called [Agaricus procerus. Some of these they had stewed that night for tea. Next morning a man, knowing Mr. MARSHLAIN was interested in fungi, brought him from twelve to fifteen. Of these he threw the greater part away, retaining only three, which were fried for breakfast. He, SEYMOUR, and the deceased girl partook of these. The two men then went away for the day. On returning between five and six in the evening, Mrs. MARSHLAIN said her daughter had been very sick, and the child herself said that the Mushrooms had made her ill. She became worse during the evening, and at eight o'clock SEYMOUR became so unwell as to necessitate his going to bed. Later in the evening MARSHLAIN, up to that time feeling no evil symptoms, also went to bed, but was soon after attacked with sickness and all the symptoms of poisoning. The poor child died at half-past three the following morning. MARSHLAIN also was so ill that it was not until Saturday afternoon that he was able to leave his bed. SEYMOUR has improved since Friday, when it was thought he could not recover. Dr. MILNE stated that all three suffered from the effects of an irritant poison contained in the fungi, and that he did not see the child until thirty-six hours after she had eaten the article. She died from collapse caused thereby. At the inquest a verdict of death from misadventure was returned.

It is a misfortune that the names of the three fungi fried for breakfast are not given, as they seem to have been the poisonous ones. Boletus edulis and Agaricus procerus are not only harmless, but they are very palatable. Still the necessity for caution is shown by the fact that a correspondent of ours has just sent us specimens of Agaricus campestris which produced ill-effects.

—— BLACKBERRIES.—If the present abundant crop of Acorns offers food only for pigs, at least humanity may rejoice over a truly marvellous crop of the wild Blackberry. Journeyings hither and thither, through country lanes and fields, reveals the Blackberry in all its rich abundance, bushels upon bushels in the parishes; tons upon tons in the counties; how many throughout the country no one can tell—but it will be safe to say that for every ton that will become human food, several will be utterly lost. As long as the Blackberry can be thus had in abundance, for the mere getting, probably little stimulus will be given to the cultivation of any of the finer kinds, but it is at least something in its favour, that as an indigenous fruit, in a climate in which other fruits are uncertain, we can usually rely upon an abundant crop. Unfortunately the Bramble, in its wild state, is ever associated with negligence, untidiness, and a general aspect of carelessness. If all hedgerows were kept neat and trim, there would be few Blackberries to gladden the hearts of those who love the homely fruit. Perhaps the neglect of hedgerows in thus giving us a pleasant wholesome fruit, that is free as air to the very poorest, is not an entire evil, as, beyond the first production, few would care for that eternal monotony in our rural districts, if the trim, well-kept hedgerows were universal. To our myriads of town-dwellers in close courts and alleys, whose outings are confined to excursion-trains and steamers, or to van-rides to Hampton Court, what a glorious treat would it be if these could be conveyed right into our country lanes and fields at this time of the year, there to gather their baskets full of the ripe black fruit. This would indeed be a boon, and productive of more real pleasure than can be found just now in other directions.

—— THE APPLE CROP IN THE WEST.—Independently of the fruit reports which have appeared in the *Gardeners' Chronicle* from the various counties throughout the kingdom, and which no doubt correctly reflect the state of the crops, an opportunity for personal observation in the Apple-growing districts of Somersetshire, Herefordshire, Gloucestershire, and Worcestershire at once discloses the fact that in these counties, with the exception of isolated instances, the crop is this season not, in all probability, more than a third of what it was last year. Even the cider varieties are not bearing anything like the quantity they carried last summer. On the other hand, in most of the counties where Apples are less grown, the crop is considerably more than it was last year, and the fruit promises in most cases to be very large and fine. The more than ordinary rainfall has not only cleared the trees of insects, but favoured the development of the crop, which has not been checked for want of root-moisture or through the trees being overloaded. Nevertheless, we may safely predict that Apples will not be cheap the coming winter. The present season has also afforded confirmatory evidence, which those intending to plant Apples will do well not to lose sight of, that many of the old and—in some cases on account of their less taking appearance—despised kinds are much safer to depend upon than numbers of the newer, more fashionable sorts.

—— THE NEILL PRIZE.—We learn that this prize—the "blue ribbon" of Scotch gardeners—has been awarded this year to our valued correspondent and excellent gardener, Mr. WEBSTER, of Gordon Castle, whose horticultural career was given in our columns in 1875, vol. iii., p. 528. We congratulate Mr. WEBSTER, and we congratulate the Caledonian Horticultural Society on the judiciousness of its choice.

—— OUT-DOOR TOMATOS.—We can no longer write in the singular of the "Potato" disease. The dreaded Peronospora infestans, the greatest of fungoid enemies to vegetation, having conquered the whole of the Potato family, looked about for other food to slaughter, and found a too ready victim in the tender Tomato. A more general failure of outdoor Tomatos perhaps was never seen than this year greets the eyes of growers, and whilst here or there on warm walls a few plants may have escaped, in the majority of cases none are left alive. Especially severe is the loss to market growers, upon whom it falls with great severity. With these the Tomato is not only, in ordinary seasons, a profitable plant when a good crop is taken, but its growth requires the outlay of considerable labour and expense for sticks, straw, &c.; and thus the loss, when it is as complete as this year, is all the greater. We have heard of one grower who had 2 acres of ground planted with Tomatos, all carefully staked and tied, and yet all are gone ere a ripe fruit was gathered. Here we have one more difficulty added to the burdens the production of fruit and vegetables in this country lays upon the grower. Even more disastrous than in the case of the Potato, the entire crop seems to have been swept away, and in its stead remains a heavy pecuniary loss. Clever people, who are ever writing to the papers about the enormous sums we spend in the purchase of foreign vegetables and fruits, and regard this simply as so much given away for what we might grow ourselves, know nothing about the enormous failures that our cheerless and uncertain climate bring to the grower. This year gardeners have to lament over a very partial fruit crop, fearful destruction amongst Potatos, and now the almost entire failure of the Tomato plant.

—— PICEA NOBILIS.—A specimen in very characteristic form, showing its darkened polished bark most effectively, is well coned on the varied lawns of GURNEY BARCLAY, Esq., Leyton. The plant is not a very old one, being some 14 feet high; hence the six or eight large cones, averaging 1 foot in length and proportionate, stand forth very plainly amongst kindred trees.

—— FOLIAGE BEGONIAS are grown in the rockery or rustic fernery of GURNEY BARCLAY, Esq., Leyton, with great effect. Mr. DONALD, the intelligent gardener, informs us that such as are planted near the bottom of these imitation rocks, even though of the old Begonia Rex type, quickly climb up to the very top, and, as we observed, form in their travel leaves of remarkable proportions and "markings." The contrast existing between these and the lighter wrought or dissected Fern fronds is very pleasing.

—— FLOWERS OUT OF SEASON.—The Rev. T. W. MARTYN sends us a Primrose in bloom. The other day we saw a Hamamelis in full flower, and if we get dry warm weather after the rain we may expect more occurrences of this nature.

THE MUSTARD BEETLE IN THE FENS.

I trouble you with a short account of this beetle, which has again been doing so much injury to the white Mustard and other Brassicaceous crops in the Fens, at and near Ely. Probably no season passes but the little creatures might be found if sought after, but it is only in such a season as this, when they appear in their myriads, devouring whole fields of farm produce, that they attract the notice of the practical agriculturist. Consulting with old people, who knew the Fens sixty years ago (when Mustard was much more grown than it is now), I do not meet with any who remember the crops being then ravaged as they are now. The first notice I find of the creature is in one of those remarkable papers communicated by Curtis to the Royal Agricultural Society, and published in the third volume of their *Journal*, entitled "Observations on the Natural History and Economy of various Insects affecting the Turnip Crops, &c." He there says of this insect, at p. 314 :—

"CHRYSOMELA BETULÆ?—I also discovered in July on the back of some Turnip leaves many small oval eggs, so deeply imbedded in the pulpy substance that in many instances the cuticle had burst on the upper side, so that the eggs, which were of a bright ochraceous colour, were perfectly visible ; the surrounding margins of the leaf were dried and of a dark brown colour. There were multitudes of larvæ with them, which had emerged from the eggs and were eating holes in the leaves. These larvæ can crawl about, having six pectoral feet and a pro-leg at the tail, the intermediate segments being very much produced like nipples on the sides ; they are of a smoky yellow colour spotted with black ; the head is black with short antennæ and four small feelers ; the first thoracic segment is dull, the second and third have four small black spots on the disc and the following only two, but larger : they are slightly hairy, and there is a line of brown tubercles on each side close to the spiracles from which the animal can protrude yellow shining glands when it is excited or put to pain ; these larvæ are, of course, very small at first, and never attain a large size, yet they eat innumerable holes in the leaves. I placed several upon a Turnip leaf and believe they entered the earth to become pupæ, for they soon disappeared. There is no doubt they change to a beetle of the genus Chrysomela, which belongs to the same family as the 'Turnip-fly beetle' (Altica nemorum), but it cannot leap, and it is far from improbable that these larvæ are the offspring of Chrysomela (Phædon) Betulæ, Linn., a brilliant shining blue or green oval beetle, with the underside, horns and legs black, and about 1½ line long, which I have often found upon Turnip leaves."

This was published in 1842, at which time it does not appear that the beetles had been observed in the Fens ; but when Curtis collected and republished his papers in 1860, under the title of *Farm Insects*, he adds to his former description that it had since been stated by Mr. Westwood in the *Gardeners' Chronicle* of September, 1854, that the little beetles which are attacking the White mustard crops in the Fens near Ely are the Chrysomela Betulæ.

It was in the year 1854 that the last (and for aught I ever heard the first) serious ravages were ever committed in the Fens by these little insects. Then, as now, whole fields of white Mustard were destroyed, and after devouring the contents of one field they would march in force to another, if haply there was one within easy reach.

Last year, after an interval of twenty-three years, they appeared again in some force in certain parts of the Fen country. In proof of this I quote the following paragraph from a local paper, published in August, 1877 :—

"ANOTHER DESTRUCTIVE BEETLE.—The *Chamber of Agriculture Journal* says :—'The blue-black beetles forwarded to us by Mr. George John Moore, of Elm, Wisbech, as the destroyers of Mustard crops and vegetables on an alarming scale in that neighbourhood are not a new species. We have seen them on Mustard years ago, but not in great numbers, as they have come now.' We have been favoured (through Mr. William Carruthers) with the following communication from Mr. Charles Waterhouse, of the British Museum :—'The little blue beetle which you sent is one of the Chrysomelidæ, and is Phædon tumidulum. I have just seen a large number of the same insect taken from an allied Cruciferous plant, Armoracia amphibia. It appears to be unusually common this year. The larva, which does the greatest harm to the plants, is a blackish grey grub, slightly speckled, about a quarter of an inch long. I believe the larva goes down into the earth to undergo its transformation ; but on this point I have not been quite able to satisfy myself. The perfect beetles will remain alive through the winter in roots of grass or any such convenient shelter, ready to attack a fresh crop another year. I fear there is no practical way of getting rid of them ; but perhaps the habits of the creature being known, some means may suggest itself to any one on the spot."

It will be noticed by the above extract that Mr. Waterhouse pronounces the beetle to be Phædon tumidulum (not Betulæ), and it would be a matter of scientific interest to have this mischievous insect, which has become to the Mustard and other allied crops exactly what its near relative, the dreaded Colorado beetle, is to the Potato fields of Canada and North America, properly and clearly identified. "Betulæ" strikes one as an inappropriate specific name for an insect which, so far as we are aware, does not feed on either of our native betulinous plants, the Birch and Alder.

This year a local paper contains the following paragraph descriptive of the ravages of the insect in Littleport and on Coleseed :—

"DESTRUCTIVE INSECT.—A small black beetle is committing sad havoc in this neighbourhood. It is known as 'Black Jack,' and displays a marvellous partiality for Coleseed. Mr. W. Smith, of Littleport, estimates his loss from the ravages of this pest last year at £1000, and this season it has commenced its destructive powers. Every acre of Coleseed has millions of these insects. They commence their work by feeding upon the stalk, and the pod of the plant withers. Ten or a dozen other farmers in Littleport will also be severe sufferers this year from the tiny, albeit powerful, enemy. Mr. Smith has sent a small box to several eminent seedsmen containing a quantity of these insects, and also to the office of the *Gardeners' Chronicle*, and those gentlemen who suffer from these destructive insects would be glad to learn through the press if there be a remedy that can be applied to prevent the progress of this curse upon their land."

The above is only a sample of what the insects are and have been doing in this Fen country during the present season. Farmers in all directions are complaining of injury to their crops of Mustard, Coleseed, Turnips, and Kohl Rabi.

From what I can learn from my agricultural friends and my own observation as to the course of the attack this year, it appears that about the time the white Mustard was coming into flower many of the beetles were seen upon the plants, but not in very great numbers. Then the beetle disappeared, and after a short interval (doubtless the deposit and hatching of their eggs) little hairy, dark-coloured caterpillars or grubs were noticed on the leaves, and as they increased in size devoured not only the leaves, but attacked the green cellular portions of the stalk and pods. After another short interval the beetles appeared again, this time in swarms, and finished what the caterpillars or grubs had left, leaving, in many instances, nothing but the dried, bleached stalks of the Mustard, and the "shapes" of the seed-pods containing but a few starved seeds. After this, the beetles having devoured all that was devourable of the Mustard and of all the weeds belonging to the same family, such as Charlock, but studiously avoiding the other corn weeds, would quit the field in which they first began to work, covering in their line of march paths and gateposts with their countless hosts. I saw a case the other day where the beetles, having devoured so far as they could a crop of white Mustard which had stood for seed, had proceeded in force to an adjoining field, which, happily for them, had been sown with white Mustard to be ploughed in for manure. Here they had attacked the field in the most methodical manner, and were proceeding across the field in a straight line, just as a gang of mowers would do in a field of standing grass. When I saw them they had marched about one-third of the way across, showing to a nicety the regularity of their march, having before them the green Mustard, and leaving behind them in strong contrast the black fen-land perfectly bare. Their tactics do not consist in dispersing themselves sporadically over the whole field, but in clearing off as they go, and not advancing till every particle of the Mustard plant first attacked has been eaten up into the very ground. I think 1 foot or at most 18 inches would be the extent to which those in the van would be found in advance of those in the rear. The effect of this was most curious. The beetles forming the rear of the advancing line were by far the most numerous, being engaged in finishing off the last fragments of the young plants. Here they were collected in dense clusters of several hundreds in each, and from their metallic hue, suggesting the idea of shining blotches or patches of tar having been spilt out of a ladle all along the line of their advance. It is difficult to account for their keeping together in this remarkable manner, seeing that they have wings, although I never saw them fly. One would think from their keeping so close together and advancing in such a regular line that their mode of progression was by crawling only, and yet this cannot be, because last year I saw numbers of them on the street pavements of the city of Ely, whither they must have flown from the surrounding fens.

They attack all our Brassicaceous or Cruciferous plants, although apparently giving the preference to the white Mustard, when they can get it. I have seen them this year on crops of white Mustard, Turnips, Coleseed, and Kohl Rabi, also feeding on Charlock ; and it is curious to see in a field of Kohl Rabi (which it is the custom here to grow in the same field, alternating with Mangel Wurzel) how completely they avoid the latter.

Perhaps some of your readers will say, But why tell us all about the behaviour of this mischievous insect without suggesting a remedy? This I confess myself unable to do. One thing, however, is certain—that the only way in which we can hope to battle successfully with our insect pests is carefully to make ourselves acquainted with their life-history, with the view of discovering their weakest point ; and another is, to encourage their natural enemies.

Now, as to their life-history, I have said before that the Mustard and the Colorado beetle are very near relatives. They both belong to the same family of Chrysomelidæ, of the great tribe Phytophaga, or plant-eaters. The habits of the Chrysomelidæ, at least in the active period of their lives, are exposed to the light of day and easily observed. The Colorado beetle is no exception to the rule, neither is our Mustard beetle. The former, like all other insects of its order, undergoes transformations in its growth from the egg to the adult or beetle state, emerging from the egg as a grub or larva, passing into the pupa or dormant state after about seventeen days of larval life, and then escaping from the ruptured skin of the pupa as a beetle at the end of ten days more. But the parent beetles' eggs and larvæ are all confined to the leaves of the plant, the beetles and larvæ feeding in broad daylight on the green parts only, and completing their transformations during the summer months. The pairing of the male and female beetles and the deposition of eggs also take place on the leaves. The only hidden features in the economy of the creature are those attending the transformation of the pupa and the hybernation of the last brood of beetles at the end of summer. With regard to the former the process is as follows :—The larvæ, when fully grown, and after several successive changes of skin, enters the earth, to change into the pupa state, forming a rounded cavity or chamber in the soil, the grains of which become somewhat compacted, so as to form a sort of fragile earthen cocoon. It remains in this state about ten days, emerging from the ground at the end of that brief time as a perfect beetle ready to commence a new generation. The hybernation of the beetles also takes place underground. Towards the end of the summer the last generation of the insect has been completed ; there then remain no eggs or larvæ on the plants, and the perfect beetles which survive do not pair (or at least lay no more eggs), but burrow their way beneath the soil, and there remain quiescent till the spring of the following year. This is briefly the life-history of the Colorado beetle, of which we know a vast deal more than we do of our native Mustard beetle, thanks to the Government of the United States having placed the investigation of the habits of insects injurious to agriculture in the hands of a State entomologist, whose duty it is to make himself ac-

quainted with the insects injurious to agriculture, and advise as to the best means of destroying them or at least diminishing their ravages. We may safely conclude that the life-history of the Mustard beetle follows closely that of the Colorado beetle. The periods between the different stages of development may differ, but the cycle is the same. Fortunately for the Mustard growers, our beetle only goes through one complete life cycle in the year, whereas we are told that the generations of the Potato beetle are several in the course of the same season.

Then, as to the encouragement and multiplication of their natural enemies, at present it does not appear that any of our small birds prey upon either the larvæ or beetles, which may be probably owing to a disagreable smell they emit, and which becomes quite perceptible when a number are collected and put in a box. Here, again, the experience with the Colorado beetle is curious and suggestive. We are told that for the first year or two of their appearance in a new district the insectivorous birds and parasites and predacious insects seem not to find out the palatableness of their new prey, but they gradually became accustomed to it, and afterwards increased in numbers in proportion to the increase of their victims. At first none of the domestic poultry, with the exception of ducks, would touch the insects, probably on account of the acrid fluid proceeding from them; but afterwards fowls learned to feed upon them, and would devour immense quantities. The rose-breasted grosbeak, which now renders great service by the numbers it destroys, and was formerly a scarce bird in the West, became common after the invasion. But the most effective destroyers were found to be members of the insect class, particularly a small parasitic fly, from the eggs of which, laid in clusters on the neck of the larvæ, maggots are soon hatched which penetrate the skin, and kill them by devouring their entrails. Six species of ladybirds also destroy vast numbers, both the ladybird beetles and their larvæ eating the grubs on the plants. Besides these several predacious flies, beetles, wasps, and bugs have been found preying upon the beetles and their larvæ.

Probably it is in some such way as the above that our Mustard beetle is kept under, and it is only on the temporary ceasing of the operation of these natural checks that the insects now and then cause the farmers any trouble. Even the American Waterweed (Anacharis Alsinastrum), which at its first appearance invaded so fiercely our rivers and drains till it became a subject of alarm to our drainage interests, has lately, in some mysterious way which has never yet been explained, but probably owing to the action of natural checks, been reduced and kept within reasonable bounds.

In addition to these natural checks there is another way of putting a stop to their ravages, and that is by giving up the cultivation of Mustard for a few years, and this I understand was one of the remedies which, in 1854 and the years following, had to be resorted to in those districts of the Fens where the beetles had got the greatest hold and were doing the most damage. *W. Marshall, Ely, Sept.* 9. [The beetle has been identified for us by Prof. Westwood as Chrysomela Betulæ. Eds.]

GROUPING OR MASSING PLANTS.

In forming plantations or belts of trees and shrubs it is usual, for the sake of securing variety, to employ numerous species for the purpose; and although this may in many instances be desirable, it is nevertheless attended with some disadvantages, inasmuch as if such plantations are left to themselves for a few years they become the scenes of a struggle for existence, where the weakest—although perhaps the most desirable species—must go to the wall. To prevent, as far as is possible, this result, an annual supervision is at least necessary; and even this, when attended to, is not always productive of a satisfactory result. Plantations of trees and shrubs composed of deciduous as well as evergreen species seldom present a satisfactory appearance, during the winter months at least, and the question arises as to whether it might not be better, more particularly in the vicinity of the mansion or residence to select what might be considered as the most suitable species, having due consideration as to soil and situation, and group each by itself. By doing this it may happen that what is lost in the way of variety may be more than compensated for by the production of a better general effect at all seasons of the year.

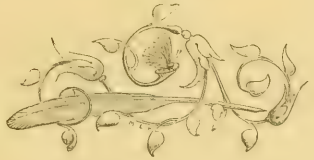
Single specimens of coniferous and other ornamental trees, when judiciously placed and well developed, are often exceedingly effective. Where circumstances permit, a group of such trees have a grander effect; but this effect is often found to be so marred, or altogether destroyed by the circumstance of their having been planted so closely, that the graceful outline of each plant has been more or less interfered with. And it is consequently quite necessary to take into consideration the probable dimensions which the trees will be likely to attain to, and allow space for their full development. This space may, if desired for the sake of immediate effect, be planted with some fast-growing common species, which will also act as nurses to the plants intended to ultimately form the group, and which could be gradually removed as their service in this respect became unnecessary.

With regard to hardy herbaceous plants, annuals, &c., the advantage of massing is very apparent; and it is possible that the practice of growing isolated specimens of these plants upon what was known as the herbaceous border, and the indifferent effect mostly produced by the same, may have tended to bring upon this department the neglect which it has so long experienced. Many species, however, of hardy plants, which in former times found a place in this department of the garden, however interesting they might be in a botanical point of view, were nevertheless hardly worthy of culture as ornamental plants. But on the other hand the effect which can be produced by the massing of some of the old and now neglected species, must necessarily be seen to be duly appreciated.

On the artificial rockwork such species as the Aubrietia, Myosotis, and the early-flowering dwarf Phloxes, &c., are very much at home. But they are possibly even more effective when massed or grown in beds in the spring flower garden, and the time during which they remain in flower is also very considerable; while many of the tall summer-flowering varieties of the Phlox are exceedingly beautiful and effective when occupying beds of considerable dimensions. A long line or bed of the graceful Dielytra spectabilis is a very attractive and beautiful object, while an isolated plant on the margin of a shrubbery border—where it is now mostly to be found—is unlikely to attract attention.

Many of the Delphiniums, Salvias, Campanulas, and other perfectly hardy plants, produce a grand effect when grown in masses of considerable extent, and the only circumstance which prevents them from competing favourably with the Pelargonium and other kinds of summer bedding plants, is their somewhat circumscribed period of flowering.

Hardy annual flowering plants are generally regarded as somewhat weedy in their aspect, and doubtless some of them grown in isolated plants or patches merit the uncomplimentary epithet; but at the same time many of them when grown *en masse* are exceedingly effective, such as some of the greatly improved varieties of the Phlox Drummondii, Dianthus Heddewigii, &c., which form splendid beds in the flower-garden and are quite as enduring as to length of time during which they remain in full beauty, as the ordinary run of bedding plants, which, including the finest Pelargoniums, when seen as isolated specimens in the trial ground at Chiswick and elsewhere, frequently fail to convey an adequate idea of their merits as bedding plants. *P. Grieve.*



Home Correspondence.

The Pleasure Grounds at Kew.—I am induced to address a letter to you in the hope that the attention of the authorities may be called to the present state of the trees (chiefly Beech) in the grounds at Kew, and to the young trees lately planted there, apparently with the purpose of filling up vacancies caused by the death and decay of those trees which once were an ornament. A large number (possibly a fourth) of all the old trees should, in my opinion, be removed; so many are actually dead, so many dying, and so many unhealthy, that the remainder are injured in every way. The young, lately planted trees can get neither light, air, nor nourishment sufficient to insure healthy growth or ripened wood. The state of the trees in Kensington Gardens, as commented on by you, warrants a timely interference at Kew also. The gardens and grounds of Kew are unequalled in beauty, the collection of plants is excellent, and, except in the above matter, the gardens are so well kept and tended as to be above all praise. *A Frequenter of Kew Gardens.*

Anthurium Dechardi—Pothos cannæfolia.—There seems some confusion about this plant. When I described Anthurium Dechardi and noted its affinity to Spathiphyllum, I knew the old Pothos cannæfolia or Spathiphyllum cannæfolium, a fine plant of which is cultivated at the Jardin des Plantes, and which was sent in 1839 from Berlin by M. Otto. This plant does not resemble A. Dechardi. It has long leaves like those of a Canna, and spathes green upon both surfaces. In 1871 the Museum received from Kew another Aroid under the name of S. cannæfolium, which seems to be near the plant figured in the *Botanical Magazine*, t. 603. Lastly, at the last fortnightly exhibition in the Champ de Mars M. Chantin showed an Aroid belonging to the genus Anthurium very different from the two plants above mentioned, and called Massowia cannæfolia. But Professor Koch seems nearer the truth when he says that Anthurium Dechardi is a Massowia distinct from M. cannæfolia, Koch, and a new plant. I cannot decide without further evidence upon the difference, specific or varietal, between this and the old Spathiphyllum cannæfolium. Suffice it for me to know that the jury at Ghent awarded a first prize to this fine and new plant, a verdict supported by general opinion, and which the *Gardeners' Chronicle* has registered on several occasions. I may here add that the plant will flower better if water be very sparingly given in summer, so as to give the plant a rest before starting it again for the flowering period in winter. Anthurium Dechardi, when I saw it for the first time on the borders of the Guatiquia in the llanos of San Martin in the oriental Cordilleras of Colombia, formed large tufts covered with fragrant white flowers. In the shade the plant was not nearly so full of flowers. By bearing this observation in mind cultivators will be able to secure a larger proportion of white spathes. *Ed. André*, 67, *Rue Blanche, Paris.*

Deer in Plantations.—Will your correspondent, Mr. Robert Greenfield (p. 282), kindly give the extent of the parks at The Priory, Warwick, and say whether he has any deer in any of his parks? I find deer most troublesome in breaking trees, &c., as they will jump and cross fences, &c., where neither cattle, sheep, nor pigs will cross. Perhaps Mr. Greenfield at same time would say what kind of ornamental trees or shrubs are mostly nibbled. Being about to plant largely I should be glad of any information Mr. Greenfield could give me. *Thomas Capers, Maidenhead.*

The Spelling and Pronunciation of Plant Names.—One of the difficulties attending the gardening profession is the acquiring the names of the vast and varied number of plants under its care. It is a source of wonder to outsiders to hear the "langnebbit" words expressed, but a greater, when it is remembered that the majority of gardeners do not know the meaning of them. We generally manage, however, to get names to the most of our collections; but how often are we sure that the pronunciation of written, or the spelling of pronounced names, is correct? The following instances show how difficult this task is:—I have heard "Clematis" pronounced "Clemátis," "Clema*i*tis," and "Clem*a*wtis." Again, "plant" is often pronounced "plawnt." My English dictionary helped me in both these cases, but, of course, cannot in all. On the other hand, the fact that the apparently unmistakable word "Potato" can be legally spelt "ghoughphtheighteteau," shows how wide the spelling license is. Most gardeners remember having been "nettled" over this subject, and would have been inclined (if they had known of it) to advocate spelling reform. Has anything been done to assist beyond accentuation marks? If not, is it not possible to use phonetic aids? *Jan.*

A Relic of Mrs. Charlotte Smith.—Charlotte Smith was the writer of *Flora's Horologe*, some charming verses descriptive of the sleep of plants; therefore a short account of a very interesting relic of hers which came into my possession by mere chance a few days ago may not be out of place. There is a sort of Noah's ark shop in this village—a place where all kinds of articles are sold, and on going there one morning for a paper I saw a pile of ancient-looking books and pamphlets on the counter. A particularly yellow partly torn work arrested my attention, and I took it up. I found it was a copy of Charlotte Smith's sonnets, published in 1786, dated Woolbeding, the 22d of March; and I soon perceived that it was enriched with very copious notes by the authoress. Nearly every sonnet had some written observations in a clear female hand, stating where the ideas were borrowed from, and how the particular sonnet had been received by the public or the critics of that day. Many are corrected and interlined, with a view

no doubt to a future edition. The twenty-third has the following note :—"A great favourite with all the critics (but Stevens), particularly Hayley and Huntingford." The twenty-second has "exquisitely pretty in some lines, particularly the eighth and ninth," written at the bottom of the page ; and sonnet twenty-one bears record, "very well ; the eighth line borrowed without acknowledgment, and the closing thought hackneyd." Another has a footnote of, "Griffins—my own—Miss Collins." One feels at first inclined to wonder at the authoress having so embellished her own productions, but the copy in question is evidently a spare one, on which Mrs. Charlotte Smith must have jotted down her own opinion of her sonnets as well as those of the public, and as Woolbeding and Liss are not very distant from each other, and the shopkeeper I purchased the copy from is a buyer of old books, I am disposed to believe that when the authoress left Sussex some of her effects were sold, and that this copy of her sonnets ultimately found its way to Liss (a hundred years afterwards) as waste paper. Sussex is rich in poetical memories ; Otway, Collins, Shelley, Fletcher, were born there, and Woolbeding, where Charlotte Smith resided for some time, is one of the most lovely villages I have ever seen. *Helen E. Watney.*

Royal Tree Planting.—I have only to add to my former communication respecting the two Oaks planted on the occasion of the Royal marriage that so far from their having died they are now healthy flourishing trees about the goodly height of 18 feet. I know the matter of one of them having died was mooted at a Town Council meeting by one councillor about two years since, but this was immediately and emphatically contradicted. No proof of its having died was offered, but, on the contrary, ample proof was given by myself, the superintendent of the park, and others, that the remark made was entirely without foundation ; and I had hoped the matter would not have been alluded to again, for of course the chief interest centred in the Royal trees would be lost if their identity was uncertain or could not be established. Your correspondent will, I am pretty certain, readily see this. *W. H. Rogers, J.P., Southampton.*

Yucca Aloifolia variegata in Bloom.—A plant of the above, standing 6 feet 6 inches high from the floor, and well furnished to the top of the pot, is now bearing a fine spike of bloom. It is growing in the conservatory, in a position where it receives a fair amount of sun. It was along with another cut from the top of a plant that was become naked to about 2 feet above the pot ; they were rooted through a piece of turf before being taken off. This was fixed close under the leaves in March, 1875, the plants in the meantime being kept in the stove, and after they were cut and potted they were plunged in the same house till they had formed a good supply of roots, when they were taken back to the conservatory, where they have since remained. I forward you a bloom from the plant in question ; there are about 200 similar to it on the spike ; the flowers, which are of a creamy-white and bell-shaped, are borne on small shoots from the spike, and have the appearance of a very large Hyacinth spike. I should like to know if it is a common occurrence for a plant of this particular kind to bloom. [No]. *Jas. W. Brunskill, The Gardens, Headingley House, Leeds.*

Old Fuchsias.—I can so far support what Mr. Cannell has stated in reference to Venus Victrix and other Fuchsias, as I remember when I went to work in a garden, in 1849, where the first-named was then a plant of more than a year old. Dr. Jephson was introduced later, and when I recollect what Dr. Jephson was like, and how very charming the "Venus" was, I am not so certain that we have made great strides in the production of light Fuchsias during so many years. I regret that I cannot now recall to mind the best red kinds of that day, but I remember that the old Riccartoni and globosa were then favoured sorts, and that they were grown in the form of standards such as are never seen in this degenerate Fuchsia age. I well remember a noble standard of the old coccinea with a stem as big as my arm and a head like that of a Mountain Ash growing in a huge tub. In spite of the efforts of Mr. Lye and a few other growers, the Fuchsia seems to be one of those "dogs" that has had its day. More's the pity! *A. D.*

How to Dispose of House Refuse.—I have now for three years carried out the system of cultivation recommended by me in *National Health and Wealth*, Part I. (Poole, 12A, Paternoster Row), and each year has afforded full confirmation of its truth and correctness. The system consists in the right disposal of the entire house refuse combined with alternate cropping, and with the immediate succession of one crop to another on the same ground. This alternate cropping and immediate succession are rendered easily practicable by the ready use of the manure derived from both liquid and solid refuse. The whole extent of my little garden is 20 perches, of which 6 perches are occupied with sheds, paths, and a good run for twenty fowls, so that only 14 perches are actually under cultivation. Out of this small plot, however (to say nothing of the produce of 300 Strawberry plants and of a number of Currant and Gooseberry bushes, and of four or five small Apple trees), I have year after year had a good supply of vegetables for the table of not a small family every day of the year. The history of one of these 14 perches of ground will serve to show how this large produce has been raised, and to some extent will illustrate the system. I give it in the hope that through your paper and its readers many working-men may be led to follow out the system. My servant who does the work assures me that an average of two hours a-day is all the time required for manuring and working the ground in the way I am about to describe, so that a working-man might out of hours with ordinary industry do the same as he has done. Through the late winter there were standing on this ground seventy Broccoli plants. These were in five rows, 2½ feet apart. In March the spaces in the rows were forked, each space received about 20 lb. weight of earth manure, and in it early Potatos were planted. Early in May the Broccoli with fine heads were cut, and the stalks pulled up. As each row was cleared the spaces between the rows of Potatos were forked and manured as in the former case, the Potatos were earthed up, and a drill of Turnips sown. The Potatos (about half a sack, thoroughly sound and good) were raised in June and July, and in their removal each space between the rows of Turnips, prepared as in the two former cases, received a row of fourteen Savoy plants with a Lettuce between every two of them. The Turnips have proved to be a very fine crop. For a month past they have been drawn for the table six days a-week ; more than a third are still growing, but are to-day to be pulled up and buried for future use. On this being done, the ground in which they have grown will receive rows of fine Cabbage plants, the seed-bed of which has been the earth thrown out of the trench dug for Celery. The Lettuces were a fair crop, a few of them weighing 26 oz. The Savoy plants are growing well. "Much food is in the tillage of the poor." Every possessor of so small a garden as that referred to, may do as my servant does, and at the same time, without cesspool or sewer, dispose of the entire refuse of a family of ten persons. *Henry Moule, Fordington Vicarage, September 5.*

Potatos.—From the year 1845, when the disease broke out first, I have never known my Potatos sounder than they are at present. I have dug up more than half of mine, and there is scarcely a bad tuber among them ; the crop for so dry a season is very good. The sorts I use are Royal Ashleaf and Veitch's Ashleaf, Fenn's Bountiful, red kidney, Gryffe Castle, a sound white Regent, ripening a month before the York Regent—it is a short-haulmed Potato, good cropper, and ought to be better known. It is not a handsome Potato, but of excellent flavour. The four above-mentioned are always sufficiently ripe to come out by August 7. The other Potatos here are the Cobbler's Lapstone (the original sort) and its two congeners, Yorkshire Hero and Taylor's Yorkshire Hybrid. The above are the only sorts which I keep. Last autumn I washed and limed all my Potatos at digging time, both for seed and table, and have to thank Mr. Tillery for the excellent suggestion of lime. Lime not only burns off any spawn or mycelium resting on the tubers, but keeps the tubers dry and from starting their scions prematurely. As soon as I saw this year the spawn on the leaves, as the skins adhered firmly to the Potatos, I cut off all the haulm to the ground, to prevent communication by the stalks. If the stalks are affected, the sooner you cut off the haulm the better. The Rev. John Brymer, of Child-Okeford, gave me a tuber of each of the following, which he had from Mr. Carmichael—Breadfruit, good cropper, sound, but not good ; Schoolmaster, sound, good cropper, and good ; and Table King, very unsound, good cropper, and not good. I planted early this year, beginning January 1, and commenced digging September 1, but all the sorts above might have been taken up by August 7. Keep early sorts, plant early, dig early, and wash and lime the tubers. *W. F. Radclyffe.*

The Potato Disease.—I fear little good will follow from any further discussion of this topic on the basis of Mr. Clarke's colour theory, to which he again refers at p. 304. His observations appear to be chiefly based upon the reports of the single trial of Potatos conducted with such indifferent results by the Royal Agricultural Society in 1874. My own experience, extending over many consecutive years, of literally hundreds of kinds of all shades and colours, tells me that, so far from colour assisting to give Potatos any exemption from disease, the worst as a rule are found amongst coloured kinds. The partial exemption that has been found amongst such kinds as Magnum Bonum (there is no improved Magnum Bonum), Gleason's Late (a sort that proved so objectionable as now to be rarely grown), Flourball and Victoria, is not in any sense due to colour, but solely, as far as my experience shows, to a more woody formation of the stems of the plant ; but this year every kind here named is more or less diseased—Victoria fearfully so, and two years since Flourball gave crops in this locality half diseased. Magnum Bonum—having regard to the extent of its produce—is the least affected kind this year ; but one or two more such attacks of the fungus as it has been called upon to resist this season may soon take it out of the very limited category of disease-resisting kinds. Mr Clarke calls Peach Blossom a Fluke—his classification is a "fluke" certainly ; and Gleason's Late has no more relative connection with the trade "fluke," than a French Crab Apple has with a Ribston Pippin. Unfortunately, Mr. Clarke's assertions and deductions are by many people regarded as gospel because they came from a scientific man ; but they rest simply upon this, that a theory has been set up without any good basis. *A. Dean, Bedfont.*

Grape Duke of Buccleuch.—There is at the present time (viz., September 2) in the gardens of A. Ellis, Esq., The Brand, Loughborough, a fine young Vine of Thomson's Duke of Buccleuch with eight bunches, averaging 3¼ lb. each, with fine large berries measuring 3¼ inches in circumference. The Vine is not quite four years old. There are also some very fine examples of the Madresfield Court Black at the same establishment, which reflect great credit on Mr. Hamshere, the gardener. *E. Fancourt.*

Vegetable Marrows, &c.—I have this day (Sept. 5) cut two Marrows of the long green kind, their weight being 27 and 29 lb. The one was 2 feet 1 inch in length and 2 feet 6 inches in circumference ; the other was 2 feet 3 inches in length and 2 feet 6 inches in circumference. Is it not rather unusual size and weight for Vegetable Marrows ? I have also cut some Early London Cauliflower that weighed 5½ lb., close and solid heads. I am sorry to say the disease is in the Potatos very bad. Three parts of the American Rose are quite rotten, but the early kidneys are mostly all good. In former years the American Rose has been the best to withstand the disease, but this year they are worse than any sort. *W. Stevens, Stanage Park Gardens.*

Summer and Winter Grapes.—In reference to my remarks in the *Gardeners' Chronicle*, July, 1875, p. 110, on the Cannon Hall Muscat and others of the same race, giving summer and winter Grapes on the same tree, I herewith send you specimens of young fruit-buds taken from Vines growing in the open air. From one of these Vines I have plucked off a great number of promising bunches, in all respects as good as these specimens. I also find there are several in my list of Grapes suitable for greenhouse culture which will produce summer and winter Grapes in any common greenhouse worked at 50° of temperature. If this is properly attended to there will be no need to begin to force early Grapes in October and November. I also believe there are many varieties which might be kept perpetually growing and fruiting for many years. *W. Prestoe.*

The Judging of Melons.—I was pleased to read Mr. Hinds' sensible remarks on this subject (see p. 315). No doubt a Melon is nothing if destitute of flavour ; but as much may be said of Grapes, Peaches, Pears, Apples ; and, as yet, in none of these fruits is flavour alone held to supersede or override all other qualities, as it so often does in the case of Melons. Some striking instances of flavour manias in good judges have lately come under my observation. Melons of good size, handsome appearance, and excellent flavour, have in several cases been set aside and passed over for small, scrubby-looking fruits, totally unfit for dessert at any dinner-party exceeding two in number, for their high flavour. Not only is flavour, as Mr. Hinds truly says, a matter of taste, but it is one of those points that hardly any two people have the same appreciation of. What judge that has had to taste a score or more Melons at a censorship has not got bewildered among the flavours, notwithstanding the help or hindrance of sundry glasses of sherry, or drams of whiskey? It is hardly too much to say that at many of our larger shows the judging of Melons becomes a mere lottery, at which the best Melons may or may not win. No doubt Mr. Hinds' suggestions to have three or more classes for Melons would do something to remedy the present unsatisfactory mode of judging Melons. Weight, size, form, finish, general appearance, are all as valuable properties in a Melon as in a Pine-apple. Why should they be practically ignored in the former fruit and fully recognised and rewarded in the latter? A handsome Melon is only second on the dessert-table to a handsome Pine, and yet censors —by their awards—too often ignore every quality of Melons but flavour. But as classes for weight, &c.,

would be impracticable at the majority of shows, the system of judging Melons by points, in the same manner as other fruits, should be generally adopted. While yielding to no one in the appreciation of the vital importance of good flavour in Melons and all other fruits grown to be eaten, I have always tried in awarding prizes to allow due weight to such secondary qualities as size, form, and finish. In regard to these, medium-sized, regular formed, and beautifully finished fruit are the best. Allowing then two points for flavour, and one for each of those qualities that enhance the value of Melons for the dessert-table, there will seldom be found much practical difficulty in coming to a satisfactory conclusion. The present law of rewarding flavour alone not seldom allows the worst grown Melon to win; for it is a fact familiar to cultivators, that stunted fruits have not seldom a piquancy of flavour that is seldom found among those of a more normal character, and that have been subjected to little cultivation. *D. T. Fish.*

Duke of Buccleuch Grape.—Calling in a few days since at the Wilderness, near Reading, Mr. Lee the gardener invited my attention to this Grape, growing in a mixed vinery on its own roots. The growth was all that could be desired, and the produce a miserable little bunch, berries of fair size and ripe, skin thin and flesh sweet, juicey and flavourless. In the same house is growing a Vine of the Golden Queen, one year older; this is carrying on three rods about thirty bunches of good size, good colour and rich flavour. Now here are two new Grapes put into striking contrast, both growing naturally and under conditions of ordinary house cultivation—the one absolutely valueless, the other a first-class Grape, almost equal to the Muscat of Alexandria, but having a richer tint and producing a splendid crop. Gardeners who have plenty of glass at disposal may afford to spend a season or two in grafting and experimentalising to find out what stocks are most suitable for the Duke; but amateurs who want to get a crop of good Grapes with little trouble will find, if Mr. Lee's experience of Golden Queen be general, that this new Grape at least is one worthy of their attention. *A. D.*

Fuchsia Venus Victrix.—This Fuchsia was first "sent out" in May, 1842. In the *Gardeners' Chronicle* of March 5, 1842, there is an advertisement from Mr. Cripps, of Tunbridge Wells, stating that having purchased the entire stock of the above plant from Mr. Gulliver, gardener to the Rev. S. Marriott, of Horsmonden, in Kent, he will have plants of it to dispose of in May. In describing the plant he says: "The plant itself is of an excellent habit, with foliage about the size of F. gracilis, of which it is believed to be an accidental variety." It is rather singular Mr. Cripps could not give more particulars of its origin. *M. Saul, Stourton.*

Hardy Shrubs by the Sea.—I send you a spray of white flower cut from an outdoor shrub, which does remarkably well down at a place near Lowestoft, within a hundred yards from the sea. Soil nearly all sand with a very little poor peat. The shrub grows very compact, very like Ligustrum japonicum. At the same place is the Blue Gum tree, 15 feet high and 7 or 8 feet through, without shelter of any kind, planted four years ago, not protected. *J. Smith, Norwich.* [The shrub is Escallonia montevidensis, a charming plant, but of doubtful hardiness inland in severe winters. Eds.]

Foreign Correspondence.

Wild Plantain, Balisier, Heliconia, &c. — *Dominica.* — The leaf of this plant is much in requisition throughout the island. On market days the people may be seen coming into town with large bundles of the leaves, which they collect on the road-sides in the mountains. These bundles are sold to the bakers. Each loaf of bread before being put in the oven is wrapped in a portion of the Balisier leaf, and is thus preserved quite clean. The midrib of the leaf is made into mats, which are in very general use. In the houses of the peasantry this matting serves the purpose of partitions—a house may thus be divided into several apartments. It is also used for bedding, and indeed on most occasions where matting is required. The stem split into pieces is employed for curing sugar. Both the stem and midrib of the leaf contain a considerable proportion of tolerably strong fibre.

Mountain Cabbage Tree, Choux Palmiste—Euterpe oleracea and montana.—This Palm grows abundantly in the mountainous parts of the island, at an elevation of from 1500 to 2000 feet. The terminal bud of both species, the red and white Palmiste, furnishes an excellent article of diet, but the cabbage of the white is considered the most delicate. In coming across the country to market those of the people who wish to carry a load of the Cabbage Palm stalks to town for sale have only to leave the road, when they reach the Palm region, proceed into the forest for a short distance, and cut down as many trees as they may consider necessary, and from each of these the terminal bud is extracted. The sheathing base of the leaves, a tough elastic substance, is used for thatch and for making torches, the inflammable gum resin of the Sommier tree (Bursera gummifera), with slips of wood, being enveloped in sheets of this material. These torches are in common use in travelling after dark, and the people use them at night in catching crapauds and crabs in the forest. This elastic material is also plaited into ropes, having been previously torn into slips. When it is necessary to provide the means of carrying loads in the forest, bags are very quickly constructed of the leaves of this Palm; they do not however last long. If the tree should happen to grow on a rocky ledge, or close to a precipice, the slender roots are sent down for a long distance. These are collected and woven into baskets and havresacks, and are very durable.

Plantain.—The fruit of this most valuable plant may be considered the bread of the country. Little preparation is required: gathered from the tree and simply roasted or boiled it forms a wholesome and nutritive article of diet. It is of the leaf and its uses, however, that I now speak.

A full grown Plantain leaf may be 8 or 10 feet or more in length, and 2 or 3 feet in breadth. It is of light green colour, and when newly unfolded to the sun and unbroken it is a beautiful object to look upon as it waves gently in the breeze, but the leaf soon breaks up into strips, and becomes ragged in appearance. This leaf when thoroughly dry forms an excellent material for stuffing mattresses and making palliasses, and is much used throughout the colony for this purpose. Woven into pads it is very serviceable as a protection for the backs of horses and mules where crooks are required, and that is nearly on every sugar estate in the island. It is so soft and elastic that it would be difficult to find any other material to supply its place in any way equal to it, while it is readily procured at little or no cost. The Plantain leaf is largely made use of by bakers for the same purpose as they use the Balisier leaf—enveloping loaves of bread before being put into the oven. The midrib is used in curing sugar. In a medical point of view the Plantain leaf is a valuable resource—as a dressing for a blister it can scarcely be equalled. The young leaf is cut just as it has emerged from the centre of the stem, and still unrolled. In this stage it is of a pale yellowish green colour, and soft as velvet. When the blistered surface is to be dressed a portion of the necessary size is unrolled from the leafy cylinder, and sometimes a little fine olive-oil is smeared over it, and thus it is applied. The delicately soft, and to the feeling icy-cool leaf, applied to the blistered surface gives an amount of relief that to be fully appreciated must be felt. It has one drawback it is true—the leaf soon dries and shrivels up, but the roll is at hand, and the dressing can be renewed as often as required. For scalds and burns the Plantain leaf is the usual application among the people. *John Imray.*



Natural History.

Brown Owl (Surnium Aluco).—Local names: Brown owl, grey owl, ivy owl, beech owl, howlet, Jenny howlet, screech owl, tawny owl, hooting owl. —Trix aluco and S. stridula, Linn., *Syst. Nat.* 132, 133; Strix aluco, Temm., *Man. d'Orn.* i. 39; Ulula aluco, tawny owl, McGillivray, *Br. Birds*, 436. —This, next to the barn owl, is the most common species in the British islands. It is generally found in the wooded districts, and is probably more frequent in the northern counties. A lingering superstitious dread still prevails in the minds of many villagers respecting this bird, which causes it to be harshly persecuted as a bird of ill-omen. It may be difficult to account for this feeling except it be its hooting by night. Some time since we were passing by a village station when the train on which we were travelling was delayed. Upon inquiring the reason for this we found it was caused by an owl, which by some mischance had ventured abroad in open daylight. Not a few of the passengers, together with the officials, were alarmed at this unwarrantable intrusion in the booking-office. But this fearful persecution of one of our most harmless birds is carried on not alone by bipeds, but all the feathered tenants of the grove take an active part in this war. Hang up any owl in a parrot's cage on the margin of a wood; the result will be a ludicrous scene well worth the time needed to make the experiment. Probably a sparrow, as being the most prying bird we have at all common, will go near to find out what the peculiar object swaying to and fro on the bough may be; upon observing the strange and unusually large eyes blinking from the strong light, it will set up a loud scream and fly off to a safe distance. This is a signal for all the birds, small and large, within hearing to come forth. In a short time quite a large company are gathered round the cage, making a most terrific chattering noise. Should the starling be one of the crowd it will appear at first very bold, certainly one of the most noisy. This will go on until they are tired if the owl takes it as a "bit of fun," but if it becomes weary of this unpleasant scolding, and begins to snap at the foremost bird with its beak, away they fly to some convenient bough, chattering louder than before. This scene, difficult to describe so as to convey a fair impression, is really most laughable [particularly to the owl!].

The late Mr. Waterton studied this bird for many years, and has given a most interesting account of their habits. He says:—"This pretty aërial wanderer of the night often comes into my room; and after flitting to and fro on wing so soft and silent that he is scarcely heard, he takes his departure from the same window at which he had entered. I own I have a great liking for this bird, and I have offered it hospitality and protection on account of its persecutions, and for its many services to me. Amongst the numberless verses which might be quoted against the family of the owl I think I only know of one little ode which expresses any pity for it. Our nursery maid used to sing it to the tune of 'The Storm'—

'Cease, rude Boreas, blustering railer.'

I remember the first two stanzas of it:—

'Once I was a monarch's daughter,
And sat on a lady's knee,
But am now a nightly rover,
Banished to the Ivy tree;
Crying hoo, hoo, hoo, hoo, hoo, hoo,
Hoo, hoo, hoo, my feet are cold;
Pity me, for here you see me,
Persecuted, poor, and old.'"

Does it not appear remarkable that all our owls have each a distinct residence or some spot they certainly prefer to all others? To make this more plain, the brown owl selects some hollow gnarled forest giant, where if undisturbed it will roost for years, and it is said they refuse to breed except they can find a congenial home. We now remember a hollow Elm in the Earl of Lonsdale's park where a pair of these birds bred eighty years since. This tree has been entailed property for the owls, for they and their heirs in a long unbroken succession have tenanted this magnificent Elm tree for the greater part of a century.

Whilst the brown owl chooses by preference a quiet secluded home far away from the busy haunts of men, the barn or white owl, the "farmer's friend," settles down in some old outbuilding or ruined tower, often in a church-steeple, where it lives peaceably with pigeons, sparrows, jackdaws, and swallows. In a deep quarry of the red sandstone in Cheshire a pair occasionally breed in a deep hole; all around in the breeding season are a host of sand-martins and jackdaws, these, however, do not disturb the white owls.

Our farmers owe a deep debt of gratitude to the owls; their chief food, so far as we have been able to ascertain, is mice in the breeding season—they must destroy an immense quantity of the common field-mouse. They cast up the skin of the animals, and feathers of birds in pellets, like the hawk. They are exceedingly cunning, for they have a peculiar habit of hiding what they are unable to eat, until they are again hungry; but if it is decaying when they resort to the larder it is refused. We tested this as follows:—having discovered a mouse thus secreted by our favourite barn-owls it was removed

for two days, then when it was tainted we placed it where found; but the owls rejected it. The following evening we placed two freshly killed mice by the side of the decaying animal—these were eaten, but the original mouse was left untouched.

A fact which appears not to be generally known is mentioned by White: it is a most difficult thing to rear barn owls, unless a constant and fresh supply of mice can be procured, but the brown owls are easily brought up by hand, simply because nothing comes amiss—snails, butcher's meat, birds, rats, everything in the shape of flesh is food to them, nor are they at all squeamish about its being fresh, for offal is eaten greedily. In a wild state the superfluity of each meal is hidden away in the wood, often near the root of a tree; they first scratch up the soil with their claws, then depositing the bird, &c., cover all up. Mr. Jesse mentions the fact of the brown owl eating fish. "Some few years since, several young owls were taken from the nest, and placed in a Yew tree in Mr. Bree's garden. In this situation the parent birds repeatedly brought them live fish (bullheads and loach) which had been procured from the neighbouring brook, where these species abounded. Mr. Bree on more than one occasion found the same fish, either whole or in fragments lying under the trees on which he had observed the young owls to perch after they had left the nest, and where the old birds were accustomed to feed them. He adds it had always been a wonder to him by what method the owl contrives to capture the fish, being apparently a bird peculiarly unfitted for piscatory depredations. This fast was confirmed by the labourers employed to watch the fish pond in the flower-garden of Bulstrode. The gold and silver fish had been missed, and the Duchess of Portland, suspecting that the pond had been poached, ordered the gardener to employ men to watch it. The watchman soon ascertained that the common brown owls were the robbers; they saw them alight on the side of the pond, and there wait the approach of the fish, which they captured and devoured."

Nothing is more remarkable than the acute vision, which is displayed more by this species than the others. When flying rapidly over a field in the dusky twilight, they are enabled to discover their prey, and mice are not readily seen when running about the grass even in broad daylight.

> "The owl that, watching in the barn,
> Sees the mouse creeping in the corn,
> Sits still, and shuts his round blue eyes,
> As if he slept, until he spies
> The little beast within his stretch—
> Then starts, and seizes on the wretch!"

A striking instance of the usefulness of owls in this respect occurred several years ago in Somersetshire, when in the course of the summer, a countless host of mice having overrun the country so as to threaten the destruction of vegetation, their ravages were checked by the sudden arrival of a few owls, which came from all the surrounding counties to prey upon them.

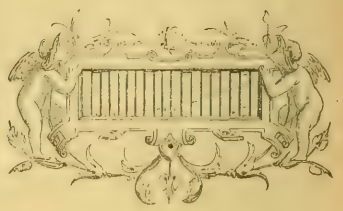
In a very simple manner Mr. Waterton encouraged the owls to come and breed near his residence. In his fascinating book he begins by stating the brown owl cannot be expected to take up his abode where no wood exists; then he tells us on examining the large and old Ash trees a particular fungus is sometimes seen growing on the trunk, yellow when young, and black when ripe. In process of time the fungus falls off, leaving a very faint mark to show where it has been. But the fungus has absorbed into its own parasitical being the very life of the tree, and the fresh living wood has become dead, soft, and cork-like. This dead wood may easily be removed with a mallet and chisel, and the hollow adapted for the use of the owl. The tree will receive no harm, but rather benefit from the operation, as the whole of the diseased portion will be cut away, and the sound wood removed from the influence of the decaying and therefore dangerous part. But Mr. Waterton derived both pleasure and profit from the careful study of these birds. He first persuaded a pair to take up their residence in the recess of an old ruined gateway that he could examine whenever he pleased. The owls soon became very tame; and when strangers looked into their abode and handled the young, they betrayed no fear. In this secluded ivy-covered spot several broods were reared. He soon learned, what has often been doubted, that these birds, unlike most others, breed at all seasons, as he found a batch in September, and another were successfully brought up in December. He also found out that it slept standing, and the noise often mistaken for snoring was the cry of their young for food.

When hooting the throat of the brown owl swells to an unusual size, but either each owl possesses a distinct note and hoots or shouts only in one key, or when, as is often the case in quiet, secluded, rural places, several are engaged calling at the same time, in answering each other's call, they hoot differently, some louder than others. Thus we have heard on the same evening one calling in A flat, another responded in B flat. As Mr. White thought, it was just possible they might be distinct species, though in the above instance it was scarcely possible. Owls seldom drink, but in our own species, people who partake heartily of large quantities of animal food do not require much water in confinement. Owls have been known to exist twelvemonths without water [?]. Probably this is not a solitary instance; it may be remarked in all birds of prey.

Owls, when flying, stretch out their legs at full length as a counterbalance to their large heavy heads, as they glide over a meadow in the shade of evening; it is a noiseless, even movement, very like the nightjar. As our people are becoming better educated the foolish superstition respecting the harmless owls as "birds of ill-omen" will rapidly disappear, and, instead, we shall find all classes making them objects of intense study; much that now remains in obscurity respecting their habits will be cleared up, for we know but very little more about them than was given to the world by our revered historian, Gilbert White. *R.*

Apiary.

PREPARATIONS FOR WINTER.—The working season of our busy bees is now quite over, and on each day of the next seven months recourse will be had to the stores of the hive for daily sustenance. The flowers in the fields now yield little honey—not sufficient for the bees daily needs. The bloom of the Ivy where it occurs plentifully is very welcome, and then we get no more productive blossoms until the Sallows shed their sweet fragrance around. The Crocuses and other early flowers yield to the bees little more than pollen, which is consumed, mixed with honey, by the larvæ of the bees. Every hive, if not already done, should be at once examined to ascertain the amount of stores it contains, and if found insufficient a supply should be immediately provided. A stock should not be trusted to winter without it has at the end of September at least 15 lb. of food in the combs, and indeed 20 lb. is not too much. My own stocks from artificial supplies are fast approaching that happy state: I am simply replacing with syrup the honey I extracted from the combs, the latter being returned to the hives. My syrup is made by boiling for a few minutes 2 lb. of loaf-sugar in each pint of water, thus for sevenpence I am enabled to replace 3 lb. of honey, taken from the bees, and syrup forms as good wholesome food as the honey. My hives (which are all frame hives) are provided at the top with feeding holes 2 inches in diameter, covered with a flat slab of vulcanite having minute pin-hole perforations; the vulcanites are so fixed that by turning them any number of the pin-holes that may be desired can be brought over the feeding hole according as the desire may be to feed fast or slow. All feeding should be done before frost is expected, and when time will allow slow feeding should be preferred; in my own case I am allowing two pin-holes, and through these the bees will take a full quart of syrup in each four or five days; the food is supplied them in the ordinary quart pickle bottles, merely filled and inverted on to the feeding stage, with nothing interposing between the vulcanite and the bottle. A piece of ordinary tin or zinc will answer the same purpose as the vulcanite. To place on the bottle, cover the mouth with a piece of tin, invert it on to the feeder and withdraw the tin, when the syrup will remain in the bottle until sucked out by the bees. Of course this plan can only be adopted with flat-topped hives; where straw skeps are in use a wooden platform must be fixed. A square of board having the necessary hole cut in it may be fastened on to the strip with four long screws, which will generally hold it tightly. One caution is necessary to be observed—the bottle must be securely covered from the reach of outsiders, or a ring of bees will quickly be found sucking round the neck of the bottle, and many and deadly battles will result. The advantage of slow feeding is that the constant influx of food induces the queen to lay, or perhaps it may be the workers to hatch the eggs and nurture the young, and on the presence of plenty of young bees in the hive in autumn mainly depends the welfare of the stock in spring. *Every bee now in the hive, except the queen, will in the natural course of events be dead by April*, hence the absolute necessity of encouraging the birth of young bees to replace them. If circumstances are favourable, breeding never ceases in the hive, and in fact when the queen is young and prolific, is only limited by the amount of space when the necessary heat is generated. If we look into a strong colony now, the weather being warm, we shall probably find a goodly number of bees between each pair of combs, and in all that space it is possible to rear brood; but if cold weather comes suddenly upon us the bees huddle closer together, and consequently the outside combs being bare of bees become cold, and if they contain eggs or young brood those of course die. It is astonishing what a small space the bees will pack themselves into when the cold is severe; empty cells will be taken possession of by the bees, who literally get into them as snug warm places, so that as well as the actual space covered by the bees being so limited, the number of available cells for breeding is further curtailed by the close packing. Were it not for these facts it would matter little whether the stocks were wintered with few bees or many, seeing that none of the early autumn bees live till the spring; but it stands to reason that if the autumn stock contains a very large population more bees will be bred in the winter, and consequently more available to do the work of the busy spring. *John Hunter*, 5, *Eaton Rise, Ealing.*



Notices of Books.

Memoir of the late Alfred Smee, F.R.S. By his Daughter. Bell & Sons.

There are many among the more earnest and active horticulturists who will remember the subject of this memoir and dwell on his memory with respect and regret. Full of energy and zeal his sympathies were always right and sound—if his precepts were not always of the most practicable kind. Alfred Smee lived in a world of his own, where all was pure and good, where knowledge was pursued solely for its own sake, where sordid and mundane considerations had the least, if any, place. He was a genius unfettered indeed by the rules of convention, but lacking the natural ballast which would have prevented him from erratic excursions beyond the lines that a scientific training ought to have laid down. Warm-hearted, enthusiastic, impulsive, Alfred Smee was apt to look fixedly, earnestly at one side of a question, and then to dart off with equal earnestness and enthusiasm to some other subject. In private life he was beloved, for he stuck to his friends, was ever ready to do them a good turn, and inspired every one with whom he came in contact with something of his own zeal and enthusiasm.

The present volume contains the history of his life as narrated by his daughter, and a particularly interesting history it is—showing in strong relief the prominent features of his character, not ignoring its defects nor exaggerating its merits, but treating all in a loving, respectful, appreciative spirit, very pleasant to read. Here we learn how in shoolboy days he signalised himself by thrashing a bully, obtained a reputation for love of animals. We are told also of his undistinguished career at St. Paul's School, where the strict routine of a grammar school in the pre-scientific era did but little to bring out his peculiar talents. At King's College, London, to which he was soon removed, however, the conditions were more propitious, and we find him at an early age distinguishing himself in chemistry and physiology, subjects which occupied so much of his attention in later years. At that time, King's College had no hospital attached to its medical school, and young Smee betook himself to St.

Bartholomew's Hospital to avail himself of the practical education which King's College at that time did not afford. Here his inventive faculties found exercise in the devising new and improved methods for the surgical treatment of fractures. In his twenty-third year he brought before the public his form of galvanic battery, which was a great improvement for certain purposes on all that preceded it, so much so that about £2000 worth were sold within a year, and it is still in use. At this period Smee became known for his researches in electro-metallurgy, and many who daily use plated goods or wear plated ornaments are little aware of the experimenter whose skill and observation rendered possible the manufacture of the articles in question.

A Cucumber that Smee coated with copper by his galvanic process was shown to Her Majesty, who was so interested or so curious that she broke the casting with her finger to see if really the Cucumber were inside. The coppered Cucumber is still in existence. We have not space, even if this were the place, to enumerate the many subjects which occupied Smee's fertile brain and evidenced his versatile talent, but we cannot help alluding to his researches on the Potato disease and its connection with aphides. Those who ridiculed Smee's notion never gave him credit for the immense labour he bestowed on his subject, and the care with which he investigated it. If the subsequent progress of science has shown him to have been in error, there is ample ground to show that there really is a definite connection between the aphis and the Potato disease, and the enfeebled condition induced by the attacks of the insect may well render the plant the readier prey to the fungus. We cannot here do more than allude to his metaphysical speculations and philosophical theories, except to thank his daughter for putting them before us in a clearer light than we had previousiy been able to see them. Nor can we do more than allude to his career as a politician, and his candidature in the Conservative interest for Rochester. The peculiarities of his character are very prominently brought out in this portion of the volume, and specially certain features which would have prevented him from ever being a party man in the restricted sense of the term. And this brings us to the later years of his life, when he tempered his previously unremitting labour and constant mental exertion with occasional travel, and especially with the formation and tending of his garden at Wallington. Of this garden we have already spoken, so that it is not necessary now to dilate upon its many-sidedness. In many respects it was an apt representative of its proprietor. It displayed great originality, great love of the subject, great labour, great zeal, but a defective method and an imperfect co-ordination. This was the period when Smee became attached to the Royal Horticultural Society, and served on its Council. Few men ever felt more the real requirements of horticulture, few men ever appreciated its scientific position better than he. His speeches were admirable expositions of the place which horticulture ought to hold in the estimation of the public—they were burning illustrations of the duties which an enlightened and appreciative Council ought at least to attempt to fulfil. As an orator, however, his speeches failed to impress so much as their great merit demanded, owing to natural infirmities of voice, while as a practical legislator Smee was so far in advance of his colleagues, and, indeed, of the existing circumstances, that he was less readily listened to than would have been a man of a tithe of his ability and a fraction of his knowledge. All who had the privilege to know Alfred Smee personally were as much impressed with his kindliness and willingness to help, by his staunch stedfastness to his friends, as by his originality and his genius; and they will be grateful to Mrs. Odling for preserving to them in this small volume the memorials of one of the most remarkable men that have made their name in the scientific world in the remarkably prolific period between 1833 and 1877.

Angewendete Botanik Durch Thiere erzeugte Pflanzen-Gallen. By Dr. Fr. A. W. Thomas. (*Just's Botanischen Jahrsbericht.*) Berlin: Gebruder Borntrager.

This report on "plant galls arising from animal agency" gives in thirty-six closely printed pages an attempt (to use the words of the author) "probably now made for the first time to furnish a botanical account of the progress of our knowledge concerning galls;" taking the word "gall" in its widest sense as of any abnormal vegetable growth resulting from the attack, whether of insects, or of lower forms of animal life. It contains notices of papers bearing on this view of the subject, published during 1875 and 1876 by about fifty of our best known gall-observers, both European and American, the list of the writers prefixed showing the names of Riley and Oesten-Sacken, Mayr, Fr. Löw, Landois, and Alb. Müller; P. Magnus on some of the formations of the Anguillulæ and Notommata; E. A. Fitch on the Oak-galls of our own country, given in the observation accompanying his translation of Mayr's *Mittel-Europaischen Erchengallen*, and notes by many others; the full title of the paper, as well as all necessary particulars of the publication it appeared in, being given in each case, so as to put it in the power of the student to gain further information *in extenso* at the fountain-head—a matter peculiarly desirable in gall-literature, scattered as it is in the scientific serials of many lands.

The notices or abstracts, as the case may be, of the various papers, are arranged in order of the gall producers, proceeding through the various classes of insects and acari to the Anguillulæ, and contain notes of many new or little known species of American and European galls, several papers on those of the Cecidomyiæ, and minute observations of the gradual progress of the abnormal development both in cases where the vegetable growth takes the definite and special forms commonly known as galls, and also in the irregular diseased swellings of wood and bark such as occur from what passes generally on our Apple trees under the name of "American blight."

The effect of the intruded egg is also especially considered as distinguished from that of larval presence, and out of the mass of publications on the Phylloxera about fifteen have been selected bearing (as far as the subject can be considered independently of its insect cause) especially on the botanical or horticultural side of the question, and including among them some notes of analyses of roots of American and French Vines which it would be interesting to study at greater length with regard to possible methods of artificially increasing the peculiar principle which it is considered is deterrent to Phylloxera.

The absence of Cynips galls from the European Monocotyledons and Cryptogamia, with only the probable exception of the Pteris aquilina in one case, and that of the Triticum repens, or Arrhenatherum avenaceum in the other, is worth noticing, as are also the papers on the galls of the Notommata Werneckii (one of the Rotatoriæ, family Hydatinea) on the filaments of the Vaucheria geminata and the radicellary tubercles of Anguillulæ on the Sempervivum tectorum and others of the Crassulaceæ.

Ordinarily speaking the considerations of gall growth fall rather to the province of the entomologist than the botanist, but here Dr. Thomas has limited himself to such publications as mainly or entirely give the botanical side of the subject, and his paper is at once a vehicle of much useful information and a guide to those who wish to pursue the subject further.

Reports of Societies.

Royal Caledonian Horticultural: *Sept.* 11.—This was held in the Waverley Market, a place well adapted to the purpose. The show was well arranged and good, indeed one of the best provincial shows we have lately seen. A fine group of plants came from Messrs. Downie & Laird, containing good specimens of Latania borbonica, Dracæna lineata, Seaforthia elegans, Aralias, Ferns, Marantas, some splendid blooms of Dahlias, &c. Messrs. Dicksons & Co., Waterloo Place, also had an interesting stand of foliage and flowering plants, as also had Messrs. Methven & Sons, in whose group were some very neat Palms, Dracænas, &c. Messrs. Drummond Brothers contributed a group, in which flowering plants were more prominent. Messrs. Ireland & Thomson had also a very effective group, composed chiefly of Crotons, Dracænas, Aralias, Ferns, &c. The Lawson Company had a neat table of foliage and flowering plants of a very diversified nature. The 1st prize for three Cape Heaths fell to Mr. J. Paterson, gr. to J. Syme, Esq., Millbank, with fair specimens. For two Heaths Mr. Paterson was also 1st, the 2d for the latter falling to Mr. R. Summers, Woodbank, Dumfries. Six greenhouse plants exhibited by Mr. J. Paterson also gained him 1st honours, consisting of a well-bloomed Odontoglossum grande, Erica Marnockiana, Phœnocoma prolifera, &c. Four very good Adiantums came from Mr. T. Macdonald, gr. to D. M. Gibbon, Esq., Ashfield, those from Mr. A. Paul making a good 2d. A grand Adiantum farleyense gained Mr. R. Summers, gr. to C. W. Scott, Esq., Dumfries, 1st honours, and he was well seconded by Mr. T. Macdonald.

A table of plants was shown by Mr. H. Robertson, gr. to D. McGregor, Esq., containing some good examples. A very good table of plants was also exhibited by Mr. J. Hammond, gr. to Sir Wilfred Lawson, Bart., and also by J. Spruce. Mr. A. Campbell and Mr. R. Summers were 1st and 2d respectively for two greenhouse plants, with fair plants. Todeas were fairly well shown; Mr. A. W. Anderson bing 1st, and Mr. A. Findlay 2d. The classes for two Crotons, two Dracænas, &c., were fairly well filled. A neat group of Conifers came from the Lawson Company's Nurseries. Mr. Robertson Monro, Abercorn Nursery, had a table of nicely flowered dwarf Chrysanthemums. Mr. A. Paul, 89, Gilmore Place, had a couple of good Balsams, and three greenhouse plants were contributed by Mr. H. Robertson. The prizes for one Orchid and for two Orchids were both taken by Dr. Paterson, Bridge of Allan, with Odontoglossum Uro-Skinneri and Vanda suavis; Mr. A. Paul taking 2d in both cases. Mr. W. Key, gr. to Sir J. Foulis, Bart., and Mr. A. Paul had some very fair Liliums. Mr. J. Walker, gr. to Mrs. Wood, Rosehill House, was 1st for two Fuchsias, a 1st being also awarded to Mr. Lawrie, gr. to the Rev. H. Chinnery, for two fine specimens. Some good Cockscombs were contributed by Mr. H. Sime and Mr. R. Johnston. Mr. J. Walker was 1st both for bronze and variegated Pelargoniums, Mr. R. R. Johnston making a good 2d in both instances; Mr. J. Walker being also 1st for three Zonals. Messrs. Rodger, M'Clelland & Co., Newry, had a table of tuberous Begonias, chiefly seedlings, one of which, Majestic, was highly commended. This firm also exhibited specimens of Nandina gigantea, Davallia Macleayi, Grevillea Hillii, &c. Petunias, Stocks, cut blooms, such as Asters, Hollyhocks, Roses, hand bouquets, &c., were shown in some quantity, but were not of particular merit. Dahlias were numerous and good.

Two perfect Lycopodiums came from Mr. J. Cossar, gr. to Lady Christian Maule, Champfleurie, Linlithgow. A stand of splendid Gladioli came from Mr. David Robertson, Mossend Nursery, Helensburgh, which were of great merit severally; Messrs. Galloway & Graham making an excellent 2d. The stands of twelve varieties were also good.

Fruit was well exhibited, especially Grapes, the various classes being well contested. Mr. McIndoe, Hutton Hall, was 1st for one bunch of black Grapes, weight 9 lb. 2 oz.; 2d, Mr. A. Bruce. The heaviest bunch of white Grapes came from Mr. J. Dickson, gr. to J. Jardine, Esq., with White Syrian, weight 8 lb. 14 oz.; the 2d falling to Mr. J. Carruthers. Other successful exhibitors in these classes were Mr. A. Smith, Spiddock; Mr. A. Bruce, Manchester; Mr. W. Brodie, Glen Mayne; Mr. A. Kirk, Mr. Robertson, Mr. J. Goodall, Donisla House; Mr. D. Kemp, Langlee House; Mr. J. Hammond, Brayton, Carlisle, &c. For eight bunches, Mr. A. Kirk, Castle Douglas, had a fine stand; Mr. G. Reid, Rockfield, being awarded 2d. Good Pines came from Mr. M'Intyre, The Glen; a Queen from Mr. McKelvie, gr. to the Duke of Roxburgh; and a Smooth Cayenne also from Mr. M'Intyre. Melons, Peaches, Plums, Apples, Pears, &c., were in fair quantity, but we have not space to particularise. Vegetables, though tolerably well shown, we must dismiss with the same remark.

Messrs. James Dickson, glass manufacturers, had a very interesting display of various flower-stands for table decoration, holding cut flowers, &c., many of the designs being very tasteful.

Derbyshire Horticultural.—The annual exhibition of this Society was held at Derby on Sept. 3 and 4. The stove and greenhouse plants were arranged in the centre of a large circular tent, and a circle round them was made up of Pelargoniums and Selaginellas. The fruit and cut flowers were arranged on the side tables. In the nurserymen's class for twelve stove and greenhouse plants Mr. Cypher, of Cheltenham, was 1st; he staged good blooming specimens of Ixora Williamsii and Prince of Orange, Erica verticillata coccinea, Allamanda Hendersoni, and Dipladenia amabilis. Amongst his foliage plants were a good specimen of Cycas Normanbyana, Croton undulatus, &c. Mr. House, Eastgate Nursery, Peterborough, was 2d, with good plants of Allamanda Hendersoni and Wardlei, Croton interruptus and pictum, Cycas revoluta, Dasylirion gracile, &c.; Messrs. Small & Son, of Ilkeston, were 3d. In the amateurs' class for twelve stove and greenhouse plants there were only three competitors for the four prizes offered. Mr. Ward, gr. to T. H. Oakes, Esq., Riddings House, was 1st, with good flowering plants of Ixora Williamsii, Vallota purpurea, Allamanda Hendersoni, Statice profusa and Eucharis amazonica. The chief foliage plants were two very good Crotons (variegatus and Johannis), having good colour and large leaves; Latania borbonica, Alsophila australis, &c. Mr. Milford, gr. to — Evans, M.P., Allestree

Hall, was 2d, with good plants of Vallota purpurea, Allamanda Hendersoni, Bougainvillea glabra, Dicksonia antarctica, Maranta Veitchii, &c. Mr. Gilbert, gr. to R. Smith, Esq., Duffield Hall, was 4th. For collection of six Ferns there were four competitors. Mr. Ebbutt, gr. to C. B. Kingdon, Esq., Ednoston Lodge, was 1st, with good specimens of Adiantum cuneatum, A. tenerum, A. farleyense, A. trapeziforme, &c. Mr. Cypher was a good 2d with Gleichenias Mendelii, G. rupestris glaucescens, Davallia Mooreana, and Adiantum cardiochlæna. Mr. Milford was 1st for six Lycopodiums, and 2d, Mr. Robinson, Meynell Langley. For six Fuchsias, Mr. Robinson was 1st, and Messrs. Small & Son 2d. For twelve Pelargoniums—six Zonal, six double-flowering—Messrs. Small & Son were the only exhibitors, and were awarded 1st. For six Tricolor and six Bronze Geraniums Mr. Ward was 1st, Messrs. Small & Son 2d. The cut flowers were very good, especially Dahlias and Roses.

The show of fruit was very good, Grapes especially, there being seven competitors for Black, and six competing in White. Mr. Cooke, gr. to F. Morley, Esq., Breadsall Priory, was 1st for both black and white; Mr. Ward, Riddings House, took both the 2d prizes, and Mr. Edwards, gr. to Hon. E. H. Coke, Longford Hall, came in 3d in both cases. (*From a Correspondent.*)

Isle of Thanet Horticultural: *Aug.* 28.—The twenty-third exhibition of this Society was held in the grounds of Bromstone Park, which were placed at the disposal of the Society by G. E. Hannam, Esq.

The plants in pots were divided into twenty-five classes, the whole, with three exceptions, being well filled. The most striking features were a well developed Alocasia macrorhiza variegata, a small Orange tree in full bearing, a Caladium Bellemeyi, a deep velvety Anthurium crystallinum, and some magnificent Caladiums. Among Coleus a specimen of Duchess of Edinburgh was good. Mr. Herepath's gardener (Mr. Jarman) took 1st prize for six exotic Tree Ferns, which showed evidence of great care and attention; and Mr. Dallas and Mr. Twyman, of Margate, both showed well-grown varieties in this class. A small collection of Palms in good condition were shown together with three curiousspecimens of Tree Ferns.

For Begonias in flower the 1st prize was taken by Mr. Friend's gardener. Zonal Pelargoniums were scantily represented. Mr. W. B. Miller, of Ramsgate, showed six beautiful Pelargoniums of variegated foliage, the silver and green leaved varieties being exquisitely beautiful; but the tricolored Pelargoniums bore away the palm, and here again Mr. Miller took 1st prize. The bronze Pelargoniums were all so very good that it was a difficult matter to adjudicate between them.

In the tent devoted to the cut flowers some magnificent varieties were to be found. Five classes were devoted to the Dahlias, of which it is difficult to speak fairly without an appearance of exaggeration. The 1st prize was taken by Mr. W. Seale, of Sevenoaks: these flowers were remarkable for shape and depth of colour. The 2d prize was taken by Messrs. Kinmont & Kidd, of Canterbury, and the 3d by the gardener to Mr. J. T. Friend. The quilled Asters and Zinnias were fairly good. Twelve decided and totally different colours were exhibited by the winner of the 1st prize for Pelargonium blooms.

Some well-grown varieties were shown among the cut blooms, and the prizes for Phloxes were well competed for. A few prettily arranged stands of flowers by Messrs. Kinmont & Kidd were also shown, not for competition.

Among the prizes "for ladies only," Mrs. Seale, of Sevenoaks, took the 1st, for the best stand of flowers for the table. The arrangement showed great delicacy, and the flowers were of a simple character. A prize for a table bouquet was won by the same lady, the arrangement of everlastings and Caladium leaves producing a very pretty effect. A table device was shown by Mr. Mott, of Ramsgate; Miss C. Green also exhibiting in this class; and Mr. H. Cannell, of Swanley, exhibited in this tent a most charming collection of Dahlias, Pelargoniums, and French Marigolds. Mr. A. Foreman, of Shalmsford Road, Canterbury, showed an ingenious speciality in bee-hives.

The fruit was very fine. Mr. Herepath's gardener carried off the 1st prize with three bunches of Buckland Sweetwater Grapes, the same competitor also taking 1st prizes in the two following classes. Peaches were well represented, and a scarlet-fleshed Melon, shown by the gardener to Mr. W. Smith, attracted a large share of admiration. There was an average show of Plums and Pears. The Apples were numerous and enticing.

Some handsome collections of dishes of fruit were exhibited, and French Beans, Scarlet Runners, and Cucumbers showed up well, as did also Onions, Potatos, and Vegetable Marrows.

The productions of the cottagers were on the whole remarkably fine. Kidney Potatos made an excellent show, and there were some fine samples of Onions, Carrots, and Parsnips. In fruit, some Damsons were shown by R. Revell, and Wellard's Apples deserve mention. Some excellent Pelargoniums and Fuchsias and other plants in flower, besides some floral devices, made up a very creditable show of flowers. Honey, wax, and pot herbs completed the list of productions in this class.

Maidenhead Horticultural: *Aug.* 29.—It was something like 1842 or 1843 when the last horticultural show was held at Maidenhead, and after a lapse of thirty-five years another society has been formed, and held its first exhibition on the above date. Maidenhead should have a horticultural show, for it is the centre of a district extending from Wycombe to Windsor in one way, and from Slough to Henley in another—a district in which much excellent gardening has been done in the past, and much is being done still. The show took place in the Hambletonian Hall, a large and roomy structure.

The managers of the show—the leading spirit being Mr. H. Elliott, Braywick Gardens, Maidenhead, to whom the new society is much indebted for its organisation—started well in the matter of arrangements.

The committee were wise in starting with a schedule containing a comparatively few classes, offering good prizes for a first attempt, and securing a very pretty and attractive show, the effect of which was heightened by a good arrangement. The leading exhibitor of plants was Mr. W. Lees, gr. to Mrs. Marsland, Reading, who staged the only group of six stove and greenhouse plants—awarded the 1st prize; they were a nice exhibit, and consisted of Eucharis amazonica, Clerodendron fallax, Allamanda Schottii, Ixora javanica, Plumbago capensis, and Pentas carnea, nicely grown and bloomed. Mr. H. Elliott, gr. to J. Hibbert, Esq., Braywick, had the best six foliage plants, setting up good examples of Croton Weismanni, Musa Cavendishii, Seaforthia elegans, and Areca lutescens, with two others; Mr. W. Lees coming in 2d with smaller but nicely grown plants. In the class for six exotic Ferns the order was reversed, and Mr. Lees was placed 1st, having very nice specimens of Gymnogramma chrysophylla, G. pulchella, Adiantum farleyense, Dicksonia antarctica, Lomaria gibba, and Blechnum brasiliense; 2d, Mr. H. Elliott, whose collection contained a fine plant of Adiantum farleyense. Mr. Lees also had the best specimen flowering and foliage plants, and the best six and also four Fuchsias. Some nice plants of Lilium speciosum were shown by Mr. Geo. Smith, Maidenhead; and in the class for table plants Mr. H. E. Gribble, gr. to E. H. Palmer, Esq., Cannon Hill, was 1st; and Mr. R. Brown, gr. to F. T. Barry, Esq., St. Leonard's Hill, Windsor, 2d. The best six bedding Pelargoniums were from Mr. E. Jones, Henley-on-Thames.

The best group of plants for effective arrangement came from Mr. H. Elliott; the 2d best from Mr. H. Lees; and the 3d from Mr. A. Burgess, gr. to Col. Clayton, Fifield. Mr. Elliott had good plants, tastefully arranged, but the groups were at too high an elevation to display them to the best advantage.

A goodly number of subjects were sent not for competition. These included a fine and telling group of plants from Messrs. John Standish & Co., Royal Nurseries, Ascot, which contained Ferns, Palms, &c., relieved by an admixture of Tuberoses, Lilium auratum, &c. Mr. C. Turner, Royal Nursery, Slough, sent Pompon Chrysanthemums in flower, Bouvardias, &c., and a lot of cut Dahlias, which included Joseph Ashby, a distinct flower, red in the ground, with an orange-red circumference, promising to make a fine and constant exhibition variety, and to which a First-class Certificate was awarded; Queen of Italy, a charming light flower in the way of Louisa Neate, John Greenaway, &c. From Mr. J. Fleming, gr. to the Duke of Westminster, Cliveden, came a fine collection of stove, greenhouse, and decorative plants, which were tastefully arranged, and, occupying a commanding position in the centre of the hall, formed one of the chief features of the show. Mr. W. Broughton, Norfolk Road Nusery, Maidenhead, had a nice group of plants that were of great assistance. Mr. Thomas Lockie, gr. to Lord Otho Fitzgerald, contributed a valuable collection of fruit, including Black Hamburgh, Syrian, Alicante and Buckland Sweetwater Grapes; Salway and other Peaches, Nectarines, Plums, and six fine fruits of Tender and True Cucumber. Mr. John Walker, nurseryman, Thame, sent cut Dahlias and splendid German and French Asters, which were much admired. Mr. J. Elliott, Braywick, had coloured grasses, everlastings, &c., most useful for winter decoration.

Mr. Wright, gr. to W. H. Greenfell, Esq., Taplow Court, sent fine examples of Alicante, Black Hamburgh, and Muscat of Alexandria Grapes, and other fruit; John Fleming, Esq., Kidevill Park, Maidenhead, had fine examples of Alfriston Apples of this and last year's growth; Plums, Apricots, &c.; and J. W. Coventry, Esq., Taplow, sent a collection of new fruit, which included Melons, black Grapes, Peaches, Nectarines, &c. All the foregoing were highly commended, and in some instances money prizes were awarded.

Cut flowers comprised Dahlias, Asters, Roses, &c., Mr. John Maber, Stoke, having the best twelve Dahlias; Mr. J. Tranter, Upper Assenden, was 2d. Mr. Tranter had the best six Dahlias, as also the best twelve Roses. Gladioli, in twelve spikes, were well shown by Mr. E. Jones and Mr. J. Maber. Mr. Tranter had some good bunches of hardy flowers, conspicuous amongst which was Lobelia fulgens, in fine condition.

The fruit and vegetable departments comprised excellent contributions. Mr. J. Maber, Stoke, had the best six dishes of fruit, consisting of a Pine, Black Hamburgh Grapes, Peaches, Nectarines, and Plums. Mr. H. Elliott was 2d. The best four dishes came from Mr. Geo. Hopkins, Mr. Geo. Cox, gr. to J. H. Blagrove, Esq., Calcot Park, being 2d. The best four dishes grown in the open air came from Mr. R. Baker; Mr. G. Hopkins being 2d. Mr. J. Tomlin, gr. to Miss Patterson, Bracknell, was 1st with three good bunches of Black Hamburgh Grapes; and also in the class for any other black variety, staging very good bunches of Mrs. Pince's Muscat. Mr. A. Burgess had the best white Muscat; while the best prize for any other white went to Mr. G. Hopkins, who had Buckland Sweetwater. All other fruits were very good.

Vegetables and cottagers' produce must be passed over, but all was of a most satisfactory character. Mr. H. Elliott's special prizes for six dishes of vegetables and six dishes of Potatos brought a good competition, Mr. H. Gribble being 1st in the former class, and Mr. Lees in the latter. Mr. Lees had capital examples of Lye's Favourite, Emperor, International Kidney, Rector of Woodstock, and Onwards; Mr. W. Cox being 2d with a very good lot.

The best group of three vases of wild flowers set up by Miss M. Cooper, Maidenhead, were very pretty indeed, and well deserved the 1st prize. Some pretty bouquets of wild flowers were contributed by children attending the elementary schools, and various prizes were awarded.

Thornton Heath Horticultural: *Aug.* 28.—This young society held its second annual exhibition on Wednesday, the 28th ult., with marked success. The Society seeks chiefly to encourage amateurs who keep no regular gardeners (and who form a large proportion of the residents in suburban localities) to exhibit the products of their own skill and energy; and there is no doubt that the policy has been a wise one, the number of entries having been doubled, and the qualities of the exhibits having a marked superiority over the previous show. Cottagers, gentlemen's gardeners, and nurserymen were, however, not excluded, and had ample opportunities afforded them, which were freely availed of.

The principal plant class, six stove or greenhouse plants, was somewhat disappointing, and the entries were not so numerous or so effective as was expected. Mr. Penfold, gr. to Canon Bridges of Beddington, took 1st prize; Mr. Horton, gr. to H. Moser, Esq., Westwood, Upper Norwood, 2d; and Mr. Nicholas, gr. to Mr. J. Stuart, Esq., Thornton Heath, 3d. Mr. Penfold also secured 1st honours with a specimen plant; and Mr. Nicholas 2d.

Ferns were very well shown by Mr. Horton and Mr. Penfold, who took 1st and 2d places, and others; and also in the amateur division. Coleus were also well staged, and some handsome plants were shown. In the amateur division some small specimen plants received a great deal of notice, and the class for six flowering or foliage plants was also well filled. Fuchsias, Pelargoniums, Begonias, Caladiums, Gloxinias, and Lilies were but sparsely shown.

Turning to the cut flower department some magnificent Roses from Paul & Son, of Cheshunt, received a First-class Certificate, as did others from Messrs. Laing & Co., of Forest Hill. In the class for twenty-four distinct Roses, Mr. Murchener (amateur), of South Norwood, took 1st prize; Mr. Penfold, 2d; and Mr. Cattell, of Westerham, 3d. In the class for twelve Roses Mr. Murchener was again 1st, and Mr. E. Mawley, of Addiscombe, 2d. With six Roses and six Tea-scented Roses Mr. Murchener only took 2d place, Mr. Wight, of Gipsy Hill, and Mr. Mawley securing the 1st prizes. Dahlias, Asters, and collections of cut flowers were well shown, but Gladioli were conspicuous by their absence.

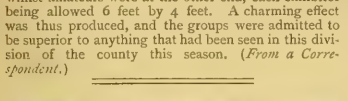
Turning to the fruit an excellent display was staged. Grapes, Peaches, Apples, and Plums were alike good, and the competition close.

In the vegetable division the prominent feature of the show was found, and of Potatos alone upwards of one hundred dishes were staged, mostly of very creditable quality. In the class for six dishes, distinct, each nine tubers, 1st prize fell to Mr. Chaffe, gr. to C. H. Goschen, Esq., The Ballards, and 2d to Mr. Osman, gardener at the South Metropolitan Schools, Sutton. Messrs. Daniels Bros. prizes for three varieties were won, 1st by Mr. Stuckbury, amateur, Thornton Heath; 2d by Mr. Tremain, 3d by Mr. Brooks, cottager. Onions, both spring-sown and autumn-sown, were

abundant and very fine; Celery fair, Beans good, Cucumbers fair, Beets poor.

Turning to the table decorations, most of which were of the average description, we may notice one exhibited, not for competition, by Mr. Whalley, gr. to the Archbishop of Canterbury, and which for simplicity and effect received a First-class Certificate. The class for fireplace and mantelpiece decorations, a very uncommon one, is always a feature at Thornton Heath, and the successful lady, Miss Atterbury, exhibited a charming rockery of cork, Ferns, and grasses, arranged over and around a shady pool of water. The mantelpiece was adorned with vases of cut flowers.

Last but not least in the interesting points of the show were groups of plants arranged for effect. Gardeners occupied one end of the principal tent, and had a space of 9 feet by 6 feet allotted to them; whilst amateurs were at the other end, each exhibitor being allowed 6 feet by 4 feet. A charming effect was thus produced, and the groups were admitted to be superior to anything that had been seen in this division of the county this season. (*From a Correspondent.*)



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, SEPT 11, 1878

MONTH AND DAY.	BAROMETER: Mean Reading Reduced to 32° Fahr	BAROMETER: Departure from Average of 18 years	TEMPERATURE OF THE AIR: Highest.	Lowest.	Range	Mean for Day	Departure of Mean from Average of 10 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity Sat. = 100	WIND. Average Direction	Amount	RAINFALL
Sept	In.	In.	°	°	°	°	°	°				In.
5	29.83	−0.08	72.7	57.3	15.4	63.2	+ 4.6	61.0	94	S S E	0.00	
6	29.05	+0.04	74.5	57.0	17.5	62.6	+ 4.2	57.8	84	S.S.W. W	0.00	
7	29.95	+0.04	73.0	53.3	19.7	62.3	+ 3.9	56.2	80	S W S S W	0.00	
8	29.86	−0.05	76.6	57.1	19.5	62.6	+ 4.3	61.5	95	W S W	0.02	
9	29.89	−0.01	67.9	55.1	12.8	61.0	+ 1.0	55.4	82	W N W W	0.00	
10	30.06	+0.16	70.3	52.3	18.0	58.6	+ 0.6	51.8	78	N W W N W	0.00	
11	30.06	+0.17	76.2	46.2	30.0	59.1	+ 1.3	55.1	87	N N E N N W	0.00	
Mean	29.93	+0.04	73.0	54.0	19.0	61.3	+ 3.3	57.0	86	variable	Sum 0.02	

Sept. 5.—A dull cloudy day; slight rain fell between 1 and 2 P.M., and again at 6 P.M.
— 6.—Overcast till mid day. Fine and bright after. Warm. Fog in morning.
— 7.—A fine bright day, cloudy evening. Overcast at night. Warm.
— 8.—Overcast till 9.30 A.M. Fine after. Cloudless at night. Little rain fell at 5 P.M.
— 9.—A fine day, generally cloudy. Few drops of rain at noon.
— 10.—A fine bright day, partially cloudy till evening, then cloudless. Moonlight.
— 11.—A very fine day. Warm and summer-like. Clear in morning. Light clouds in afternoon; cloudless at night.

LONDON: *Barometer.*—During the week ending Saturday, September 7, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 29.83 inches at the beginning of the week to 30.31 inches by noon on the 2d, decrea ed to 29.99 inches by the afternoon of the 5th, increased to 30.17 inches by the morning of the 7th, and was 30.09 inches at the end of the week. The mean reading for the week was 30.15 inches, being 0.53 inch above that of the preceding week, and 0.06 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 74½° on the 6th to 61° on the 1st; the mean for the week was 71°. The lowest temperatures of the air observed by night varied from 49½° on the 3d to 57½° on the 5th; the mean value for the week was 54½°. The mean daily range of temperature in the week was 16½°, the greatest range in the day being 23½° on the 3d, and the least 4½° on the 1st.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—1st, 57°.8, — 1°.6; 2d, 59°.1, — 0°.2; 3d, 60°, + 0°.9; 4th, 61°.4, + 2°.6; 5th, 63°.2, + 4°.6; 6th, 62°.6, + 4°.2; 7th, 62°.3, + 3°.9. The mean temperature of the air for the week was 60°.9, being 2°.1 above the average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 141° on the 3d, 136¾° on the 6th, and 133° both on the 4th and 7th; on the 1st the reading did not rise above 69°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 46½° on the 3d, and 47° both on the 4th and 7th; the mean of the seven lowest readings was 49¼°.

Wind.—The direction of the wind was variable, and its strength gentle.

The weather during the week was fine, warm, and dry; the sky was generally cloudy.

No *rain* fell.

Fog prevailed on the 1st and 6th.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 77° at Sunderland, 76⅞° at Eccles, 75½° at Sheffield, and 75¼° at Norwich; the highest temperature of the air at Bradford was 68¾°, and at Liverpool and Leeds was 70°; the mean value from all stations was 73¼°. The lowest temperatures of the air observed by night were 47¼° at Bristol, 48° at Nottingham, and 49° at Eccles; the lowest temperature of the air at Sunderland was 55°, and at Liverpool was 53⅛°; the mean value from all stations was 50½. The range of temperature in the week was the greatest at Bristol, 27⅜°, and the least at Liverpool, 16°; the mean range from all stations was 23°.

The mean of the seven high day temperatures was the highest at Bristol and Sunderland, both 71⅛°, Blackheath 71°, and Eccles 70⅜°, and the lowest at Bradford and Wolverhampton, 66½, and Liverpool, 66½°; the general mean value from all stations was 69⅜°. The mean of the seven low night temperatures was the lowest at Bristol, 51⅜°, and Wolverhampton and Eccles, both 52½°, and the highest at Liverpool, 57¼°, and Sunderland, 57⅜°; the mean from all stations was 54⅜°. The mean daily range of temperature in the week was the greatest at Bristol, 19⅛°, and the least at Liverpool, 9⅛°; the mean daily range from all stations was 15°.

The mean temperature of the air for the week from all stations was 60½°, being 9½° higher than the value for the corresponding week in 1877. The highest were 63° at Sunderland and 62° at Liverpool; and the lowest were 58° at Wolverhampton, 59½° at Bradford, and 59⅜° at Brighton.

Rain.—At Nottingham 0.87 inch fell, 0.86 inch of which fell on the 1st; and at Truro 0.45 inch was measured on the 7th. With these exceptions the falls of rain were very small. At Sheffield and Eccles only 0.01 inch fell, whilst at Blackheath, Liverpool, and Hull no rain was measured. The average fall over the country was 0.13 inch.

The weather during the week was fine, warm, and dry, and the sky was partially cloudy.

A *solar halo* was seen at Bristol on the 3d.

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 76° at Paisley to 66½° at Greenock; the mean from all stations was 71°. The lowest temperatures of the air varied from 48° at Perth to 51½° at Aberdeen; the mean value from all places was 50°. The mean range of temperature in the week from all stations was 21°.

The mean temperature of the air for the week from all stations was 60½°, being the same as that of England, and 10⅜° higher than the value for the corresponding week in 1877. The highest were 62½° at Dundee, and 61⅛° at Paisley, and the lowest were 58½° at Greenock., and 59½° at Aberdeen.

Rain fell at Greenock to the amount of 0.49 inch, whilst at Dundee only 0.05 inch fell, at Paisley no rain was measured; the average fall over the country was 0.16 inch.

DUBLIN.—The highest temperature of the air was 74½°, the lowest 43¼°, the range 31¼°, the mean 61°, and the fall of rain 0.01 inch.

JAMES GLAISHER.

Variorum.

COFFEE CULTIVATION IN HAITI. — The staple article of export from Haiti is coffee, which has a reputation for its good quality. Little or no care, however, is said to be given either to its cultivation or preparation for market. The trees are not submitted to any periodical trimming or pruning, to no removal of dead or superfluous branches, and no check is given to undue overgrowth, the proper exercise of which helps to increase the yield and improve the quality of the fruit. Moreover, as the berries ripen they are not picked from the tree by hand, but are left to fall off by themselves, and the earth and gravel which stick to it get mixed up with the seed. As to cleanliness, the Haitians maintain that to wash the seed is to diminish the aroma, which, of course, is its great value. Haitian Coffee, however, we are told, seldom, if ever, reaches the foreign housekeeper, nor yet the retailer, under its own proper name, composed as it is of several varieties, which are respectively identical in kind with the produce of some of the most esteemed coffee-bearing countries. Importers find profit not only in cleaning the seed, but in sorting it into lots, which are then mixed up with those kinds of good market repute to which they are severally related or similar. In this way Haitian coffee is converted into the coffees of Mocha, Ceylon, Java, Brazil, Jamaica, &c., and under the name thus acquired it passes into retail and final use.

Enquiries.

He that questioneth much shall learn much.—BACON.

AMERICAN VINES.—*L.* wishes to know if any of our correspondents have any American Vines in cultivation such as Catawba or Isabella?

Answers to Correspondents.

*** Professor REICHENBACH wishes us to announce that his address for the next three weeks will be Poste Restante, Ems, near Coblenz.

ABIES ALBERTIANA CONING.—In answer to "H. R. S." (p. 318), I may say that I saw several trees, not 20 feet in height, in cone last year. I should like to know where his large plant is growing. *G. S.*

ADDRESS: *Subscriber.* Mr. Parker, Exotic Nursery, Tooting.

BOOKS: *G. P. Thomson on the Vine* (Blackwood); Thompson's *Gardener's Assistant* (Blackie).—*P. D.* Cuthill's *Market Gardening* (Groombridge).

BULB AND TUBER: *W. J. H.* A bulb has a very small contracted stem, surrounded by a number of large scales, as in the Hyacinth or Lily. A tuber is a portion of the stem much thickened, with few or with minute scales, and with one or more buds or eyes.

CATTLEYA LOBATA: *F. G. C.* The plant is a somewhat shy bloomer, and you must have patience. It flowers about June, and two years ago was shown in fine bloom by most of the exhibitors at Manchester. Try the effect of well ripening the growths when they are matured.

CHERRY LAUREL FRUITING: *T. L.* This is not a very common occurrence. We do not believe the fruits are any more poisonous than are Cherries.

EUCHARIS: *W. C.* Your flower with ten segments is the result of a union when in a very young state of two flowers. Two of the twelve parts are abortive. We have seen several such cases where the plant has been vigorous and grown on fast.

INSECTS: *J. H.* The specimen sent is the empty skin of the pupa of the common Helophilus, a two-winged fly like a humble-bee, the larva of which lives in dirty water, and has a long slender tail.—*C. B. N.* The insects gnawing your Rose leaves are the very young larvæ of some moth, with sixteen legs, which we cannot determine in their present state, but will try to rear. *I. O. W.*

LILIUMS: *R. L. W.* Allow the stems to die away, keeping the bulbs moderately dry, but not so as to shrivel them. If the plant referred to has bulbs on the stem, which we suppose is the case from your description, take them off as the stems ripen, and plant them at once in pots of light rich soil; they will grow up in due course, and gradually develope strength till they become flowering bulbs.

NAMES OF FRUITS: *A. G. Apples:* 1, Royal Russet; 2, Cellini; 3, not recognised. *Pears:* 1, Beurré d'Amanlis; 2, Beurré Bosc; 3, Franc Real d'Eté; 4, Bishop's Thumb (?).—*S.* Your Apple is a very small specimen of Cox's Orange Pippin most likely.—*C. & Co.* We cannot name such specimens; two were quite rotten, another nearly so. The others, not worth growing, might be almost anything.—*Ivy Green.* Next week.—*C. D., Ambleside.* Received smashed.

NAMES OF PLANTS: *H. L. H., Great Bookham.* Saponaria officinalis.—*W. A.* Atriplex Halimus; does well by the sea.—*G. W.* 1, Funckia grandiflora; 2, Fedia olitoria, Corn-salad; 3, Chrysanthemum segetum.—*J. S.* 1, Escallonia montevidensis; 2, Polygonum cuspidatum.—*B. G.* 1, Sequoia sempervirens; 2, Juniperus chinensis (male); 3, Pinus Cembra; 4, Juniperus virginiana; 5, Biota orientalis; 6, Juniperus Sabiniana.—*E. R.* 1, Euonymus atropurpureus; 2, Lonicera xylosteum, and Hæmanthus coccineus.—*Dublin.* 1, Imperata cylindrica; 2, Eragrostis megastachya.—*X.* Eupatorium cannabinum.—*C. Herrin.* Clethra alnifolia.—*J. O. T.* 1, Hibiscus syriacus, with double flowers; 2, Cryptomeria elegans; 3 and 4, varieties of Anemone japonica; 5, Rudbeckia speciosa; 6, Solidago canadensis.

PELARGONIUMS: *R. L. W.* Pelargoniums are various; which race do you mean? If the large-flowered or show varieties, cut them down closely as soon as the flowering is over, making cuttings of the tops thus cut away; let the old cut-down plants stand in a sunny place, and keep them rather dry till they break, when shake out and repot. If you mean the zonal race, do not cut the plants very much, only shorten back the long shoots to give them a symmetrical form; put the cuttings either singly in small pots, or thickly together in boxes, and let them have the full sun and very little water till they are seen to be growing. In either case to prevent the plants from bleeding keep the roots dry.

PICEA NOBILIS: *B. S.* The disease in the twig of P. nobilis is caused by an insect. You may save yourself the trouble and expense of a better compost for a plant in this stage of the disease. Our advice to you is to burn it. The dry sand and gravel formation in and around Beckenham is unsuited to the healthy growth of P. nobilis.

ROSES: *R. L. IV.* Roses may be struck in winter from portions of the young wood, put in firmly in the same way as Currants and Gooseberries are treated. That is, the trees are pruned in winter, and the prunings cut into lengths of about a foot and planted. A large proportion will grow if properly done. The best book on the culture of Pot Roses is Mr. W. Paul's *Rose and Rose Culture*, which costs 1*s.*

TWIN PEA-PODS: *T. L.* The appearance of two pods in one flower may be considered as a reversion to the typical number 5. The spiral twist in the case of the two coherent pods of the French Bean may be accounted for by the check to the growth occasioned by the union.

VERBENA: *Talpa.* The colour is a fine rich crimson, the trusses small and compact—so far it has the qualities of a good bedder; and if, as you say, it is a freer grower and bloomer than Crimson King, it will be a useful acquisition. You should send it to Chiswick for trial, as then it would be seen growing beside other novel sorts, and its general habit and endurance could be fairly estimated.

WIRE ARCHWAYS: *H. L. H.* We cannot recommend tradesmen. See our advertising columns.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED.—The New Plant and Bulb Company (Lion Walk, Colchester), Retail List of Japanese and other Lilies, Orchids, Bulbs, &c.—Webb (Stourbridge), Bulbs.—J. Linden, Azaleas, Camellias, Palms, &c.—J. Scott (Yeovil), Dutch Bulbs.—M. Saunders & Sons (Cork), Bulbs.—Heinemann (Erfurt), Winter and Spring Flowers.

EXCHANGE—STAPELIA POLITA.—I shall be glad to receive a plant or cutting of this species, and to give an equivalent in exchange. *J. E. Daniel*, 6, *The Terrace, Epsom.*

COMMUNICATIONS RECEIVED:—T. H.—G. W.—H. G. R.—T. M.—L. L.—W. M.—K. B.—Regular Subscriber.—H. M.—Camjee.—E. P.—G. S.—W. H.—C. H.—A. W. F.—A Correspondent.—P. W.—W. P.—G. McL.—Constant Reader.—M. D.—Prof. Santo Garovaglio.—J. S.—Sir T. L.—A. L.—Miss Daw.—J. Shand.—A. Z.—W. S. T.

Markets.

COVENT GARDEN, September 12.

Trade is still quiet, at previous quotations; and the market is well supplied; but there is a falling off in the supply of Grapes from the Channel Islands, and home-grown fruit is likely to make better prices. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.

	s. d.	*s. d.*
Abutilon, 12 blooms	0 6– 1 0	
Asters, 12 bunches..	3 0– 9 0	
Bouvardias, per bun.	1 0– 4 0	
Calceolaria, 12 bun..	6 0–12 0	
Carnations, 12 bunch.	4 0–12 0	
Cornflower, 12 buu..	2 0– 6 0	
Dahlias, 12 bunch...	3 0– 9 0	
Delphinium, 12 bun.	6 0–12 0	
Eucharis, per doz. ..	4 0–12 0	
Gardenias, 12 blms.	3 0– 9 0	
Gladioli, various, 12 spikes ..	1 0– 4 0	
Heliotropes, 12 sp. ..	0 6– 1 0	
Jasmine, 12 bunches	6 0–12 0	
Mignonette, 12 bun.	2 0– 6 0	
Myosotis, 12 bun. ..	3 0– 6 0	
Pelargoniums, 12 spr.	0 9– 1 6	
— zonal, 12 sprays	0 4– 1 0	
Phlox, 12 bunches ..	6 0–12 0	
Primula, double, per bunch ..	1 0– 2 0	
Pyrethrum, 12 bun..	3 0– 6 0	
Roses (indoor), doz.	1 6–12 0	
— (outdoor), 12 bun.	3 0–12 0	
Stephanotis, 12 sp...	3 0– 9 0	
Stocks, 12 bunches..	4 0– 9 0	
Sweet Peas, 12 bun.	2 0– 6 0	
Sweet Sultan, 12 bun.	6 0– 9 0	
Tropæolum, 12 bun.	1 0– 4 0	

VEGETABLES.

	s. d.	*s. d.*
Artichokes, English Globe, doz. ..	2 0– 4 0	
Aubergines, p. doz..	1 0– ..	
Beans, French, lb...	0 4– 0 6	
— runners, p. bush.	0 0– 0 6	
— broad, per bush.	3 0– ..	
Beet, per doz. ..	1 0– 2 0	
Cabbages, per doz. ..	1 0– 2 0	
Carrots, per bunch ..	0 4– 0 6	
Cauliflowers, per doz.	4 0– 6 0	
Celery, per bundle ..	1 6– 2 0	
Chilis, per 100 ..	5 0– ..	
Cucumbers, each ..	0 4– 1 6	
Custard Mar., doz.	3 0– ..	
Endive, Batav. dozen	1 6– ..	
Garlic, per lb. ..	0 6– ..	
Herbs, per bunch ..	0 2– 0 4	
Horse Radish, p. bun.	4 0– ..	
Lettuces, Cos, Eng., per score ..	1 6– 2 6	
Mint, green bunch..	0 4– 0 6	
Onions, young, bun.	0 4– 0 6	
Parsley, per bunch..	0 4– ..	
Peas, green, per qr.	1 6– 2 0	
Radishes, per bunch	0 1– 0 3	
— Spanish, doz. ..	1 0– ..	
— New Jersey, doz.	2 0– ..	
Shallots, per lb. ..	0 6– ..	
Spinach, per bushel	2 0– 3 0	
Tomatos, per dozen	2 6– 3 0	
Turnips, new, p. bun.	0 6– ..	
Vegt. Marrows, doz.	2 0– ..	

The Potato trade is dull, and prices remain the same:—Myatt's, 120*s.* to 160*s.*; Regents, 100*s.* to 130*s.*; Early Rose, 110*s.* to 120*s.* per ton.

PLANTS IN POTS.

	s. d.	*s. d.*
Asters, per doz. ..	4 0–12 0	
Begonias, per doz. ..	4 0–12 0	
Bouvardias, do ..	9 0–24 0	
Calceolarias, p. doz..	6 0–12 0	
Chrysanth., per doz.	6 0– 9 0	
Coleus, per dozen ..	3 0– 9 0	
Cyperus, do.. ..	6 0–12 0	
Dracæna terminalis	30 0–60 0	
— viridis, per doz..	18 0–24 0	
Euonymus, various, per dozen ..	4 0–18 0	
Ferns, in variety, per dozen ..	4 0–18 0	
Ficus elastica, each	2 6–15 0	
Foliage Plants, various, each ..	2 0–10 6	
Fuchsias, per dozen	3 0–12 0	
Hydrangea, per doz.	9 0–18 0	
Mignonette, per doz.	3 0– 9 0	
Musk, per dozen ..	2 0– 6 0	
Myrtles, per doz. ..	4 0–12 0	
Palms in variety, each ..	2 6–21 0	
Pelargoniums, scarlets, zonal, doz ..	2 6– 6 0	
Petunias, per dozen	4 0–12 0	
— Fairy, per doz.	9 0–12 0	
Vallota, per doz. ..	9 0–24 0	

FRUIT.

	s. d.	*s. d.*
Apples, ½-sieve ..	1 6– 4 0	
Figs, per dozen ..	0 6– 2 0	
Filberts, per lb. ..	0 6– 0 9	
Grapes, per lb. ..	0 6– 4 0	
Lemons, per 100 ..	10 0–18 0	
Melons, each ..	1 0– 3 0	
Peaches, per dozen..	1 0– 8 0	
Pears, per doz. ..	1 0– 3 0	
Pine-apples, per lb.	2 0– 6 0	
Plums, ½-sieve ..	2 6– 5 0	

SEEDS.

LONDON: *Sept.* 11.—As regards red Clover seed there is this week nothing new to report. Advices from Chicago, bearing date 26th ult., state that no new samples had then appeared, but that their near approach was putting on the market increased offerings of yearling seed; and that, in the absence of all demand, values were exhibiting signs of weakness. The present crop is, throughout the Western States, well spoken of, and prices are expected to open at a moderate level. It should be noted that of late a considerable advance has been made in the freight charges as between Chicago and New York, which will appreciably add to the cost of American Clover and Timothy when laid down in this country. Trefoils, both English and foreign, are held with firmness; the French appear to have been buying largely in Begium. In white Clover there has been rather more doing. Trifolium is without change. In winter Tares and Rye there is a steady trade doing. The supply of both varieties is quite equal to the demand. New blue Peas meet a ready sale at full rates. A good quantity of the new white Mustard has this week arrived on Mark Lane, and, considering its quality and condition, has realised prices which should satisfy the growers. Canary seed more than maintains its late advance; the great bulk of the seed now in London (including the late heavy arrivals) has been withdrawn from the market—hopes being entertained by holders that by a temporary and artificial scarcity quotations may be still forced upwards. In Hemp seed the tendency is against the buyer. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday new English Wheat, for which quotations ranged from about 38*s.* to 49*s.* per quarter, may be quoted 2*s.* per quarter cheaper on the week. New winter American Wheat showed a like reduction, but as regards other foreign descriptions no greater fall than 1*s.* per quarter can be reported. Barley sold slowly at irregular prices. Some very fine new malting Barley grown in Essex was offered at 42*s.* per quarter. Malt remained without change. Oats were steady, the better qualities making full prices. Maize, too, fairly supported previous currencies. Beans and Peas were held for the same prices, and in the absence of business no distinct change was quoted in flour.—On Wednesday sales of Wheat could only be made at less money, but owing to the paucity of business no general reduction was quoted. Barley was not so well held, and the tone was a little weak for Oats, Maize, and the other classes of produce. Flour was very slow of sale, and prices were decidedly in buyers' favour.—Average prices of corn for the week ending September 7:—Wheat, 45*s.* 4*d.*; Barley, 42*s.* 5*d.*; Oats, 25*s.* 4*d.* For the corresponding period last year:—Wheat, 60*s.* 6*d.*; Barley, 39*s.*; Oats, 28*s.* 5*d.*

CATTLE.

At Copenhagen Fields on Monday trade in beasts was not very brisk, and on the average prices were rather lower, yet choicest descriptions were scarcely altered. In sheep trade was not quite so good as last reported, but choice qualities were not lower. A few lambs of best quality still find purchasers. The calf trade remained unaltered. There were a large number of American pigs on offer, some, very big and fat, did not make much per pound. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* to 7*s.*; lambs, 6*s.* 8*d.* to 7*s.* 4*d.*; pigs, 4*s.* to 5*s.*—The cattle trade on Thursday was without fresh feature. Beasts sold quietly at about Monday's prices. Sheep were steady in value, especially fine breeds: the demand was moderate. Calves and pigs sold at about the rates quoted above.

HAY.

Tuesday's Whitechapel report states that, with a moderate supply, trade was dull, and prices were rather lower. Prime old Clover 120*s.* to 140*s.*; new, 100*s.* to 120*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 90*s.* to 98*s.*; new, 80*s.* to 90*s.*; inferior, 50*s.* to 70*s.*; and straw, 43*s.* to 52*s.* per load.—On Thursday there was a moderate supply. With a good trade, Tuesday's prices ruled firm.—Cumberland Market quotations:—Superior meadow hay, 92*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; superior Clover, 126*s.* to 135*s.*; inferior, 90*s.* to 110*s.*; and straw, 50*s.* to 55*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that Potatos continue in moderate supply, and trade remains steady. There is, perhaps, a little less disease to be seen. Kent Regents 120*s.* to 130*s.* per ton; Essex ditto, 80*s.* to 100*s.*; Early Rose, 120*s.* to 130*s.*; kidneys, 100*s.* to 140*s.*; shaws, 50*s.* to 83*s.*—The imports into London last week were confined to 2300 bags, the bulk of which was shipped from Hamburg.

COALS.

The demand for house coals at market on Monday was steady, and previous full prices were current. On Wednesday the demand improved, and the quotations were as follows:—Bebside West Hartley, 15*s.* 3*d.*; Carr's Hartley, 15*s.*; East Wylam, 16*s.*; Walls End—Hetton, 18*s.*; Hetton Lyons, 16*s.* 9*d.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; Chilton Tees, 17*s.* 3*d.*; Caradoc, 17*s.* 6*d.*; Hutton, 18*s.*

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600	6 × 4				
492	6½ ,, 4½	*s. d.*	*s. d.*	*s. d.*	*s. d.*
412	7 ,, 5	10 0	11 0	12 0	13 0
349	7½ ,, 5½				
300	8 ,, 6				
260	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8	11 0	12 6	14 6	16 9
164	10½ ,, 8½				
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 3	13 3	15 3	17 6
111	13 ,, 10				
103	14 ,, 10				
92	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11				
92	13 ,, 12	11 6	13 6	15 6	18 0
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	11 9	13 9	15 9	18 3
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15	11 9	13 9	15 9	18 3
44	22 ,, 15				
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	12 3	14 3	16 6	19 0
49	20 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

Orchard House Glass.

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Inches.	Inches.	4ths.	3ds.	2ds.	Best.
20 × 12	20 × 15	*s. d.*	*s. d.*	*s. d.*	*s. d.*
20 ,, 13	20 ,, 16	14 6	16 6	18 6	21 0
20 ,, 14	20 ,, 17				

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,,	,,	21 oz. ,, ,, ,, 200 ft.	30 0
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3ds	,,	15 oz. Superior Glazing ,, 300 ft.	37 0
,,	,,	21 oz. ,, ,, 200 ft.	37 0
,,	,,	26 oz. ,, ,, ,, 200 ft.	50 0
2ds	,,	16 oz. Extra ,, ,, 200 ft.	37 6
,,	,,	21 oz. ,, ,, ,, 200 ft.	50 0
,,	,,	26 oz. ,, ,, ,, 200 ft.	66 6
Best	,,	16 oz. Glass ,, ,, 200 ft.	50 0
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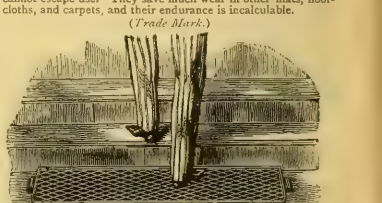
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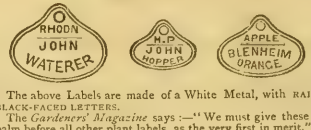
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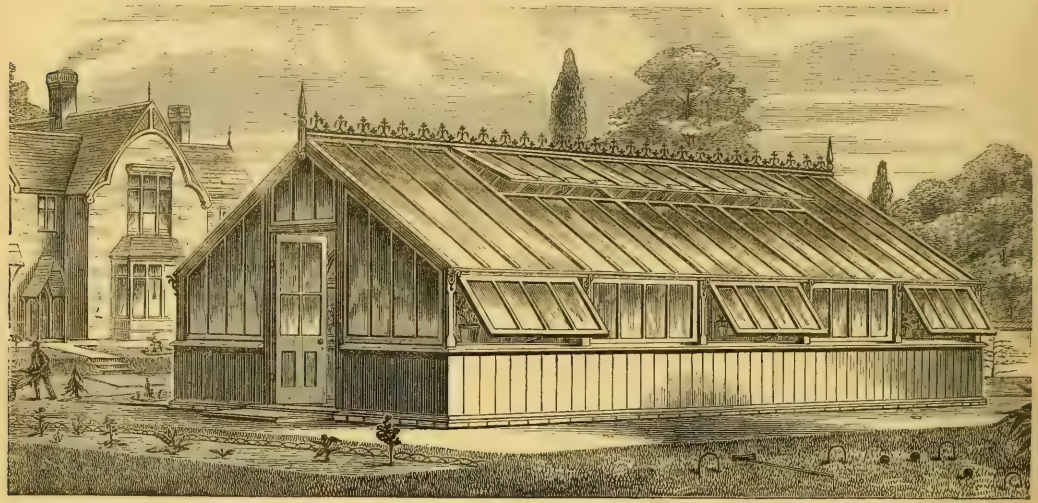
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THE

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

CRYSTAL PALACE.—TWENTY-THIRD ANNUAL EXHIBITION of FRUIT, TUESDAY and WEDNESDAY, September 24 and 25.
Tuesday, September 24, Half-a-Crown Day, Play "The Stranger." Wednesday, September 25, Play, "The Vicar of Wakefield."
N.B.—The INTERNATIONAL POTATO SHOW will be held on the same days.

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Manual on Strawberry Culture, 6d.
W. LOVELL, Strawberry Grower, Weaverthorpe, York.

ORCHARD-HOUSE TREES, Fruiting in Pots:—Peaches, Nectarines, Plums, Pears, Apples, Vines, Figs, Apricots, Cherries, Mulberries, and Oranges.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

WANTED, CUTTINGS of White and Pink coloured, Silver Variegated, Bronze and Tricolor GERANIUMS. State lowest price per 100, to
WILLIAM MILES, West Brighton Nurseries, Cliftonville, Sussex.

WANTED, 16 good Brown Turkey FIGS, 2-yr., in growing condition, and healthy; also 6 with 4 feet clean stems, and good heads. State price to
WILLIAM BARRON AND SON, Elvaston Nursery, Borrowash, Derby.

WANTED, 15,000 QUICKS planted round the Pant-y-Los Reservoir, situate about 5 miles from Newport, Monmouthshire. State age, price, and terms; also the price (and age) for same number delivered at Newport, Monmouthshire.—Address
CHARLES CULLUM, Secretary, Newport, Mon.

SUTTON'S PRIZE CYCLAMEN.

SUTTON'S NEW CYCLAMEN, "GIGANTEUM ROSEUM."
This magnificent variety is one of the best in cultivation. Several of the bulbs last year produced nearly 100 blossoms each.
FINE BULBS, 3s. 6d. and 5s. each; post-free for 3s. 9d. or 5s. 3d. | NEW SEED, 2s. 6d. and 5s. per packet, post-free.

SUTTON'S PRIZE CYCLAMEN.

CYCLAMEN PERSICUM GIGANTEUM ROSEUM SUPERBUM.—New Seed, 5s. per packet, post-free.

CYCLAMEN PERSICUM GIGANTEUM ROSEUM ALBUM.—New Seed, 2s. 6d. per packet, post-free.

CYCLAMEN PERSICUM (mixed).—New Seed, 1s. and 2s. 6d. per packet, post-free.

NEW GIANT FRENCH ANEMONES.—Superior to the Dutch varieties, producing an abundance of brilliant flowers of immense size.

NEW GIANT FRENCH ANEMONES.—Finest mixed double, 6s. per dozen, 40s. per 100; finest mixed single, 1s. 6d. per dozen, 10s. per 100.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Gloire de Nantes" (blue-violet), 4d. each, 3s. per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "La Brillante" (bright crimson-red), 6d. each, 5s. per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Mauve Clair" (beautiful pale mauve), 6d. each, 5s. per dozen.
Prices and full particulars of other Flower Roots, post-free.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

Bulbs of all Kinds.
THE GENERAL AUTUMN CATALOGUE of the New Plant and Bulb Company, Lion Walk, Colchester, containing some splendid new Lilies, Tulips, Freesias, Iris, Crocus, &c., will be ready in a few days.

Bulbs for the Season.
CHARLES TURNER'S consignments of the above have arrived in fine condition. The roots are remarkably sound, and early orders are respectfully solicited.
CATALOGUES post-free on application.
The Royal Nurseries, Slough.

To the Trade Only.
DUTCH BULBS at DUTCH PRICES.—Hyacinths, Tulips, Crocus, Narcissus, Begonias, Christmas Roses, Gloxinias, Caladiums, Novelties in Bulbs and Roots, Anemone fulgens, Snowdrops, &c. Quality extra. Prices low. Catalogue on application to
F. SANDER AND CO., Seed Growers, St. Albans.

Hyacinths, Tulips, &c.
BUTLER, McCULLOCH AND CO.'S CATALOGUE of the above is now ready, which also contains a copious list of Garden Necessaries and Culinary Requisites. Sent free and post-paid to all parts of the world.
Covent Garden Market, London, W.C.—Established upwards of a century.

Healthy Plants in Pots of
LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

The New
PRIMULA SINENSIS COMPACTA GRANDIFLORA.—The finest and largest new double white-fringed Primrose extant, of exceedingly sturdy and robust habit.
Opinion of Mr. WILLS:—"*The best white flower for bouquets.*" Price £6 6s. per dozen.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING
GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

SALES BY AUCTION.

Auction Mart, Tokenhouse Yard, London, E.C.
(Opposite the Bank of England.)

GREAT UNRESERVED SALE of DUTCH FLOWER ROOTS of the finest quality, consisting of the Choicest varieties of Double and Single HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, SNOWDROPS, &c., lotted to suit all buyers.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the Mart, on MONDAY next, at half-past 11 o'Clock precisely.

Catalogues may be had at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lower Norwood, close to the Station.
THIRD ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Castle Nursery, Lower Norwood, on TUESDAY, September 24, at 12 o'Clock precisely, by order of Mr. H. James, a choice collection of Established ORCHIDS in splendid condition, many of which are showing flower, including Phalænopsis, Odontoglossums, Dendrobium Wardianum, Oncidium prætextum, O. Rogersii, with splendid spikes; Vandas, Calanthes, Saccolabiums, six well established plants of the beautiful and rare Maxillaria lepidota, 500 TREE CARNATIONS, an assortment of STOVE and GREENHOUSE PLANTS, FERNS, Specimen CAMELLIAS, 500 TREE CARNATIONS in fine condition, and other Miscellaneous Stock, worthy the attention of the Trade and also of private buyers.

On view the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Bury Nursery, Bury Street, Edmonton.
By order of the Executrix. Entirely without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on WEDNESDAY NEXT, September 25, at 1 o'Clock precisely, unless previously disposed of by private treaty, the whole of the STOCK IN TRADE, comprising fine Specimen CAMELLIAS, PRIMULAS, PELARGONIUMS, CARDENIAS, ROSES in pots, &c., together with the UTENSILS in Trade and EFFECTS.

On view the day prior to the Sale. Catalogues on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C.

N.B.—The LEASE of the PREMISES, about 18 years unexpired, at a rent of £100 per annum, to be DISPOSED OF. The Stock may also be purchased privately. No reasonable offer will be refused. Apply to the Auctioneers as above.

Tooting, S.W.
FIFTEENTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, S.W., on THURSDAY, September 26, at 1 o'Clock precisely, a quantity of extra stock of STOVE and GREENHOUSE PLANTS, the whole of which are in healthy and thriving condition, including Lapagerias alba and rosea superba, Aralia Veitchii, Anthurium Scherzerianum, choice Orchids, comprising Vanda suavis (Veitch's variety), Saccolabiums ampullaceum and guttatum, Angræcum eburneum superbum, Calanthe Veitchii, Cattleyas, Dendrobiums, and Odontoglossums in variety, Exotic Ferns, selected Palms, a fine assortment of English-grown Camellias, well set with buds; Succulents, Hardy Herbaceous Plants, &c.

On view the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B. The ANNUAL SALE of NURSERY STOCK will take place on OCTOBER 28 and 29.

Tooting, S.W.

Re WM. ROLLISSON and SONS.—IN LIQUIDATION. Without reserve.—On TUESDAY, October 1, at 12 o'Clock punctually, there being upwards of 600 Lots.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, on the Premises, The Nurseries, Tooting, S.W., one mile from Balham Station, on TUESDAY, October 1, at 11 o'Clock, the whole of the immense stock of WINTER FLOWERING HEATHS, in 32, 48, 54, and 60 pots, including 3400 Hyemalis, 13,700 gracilis, 1950 Wilmoreana, 2000 caffra, 1000 melanthera, 280 grandiflora, a quantity of Massoni major, 100 Cerinthoides, 250 mammosa in flower, 450 scabriuscula, and 200 hybrida; 4300 EPACRIS in 48 and 54 pots; 750 ACACIA ARMATA in 48's; 7900 GENISTA FRAGRANS, 1300 BOUVARDIAS, in 54's; 3500 SOLANUMS, in 48's; 200 GREVILLEA ROBUSTA, in 48's; 200 fruiting VINES (Canes); specimen hard-wooded HEATHS, BORONIA MEGASTIGMA, PULTÆNIA ROSEA, DAPHNE INDICA RUBRA: AZALEAS, 650 Maréchal Neil ROSES in 32's and 54's, a large quantity of ORNAMENTAL FOLIAGE PLANTS for Table and Conservatory Decoration, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; of G. WHIFFIN, Esq., the Trustee, 8, Old Jewry, E.C.; of Messrs. LEWIS, MUNNS AND CO., 8, Old Jewry, E.C.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Dutch Flower Roots, for Present Planting and Spring Flowering, arriving weekly from well-known farms in Holland.—SALES every TUESDAY, WEDNESDAY, and SATURDAY during September, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, and LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

New and Rare Orchids.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, September 24, at half-past 12 o'Clock precisely, a magnificent Importation of MADAGASCAR ORCHIDS, among which is Phajus tuberculosus, a new, very distinct, and fine variety; the rare and beautiful Grammatophyllum Ellisii, in perfect health; also Eulophia scripta, new and fine; Angræcum sesquipedale, A. eburneum, and the beautiful Ouvirandra fenestralis. These Orchids have been collected by M. Léon Humblot, and are described by Professor Reichenbach in last week's *Gardeners' Chronicle*, pp. 332 and 333. At the same time will be offered a fine lot of Odontoglossum pardinum and Maxillaria grandiflora; also fine plants of Odontoglossum Edwardi, O. Hallii, Oncidium Krameriauum majus, the new Masdevallia Bella (Reich.), and other cool Orchids, the whole of which are in the finest condition, having plump, sound eyes and breaks.

On view the morning of Sale, and Catalogues had.

Ouvirandra fenestralis.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, September 24, at half-past 12 o'Clock precisely, a fine lot of this very interesting and beautiful aquatic, just brought home from Madagascar in the finest possible condition. Plants and leaves of this very magnificent plant will be on view the day of Sale, and the pieces are in the finest possible health and readily breaking.

On view the morning of Sale, and Catalogues had.

Established and Imported Orchids, Tree Ferns, CACTI, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on TUESDAY, September 24, at half-past 12 o'Clock precisely, an Importation of ONCIDIUM CRISPUM from San Paulo, Brazil; a COLLECTION of ESTABLISHED ORCHIDS, comprising some good plants of rare sorts; 12 plants of Phalænopsis Schilleriana and P. grandiflora aurea; also some good plants of Dendrobium formosum giganteum, D. Fytchianum, D. hedyosmum, D. luteolum, and Saccolabium guttatum; 40 fine specimens of Turk's-cap Cacti, just arrived in good condition; an importation of Cyathea dealbata in fine condition; a collection of Specimen Greenhouse Plants, the property of gentleman leaving his residence; 4 cases of Pumpkins.

On view morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 25, at half-past 12 o'Clock precisely, 100 AZALEA INDICA, fine plants, best named sorts, with buds; 100 CAMELLIAS, fine plants, best named sorts, with buds; 100 COCOS WEDDELLIANA, fine young plants, in single pots, about 1 foot high; 50 CHAMÆROPS EXCELSA; 8 SEAFORTHIA ELEGANS, 3 feet high; 12 DRACÆNA INDIVISA (AUSTRALIS); 4 VARIEGATED PHORMIUMS; 12 PHŒNIX RECLINATA (fine plants); 2 CYCAS REVOLUTA (fine stems with leaves); 12 PTYCHOSPERMA ALEXANDRÆ (a splendid Palm); 30 ARECA MONOSTACHYA; 12 ARECA BAUERI, and an Importation of DUTCH BULBS from Holland.

On view morning of Sale, and Catalogues had.

Hofford.
IMPORTANT SALE of ACCUMULATED NURSERY STOCK.

MR HENRY GILLARD has been directed by Messrs. Sandy & Son to SELL by AUCTION, at the Nurseries, Hofford, on TUESDAY and WEDNESDAY, September 24 and 25, at 12 o'Clock each day, a large quantity of valuable TREES and SHRUBS, including 2454 English Yews, 3 feet to 6 feet, pyramids, transplanted 1876, 1877, 1878; 275 Cupressus Lawsoniana, 6 feet to 9 feet, transplanted 1876; 1494 Tree Box, 2 feet to 3 feet; 870 Yellow Broom, 3-yr. old, transplanted 1877; 127 Silver Poplar, 7 feet to 8 feet; 290 Deutzia crenata flore-pleno, 250 Flowering Thorns, 136 Berberis Darwinii, 3 feet, transplanted 1877; 96 Hodge's Broad Leaved Holly, 2 feet, transplanted 1877; 614 Thuja occidentalis, 4 feet to 6 feet, transplanted 1876; 150 Philadelphus grandiflora, fine plants; 540 Cotoneaster Simonsii, 1650 Black Italian Poplars, 8 feet to 12 feet; 36 Silver Poplars, 9 feet; 280 Balsam Poplars, 540 strong Birch, 4000 Alders, 2600 Beech, 3 feet to 5 feet; 15,000 Spruce, 1½ foot to 2 feet; 6000 Scotch Firs, 2 feet to 2½ feet; 4000 Wych Elm, 1760 Portugal Laurel, 3 feet to 4 feet, transplanted 1876 and 1877; 600 White Broom, transplanted 1877; 350 Weymouth Pines, 6 feet to 7 feet, transplanted 1876; 1300 Common Hollies, 3 feet to 5 feet, transplanted 1875; 1700 Common Laurels, 4 feet to 5 feet, transplanted 1876; 1250 Austrian Pines, 4 feet to 6 feet, transplanted 1876; 600 Standard and Pyramidal Pears, 580 Standard and Bush Apples, Red, White and Black Currants, &c.

Catalogues can be obtained from the Auctioneer, Hofford, or at the place of Sale, where the Stock can at any time be inspected.

Chertsey, Surrey.
1 Mile from the Addlestone and 2 Miles from the Woking Stations on the South-Western Railway.
IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey, to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

TO BE LET, an ORCHARD GARDEN of 12½ Acres, for three years, 9 miles south-west of London. For particulars apply to
Mr. BOWLEY, Surveyor, 18, Abingdon Street, S.W.

To Market Gardeners and Nurserymen.

TO BE LET, from Michaelmas next, a NURSERY, of 3½ acres in extent, on the Reigate and Sutton Turnpike Road. Ground rent £14 per annum. Planted with Shrubs, Fruit Trees, and Market Garden Produce. For further particulars address,
F., Mr. Allingham, Market Place, Reigate.

To the Trade.
RICHMOND and MORTLAKE NURSERIES, SURREY.
Established 1802.

G. AND W. STEELL, of the above Nurseries, most respectfully invite the Trade to inspect their Stock, which they will find very extensive and uncommonly fine this season, and in excellent condition for moving. Early orders are respectively solicited.

To Gentlemen, Contractors, and Others.

G. AND W. STEELL also solicit the attention of all those who are making large plantations, and beg to inform them that they will feel great pleasure in giving special prices to large buyers, which they can quote extremely low, having a very large Stock on hand.

Great Eastern Railway Company.
DUTCH BULBS.

THE GREAT EASTERN RAILWAY COMPANY have now made special arrangements for the conveyance of Bulbs and Roots from Holland at a rate of 25s. per ton from Rotterdam to London, including delivery within the ordinary cartage limits. Traffic sent by this service will usually be delivered in London on the second day after shipment in Rotterdam. The Company have also instituted an Express Service for the carriage of Bulbs from Rotterdam to London at 45s. per ton, including delivery within the usual cartage limits. The Company guarantee delivery (against forfeiture of freight) the day after shipment in Rotterdam, the act of God alone excepted. The Company are prepared to quote Throughout Rates from any town in Holland to any town in England. The Bulbs should be consigned to the Company's Agents, Messrs. Hudig & Pieters, Rotterdam, to whom full instructions (stating whether the Bulbs are to be forwarded by ordinary or express train) must also be sent. Senders are requested to address their cases in full, and to mark them "Bulbs" in large letters, so as to avoid the possibility of error or delay.

For further information, address The CONTINENTAL DEPARTMENT, Liverpool Street Station, London, E.C.

Cabbage Plants—Cabbage Plants.

W. VIRGO, Wonersh Nursery, Guildford, can now supply in any quantity the following good, strong, healthy, autumn grown PLANTS:—Early Battersea, Early Enfield Market, Early Nonpareil, and Robinson's Drumhead, at 3s. per 1000; Red Pickling, 5s. per 1000.

Reference required from unknown correspondents.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Miles' New Hybrid Spiral Mignonette.
EXTRA SELECTED from the ORIGINAL STOCK.

WM. MILES has to offer new SEED of the above splendid variety, carefully saved from the finest spikes, at 1s. per packet. The usual allowance to the Trade.

The West Brighton Nurseries, Cliftonville, Sussex.

HYDRANGEA, THOMAS HOGG, new white, 30s. per 100, 5s. per doz.
GERANIUM, BRIDAL BOUQUET, new double white, 4s. per dozen.
PLUMBAGOS, strong and specimens.
WM. GROVE, Nurseryman, Hereford.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISANTHUS ROSES, DRUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narciss, 10s. per bushel, 6s. per half-bushel, 3s. 6d. per peck. Likewise Bulbs of LILIUM BULBIFERUM, 15s. per 100, 2s. 6d. per dozen. Terms cash with order. Package free. Post-office Orders payable at Vauxhall Cross.

Mrs. ALDERSON, Langley Lane, South Lambeth, Surrey.

STRAWBERRY PLANTS.—Moffat's Duke of Edinburgh, fine strong plants at 7s. 6d. per 100. Trade supplied on moderate terms.

Awarded special prize at Edinburgh, July, 1878.

GEORGE SINCLAIR, Phantassie Orchard, Prestonkirk, N.B.

For Immediate Disposal.
SPECIMEN STOVE and GREENHOUSE PLANTS.

WM. MILES has for disposal some splendid Specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Tree and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to
WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.

Highgate, London, N., and Barnet, Herts.

J. LINDEN'S Exotic Nurseries, Ghent, Belgium.—The CATALOGUE of CAMELLIAS, AZALEAS, RHODODENDRONS, PALMS, NEW PLANTS, and WHOLESALE LIST of PALMS, is now ready, and will be sent on application to J. L. as above, or to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

CLEMATIS.—Jackmanni, rubra violacea, Miss Bateman, Lucy Lemoine, Gem, and others, very strong, 50s. per 100, £20 per 1000.
RICHARD MASON,
Windlesham Nursery, Bagshot, Surrey.

T. J. HICKES' POTTERY at Shepton Mallet Flower Show.—The First Prize for Fuchsias, and Second for Roses, were gained by plants grown in our pots.

The Pottery (the Works are little more than twelve months old) is already famed for growing healthy plants.

T. J. HICKES, The Garden Pottery, Old Down, Shepton Mallet.

SURPLUS STOCK of INDIAN AZALEAS.
Bushy plants, 10 to 12 inches, without flower-buds, 9s. per doz.
Good flowering plants, 15s. per dozen.
Good flowering plants, extra large, 24s. per dozen.
In twelve good varieties. Descriptive LIST on application.
Also could spare about 2000 DAPHNE INDICA RUBRA, healthy plants, 9 to 18 inches, 9s. to 18s. per dozen.
ISAAC DAVIES, Nurseryman, Ormskirk.

To the Trade.

SEEDLING LARCH, extra fine, 1-yr. and 2-yr.
SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr.
The above are offered in quantity, and are especially fine.
LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

Pinks—Pinks—Pinks.

WOOD AND INGRAM have a large Collection of the best Exhibition Varieties in strong, well-rooted plants. This is the best season for planting.
Price 4*s.* per dozen.
For Names and Descriptions see their new CATALOGUE of imported and other Bulbs, Carnations, Picotees, &c., which is now ready, and will be forwarded free on application.
The Nurseries, Huntingdon.

CAMELLIA ALBA PLENA, with buds, £8 per 100.
" many varieties, with buds, £9 per 100.
" alba plena and other varieties, without buds, £4 15*s.* per 100.
" Admiral Campbell, with buds, £4 per 100.
" " without buds, £2 15*s.* per 100.
AZALEA INDICA, with buds, many fine varieties, £3 per 100; very strong, £4 per 100.
All plants are well formed, healthy and bushy. Package low. Carriage free to Hamburg. Three months' credit against good references.
C. W. MIETZSCH, 36, Berg Strasse, Dresden, Germany.

Special Cheap Offer.

E. HILLIER begs to offer the undermentioned, all well-grown stuff:—
ROSES, Tea and Noisette, 12*s.* per dozen; Queen of Bedders, 12*s.* per dozen; Maréchal Niel, 10*s.* and 18*s.* per dozen.
CLEMATIS, twelve best varieties, 12*s.*
PRIMULAS, double white, 12*s.* per dozen, 100*s.* per 100.
CARNATION, La Belle, 9*s.* and 12*s.* per dozen.
DAPHNE INDICA RUBRA, 12*s.* per dozen.
STOVE PLANTS, 12 choice for 12*s.*
Package will be 1*s.* on each dozen.
POT VINES and BEARING PEACH TREES.
Nurseries, Winchester.

GEORGE COOPER, The County Seed Establishment, Hertford, begs to announce that he has received his annual importation of FLOWERING ROOTS, and that his Illustrated and Descriptive CATALOGUE is now ready, and may be had post-free on application. The best sorts in every kind from the most careful growers.
SEEDS for the Garden and Farm, for Autumn Sowing
For early forcing—Early White Roman HYACINTHS, SPIRÆA JAPONICA and PALMATA, LILY OF THE VALLEY. The best value given.

Annual A B C Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

NEW AND RARE LILIES.
LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. 7*s.* 6*d.*
LILIUM COLUMBIANUM, extremely rare, 7*s.* 6*d.*
LILIUM BATEMANÆ, quite new, 7*s.* 6*d.*
LILIUM JAPONICUM KRAMERI, 5*s.*
Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30*s.*, 42*s.* and 60*s.* per dozen.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

EUONYMUS JAPONICUS, 12 to 15 inches, 25*s.* per 100, £10 per 1000.
" " MEDIO PICTA, 9 to 12 inches, in pots, 35*s.* per 100.
" " AUREA MARGINATA, 9 to 12 inches, 35*s.* per 100, £13 per 1000
" " DUC D'ANJOU, 9 to 15 inches, 35*s.* per 100.
" " MACROPHYLLA, 6 inches, 30*s.* per 100.
" " MICROPHYLLA, 6 inches, 25*s.* per 100.
IVIES, named varieties, in pots, 30*s.* per 100.
STANSFIELD BROTHERS, Southport.

HENRY WALTON, Edge End Nursery' Brierfield, near Burnley, Lancashire, begs to offer the undermentioned, in good strong plants, at the following cheap rates:—
12 CAMELLIAS, very choice English-grown, 21*s.* to 42*s.*
12 AZALEAS, very choice English-grown, 18*s.* to 36*s.*
12 FLOWERING STOVE PLANTS, very choice, 12*s.* to 18*s.*
12 ORNAMENTAL STOVE PLANTS, very choice, 12*s.* to 18*s.*
12 GREENHOUSE PLANTS, very choice, 12*s.* to 18*s.*
12 EXOTIC FERNS, very choice, 12*s.* to 18*s.*
12 EPACRIS or ERICAS, for winter blooming, very choice, 12*s.* to 18*s.*
12 TEA and NOISETTE ROSES, on own roots, 12*s.* to 18*s.*
12 H.P. ROSES, on own roots, new sorts, 1876 and 1877, 12*s.* to 18*s.*
12 BOUVARDIAS, fine plants, just coming into flower, 12*s.* to 18*s.*
12 CHRYSANTHEMUMS, strong blooming plants, 9*s.*
12 CINERARIAS, fine named sorts, fit to put on, 6*s.*
Half of any of the above sorts may be taken.
All of the above are H. W.'s selection.
H. W. also begs to offer the following New Plants, all free by post:—
COLEUS, splendid new sorts, including Kentish Fire, Lord Falmouth, George Bunyard, Exquisite, Fascination, Royalty, Novelty, Garnet, and Favourite, 1*s.* each, the set for 8*s.*
GERANIUMS, Zonal, New Life and Salmon Vesuvius, 1*s.* each.
" Zonal, Dr. Denny and White Vesuvius, 1*s.* 6*d.* each.
" Zonal, twelve of Pearson's new set for 1878, 12*s.* each.
" Zonal, six of Williams' new set for 1878, 6*s.* each.
H. W. is at present sending out a Basket, containing twelve choice WINTER BLOOMING PLANTS, composed of Camellias, Azaleas, Bouvardias, Epacris and Ericas, all warranted to bloom, for 21*s.*
A fine lot of three-year-old well ripened FRUITING VINES, will fruit well next season. Prices on application.
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EDMUND BLYTON, The Nurseries, Woodhall Spa, Horncastle.

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TREES and SHRUBS,
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TREE, PLANT, BULB, AND SEED MERCHANTS.
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NEW AND CHOICE
CYCLAMEN SEED
FOR IMMEDIATE SOWING.



CYCLAMEN PERSICUM, Williams' Superb Strain, per packet, 5*s.*, 3*s.* 6*d.*, 2*s.* 6*d.*, and 1*s.* 6*d.*
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FOR FORCING.
SPIRÆA JAPONICA, 20*s.* per 100.
" PALMATA, 25*s.* per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10*s.* 6*d.*, 15*s.*, and 20*s.* per 100. Extra large clumps at moderate prices.
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Booked for autumn, 12*s.* per dozen, 75*s.* per 100.
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LEMOINE'S GRAND NEW DOUBLE GERANIUMS.—These are decidedly the greatest acquisitions of the season 1877. Beautiful, new and varied in colour, habit of the best singles, with enormous trusses. Continually receiving testimonials to their excellence, I can warrant them to please. Twelve varieties for 6*s.*, six for 3*s.*
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CAMELLIAS, at £5, £6, £7, and £8 per 100.
CAMELLIAS, very large, at 21*s.*, 25*s.*, and 42*s.* each.
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AZALEAS, large Indian, at 21*s.*, 25*s.* 6*d.*, 30*s.*, and 42*s.* each.
AZALEA MOLLIS, from seed, at £5, £6, £7, and £8 per 100.
AZALEAS, hardy Ghent, at £4, £5, £6, £7, and £8 per 100.
Large 21*s.*, 30*s.*, and 42*s.* each.
RHODODENDRONS, at £6, £7, £8, and £12 per 100.
Larger, 31*s.*, 42*s.*, 54*s.*, and 63*s.* each.
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In several best kinds or mixed: we recommend the latter, as giving the longest display.	50 Do. do. do. 5*s.* 3*d.*
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12 Beautiful Named IXIAS and SPARAXIS, 3*s.*	The following are for blooming at Christmas:—
24 Do. do. do. 5*s.* 6*d.*	NARCISSUS, Double Roman, 18*s.* per 100, 2*s.* 6*d.* per doz.
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These are amongst the most beautiful flowers in cultivation, and only require a cold frame to grow in.	TRITELEIA ODORATA, white and lavender, 5*s.* per 100, 9*d.* per doz.

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100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.
100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
1000 SPIRÆA JAPONICA, colossal clumps, at £6.
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DRACÆNAS.—Congesta, terminalis, stricta, and Guilfoylei, in 3 and 6-inch pots. Also a few fine specimens of amabilis in 12-inch pots.
PALMS.—Latania borbonica, 15 inches, in 6-inch pots.
FERNS.—Adiantum cuneatum, Lomaria gibba, extra strong; Pteris tremula, cretica, cretica albolineata; Cyrtomium falcatum, in 3 and 6-inch pots. Also specimens of cuneatum.
Price per dozen, 100, or 1000 on application. Samples of Six varieties of mixed FERNS, in 3-inch pots, 3*s.* 6*d.* per dozen.
PELARGONIUMS in eight leading Market varieties, well established in 3-inch pots, 6*s.* per dozen. Price per 100 or 1000 on application.
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To the Trade.

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Black Hamburgh	Foster's Seedling
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Strong Planting Canes, 5s. to 7s. 6d. each.
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If over 10s. value packing and carriage free.

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ROSES, Hybrid Perpetual, strong, for forcing.
ROSES, New, for 1878.
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Bedding Plants, strong and healthy; Fuchsias, Pelargoniums, Greenhouse and Stove Plants, Ferns, &c.
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THE BEST VARIETIES IN CULTIVATION.

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" " " 18 to 24 inches high, very bushy, 60s. per dozen.
" " with ten to eighteen buds, very forward, 60s. per dozen.
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" " " 7 feet by 3½ feet through, 100s. each.
" other choice varieties, nice bushy plants, well set with bud, 24s. per dozen; larger, 42s. per dozen.
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AZALEA INDICA, many thousands, all well set for bloom, nice young healthy plants, best varieties, 12s., 15s., 18s., and 24s. per dozen.
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" larger size in variety, 3s. 6d., 5s., and 7s. 6d. each.
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SPIRÆA JAPONICA, extra strong forcing clumps, 20s. per 100.
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ORNAMENTAL TREES AND SHRUBS, &c.,
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As the Ground is disposed of for Building Purposes the IMMEDIATE REMOVAL of the Plant Houses and consequent disposal of the valuable contents is rendered imperative.

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Particulars in CATALOGUES now preparing, and will be ready a few days before the Sale.
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IT CONTAINS A DESCRIPTIVE LIST OF
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The First Consignment has been received from Holland, and all appear to be good sound Bulbs and in excellent condition.
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The Stock of these is immense this Season, and in the finest health and condition.
The Prices are as low as possible for a really good article, viz.:—
CAMELLIAS, with buds, fine healthy plants, 1 to 1½ foot high, £7 per 100.
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CAMELLIAS, extra sized plants, 5s., 10s. to 20s. each and upwards.
AZALEA INDICA, fine stuff, £5 per 100.
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AZALEA INDICA, extra size, 5s., 10s. to 20s. each and upwards.
NONE BUT REALLY FIRST-CLASS VARIETIES ARE GROWN AND SUPPLIED.
Many thousands are on hand now, and early orders are solicited by
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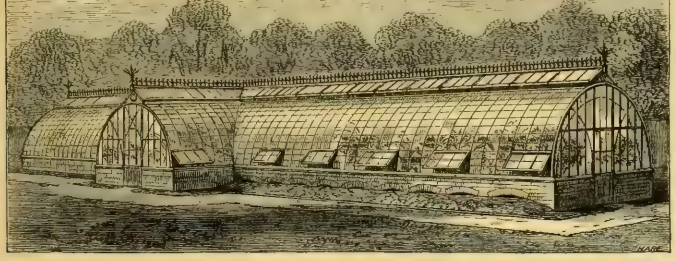
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PEAT, Brown Fibrous, superior quality for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16*s.* per ton, or £4 10*s.* per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.
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Fibrous Peat for Orchids, &c.

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BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21*s.* per ton.
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Fresh SPHAGNUM, 10*s.* 6*d.* per bag.
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PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

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Prepared by Alfred Lowe, Chemist, Chesterfield.

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SATURDAY, SEPTEMBER 21, 1878.

GOODWOOD.

(*Concluded from p.* 332.)

THE name of Goodwood is said to be derived from Godwinns, a Saxon owner with a Latinised name, who preserved this estate at the time of the Conquest—a piece of luck which few shared, and those few were generally the heads of religious houses. In 1720 it was purchased from the Compton family by the Duke of Richmond, who occupied a shooting-box here at a time when the village of Charlton, over the hill two miles beyond the racecourse, was the Melton Mowbray of that period. The Duke of Monmouth, the chief owner of the most famous pack in England, died—Squire Roper, his ally and the master of the hounds, fell from his horse at eighty-four; and the Duke of Richmond became the master, and moved the kennel to Goodwood. All the world had heard of Charlton at that time, but "Where is Goodwood?" people asked when they heard the name.

Arthur Young rode this way during the French Revolution to see the Duke's flock and Tankard Turnips and palatial kennel. He found the hounds "Some in their dining-rooms, some in their drawing-rooms," others in their sleeping-chambers, and some stretched upon a carpet of velvet lawn. In France such aristocratic dogs would have been guillotined without mercy. The Duke, who went to Ireland as Lord-Lieutenant, gave away his hounds, and the magnificent kennel is now used during the "Goodwood week" as the headquarters of a strong body of metropolitan police.

The pleasure-grounds of Goodwood, on the slope of the hill, five miles from the sea, were rendered possible by the skilfully arranged beltings for shelter. "High Wood," the principal shrubbery behind the house, is protected on all sides by thick and lofty walls of the Ilex, the Portugal Laurel, and the Yew, with park timber outside. Within this extensive pleasure-ground and shrubbery the most tender trees are safe. A Eucalyptus, planted out at 6 feet high, has attained 30 feet in six years. Cryptomerias, Deodars, and Conifers of choice kinds, are here happy as trees can be when they are quite at home. The number of foreign plants is few, however; this is an English shrubbery, chiefly of native or long-imported plants, and even the annuals and hardy herbaceous sorts that ornament an outside walk are of the good old kinds, once so popular and still beloved, though too much neglected of late years for the bedding plants.

And High Wood is a charming shrubbery, with avenues and glades and vistas, through Beeches, Yews, and foliage, sometimes of one tree, sometimes of a dozen, cool and delightful, the loved retreat, during the last week in July, ——; but the newspapers duly inform the world of the names of the most illustrious of the numerous guests who fill the great house to overflowing during the race week, and the intelligence need not be repeated here.

After strolling round High Wood and through its favourite walks, and visiting the Neptune and Minerva slab, a relic of a Roman temple at Chichester, and now made secure in a smaller temple of its own, the best of all the glades will be found in a broad and faultless lawn stretching from the windows of a tapestried

apartment through the lower part of High Wood, and through a deep fringe of evergreens on either side. Beyond is the park, and in full view the palatial kennel. One of the rooms which boasts this prospect was used as a breakfast-room by the last ducal master of the foxhounds, who used to step out on the lawn after the morning meal and wind his horn, and at the signal the pack came pell-mell across the park over one or two ha-has, and up the glade, to bay and pant around their master.

On the lawn of the flower garden of the library front there are two Cork trees, each 10 feet 4 inches in girth at 4 feet from the ground, and each most curiously enveloped in buff-coloured bark, which reaches to the small part of every branch. There is a good crop of acorns, with a roseate blush upon their cups. In good years the acorns of these two Cork trees rattle down freely from their cups when ripe, and the crop will be fairly good this year; but the Turkey Oaks here will not mature their fruit. The Cork tree sheds its evergreen leaves with the common evergreen Oak—the Ilex—from May to July, when gardeners must sweep the lawn that carries this tree, and sweep, and sweep, and sweep again. The evergreen Oak should begin to weep at about fourteen years old, but it never weeps, at any age, like a Cork tree of a hundred years.

A thousand Cedars of Lebanon were planted here by the third Duke in 1761 ; that is, about six for one now standing. The largest stands in the park, south-east of the house, and measures 24 feet round the trunk. Its spread of branches is 135 feet in diameter, and its height about 90 feet. The trunk is short, and this grand vegetable structure is principally composed of a gigantic head of many branches. I counted twenty-five at the crown. The soil of Goodwood Park proper is not generally deep enough for the Sweet Chestnuts, which are found in the annexed park surrounding the ruins of Halnaker House. The largest trunk is that of a tree standing at the south-west corner of the park. It is 20 feet 10 inches in circumference at 4 feet high, and undivided to the height of 24 feet ; the spread of branches is 82 feet across. Several of the Chestnuts in the row before the ruins are 18 feet in circumference of trunk, and the boles are generally lofty and undivided.

Mr. Rutland took me through many houses in the pleasure-grounds and kitchen garden, from those which had produced Peaches this year weighing 14 ounces to those in which are the valuable Orchids which obtained the twenty-guinea prize at the Royal Horticultural Society's exhibition. *H. E.*

New Garden Plants.

ONCIDIUM MILLIANUM, *n. sp.* *

This must be a very stately thing. The bulb at hand is 0.15 m. long, 0.025 m. broad, sharp on both sides, compressed, with four ribs and furrows each side, hence ten-ribbed. The leaf is 0.25 m. long, 0.023 m. broad. The panicle appears to be very wide, since from Mr. Jethro Mill's statement it exceeded 1 metre in length, and was much branched. I have seen a branch from the inflorescence, that flowered last April. The flowers come near the group of Oncidium planilabre, Lindl., and my first impression in England was it was near this species. Yet it has not the tooth before the column which affords a very good character of the planilabre group. The column is very short, two-winged, with two tumid cheeks under the stigmatic hollow. Therefore, adding this to a lip bent at the base and five nearly equal sepals and petals, it stands close by Oncidium anthocrena, that would appear never to have flowered in Europe. This has larger flowers, a distinct horned callus, and great spathaceous bracts, as they occur in Oncidium spathaceum itself. The flowers are equal to those of a good Oncidium leucochilum, nice fresh yellow mottled with brown, the lip brown in the middle. If I remember well it is white, yet I am not sure of this, and forgot to take a note. The plant was bought of Messrs. Low, and came with Miltonia Warscewiczii (Odontoglossum Weltoni). Hence it may be a discovery of Mr. Boxall in New Grenada. It flowered in the garden at Rendlesham Hall, Woodbridge, in Lord Rendlesham's collection. It was well observed by Mr. Jethro Mill, Lord Rendlesham's Orchid grower, to whom it is inscribed for his well-known Orchidic merits. *H. G. Rchb. f.*

MASDEVALLIA VALIFERA, *Rchb. f.*

Supra, 1874, i. 406, ii. 98.

This belongs to the greatest Masdevalliæ, and though near the "coriacea" group, it is a member of the "leontoglossæ," which have the pair sepals combined very widely in one body. Our plant has a certain quality of M. Peristeria, viz., the nerve of the side sepals is very much prominent outside, while the flower is far longer. I measured the whole length, 0.08 m., of which 0.025 m. belong to the body of the upper sepal, the rest to the tail, while the connate body of the lateral sepals measures nearly 0.05 m., and the tails 0.03. The flower is 0.02 m. high at its base. The great curiosity is that the body of the lateral sepals is strictly bent down, which gives it a most curious appearance. The whole flower is covered with a splendid gloss, as if varnished. The base is green outside and turns thus from brown shades to light brown till to the yellow of the borders and tails is reached. The odd sepal is covered inside with numerous small spots. The connate sepals have only the borders and tails yellow inside, while the remainder inside is of a most curious brown that one may paint by mixing a reddish brown (Paillard's brown rouge) with sepia. This adds a great charm to the quite extravagantly formed species. The petals are light green and the lip inside of the darkest brownish purple. The lip is very curious, inasmuch as it appears three-lobed, but only by the folding of the parts of the limb outside as is the apex. Carefully laid out it is seen to be unlobed. The surface is covered with small acute warts. I have to thank Mr. W. Bull for the great pleasure of seeing this living flower, probably the first expanded in Europe. It may be one of Mr. Shuttleworth's importations. *H. G. Rchb. f.*

DRIMIOPSIS PERFOLIATA, *Baker, n. sp.**

This is a third species of this little-known Scilloid genus, of which Dr. Kirk has sent bulbs from Zanzibar to the Kew collection, where it has flowered this present summer. It is just like the already described species in the character of its inflorescence and perianth, but very different in the leaves, which here clasp the base of the stem, so that it seems to be inserted through them and spread horizontally at or near the surface of the ground. Bulb globose, above an inch in diameter, the outer tunics greenish. Leaves two, cotemporary with the flowers in July, roundish, 2—2½ inches long, 18—21 lines broad, clasping the stem, with rounded imbricated basal lobes, broadly rounded, with an obscure cusp at the tip, spreading horizontally, rather fleshy in texture, glaucous green on the upper surface with copious blotches of bright green, the under surface all pale green and unblotched. Scape half a foot long, terete, glaucous-green, unspotted. Raceme subplicate, dense, about 1 inch long, ½—¾ inch in diameter, the upper flowers crowded, minute, and abortive, the lower very shortly pedicellate; bracts minute, lanceolate. Perianth greenish-white ; segments oblong. Filaments lanceolate-deltoid, a third as long as the perianth segments, incurved ; anthers minute. Ovary sessile, globose ; style entire, as long as the ovary. *J. G. B.*

ORNITHOGALUM (BERYLLIS) ALBOVIRENS, *Baker, n. sp.*†

This is a new species of Ornithogalum, allied to Eckloni, scilloides, and virens, received from the Cape of Good Hope from Mr. Cordukes in 1875, which flowered in the Kew collection for the first time this present summer.

Bulb globose, about 1 inch in diameter, the outer tunics greenish. Leaves about three, cotemporary with the flowers in June, linear, glabrous green, recurving, rather fleshy, 1 foot or 1½ foot long, ½—¾ inch broad low down, tapering gradually from the middle to the point. Scape 1 foot long, slender, terete, flexuose, glabrous. Raceme moderately dense, oblong, 15 — 20-flowered, about 2 inches long, 1 inch in diameter; pedicels ascending, the lower ½—¾ inch long ; bracts linear, ½—¼ inch. Perianth-segments linear-oblong, ¼ inch long, dull white, with a broad green middle. Stamens half as long as the perianth, the three outer filaments linear, the three inner lanceolate ; anthers minute, oblong ; ovary green, oblong-trigonous ; style white, as long as the ovary ; stigma capitate. *J. G. B.*

LIGUSTRUM SINENSE.*

ONE of the most elegant of shrubs is that of which we give a figure at p. 365, fig. 64. Its elliptic wavy yellowish green leaves are all but evergreen, its slender branches, which when young are downy (though not shown so in the engraving), curve gracefully outwards, and in the summer time are covered with dense panicles of small fragrant white flowers, succeeded in due time by small pear-shaped apiculate purplish berries, the size of small shot. The plant is a native of China, and was introduced by Mr. Fortune. It is mentioned and figured in our volume for 1858 ; but the figure there given does so little justice to the plant, that a better one will be acceptable. We have grown the plant for some years, and find it perfectly hardy, though possibly it might be cut back in very severe winters.

THE TREES IN THE PARKS.

I QUITE agree with the remarks which you have made (p. 340) in reference to the trees in the parks. Trees, after a certain age, cannot be resuscitated, and if we are to keep up the arborescent vegetation of our parks young trees must be planted, to take, in time, the place of the old ones, worn out. This has, to some extent, been done in Hyde Park, and the only ault to be found with these new plantations is that they are too thick. Let every alternate tree be taken out along the ride in Rotten Row, and the remainder will quickly fill up the gaps. The trees planted in the middle of the row are quite out of place, and should be removed. They are not thriving, and if they were they would, in time, foreshorten and impair the appearance of one of the finest bridle rides in England. Glass covered rides we have seen at Welbeck, but that, though costing hundreds of pounds, is nothing compared with Rotten Row ; therefore to curtail its breadth is a mistake. If some fence must be erected to separate the up from the down riders, it should consist of something else than trees.

Passing on to Kensington Gardens we come to the flower-walk, which is only a flower-walk in name, inasmuch as the shrubberies on either side of it are quite a thicket—so much a thicket, in fact, that little in the way of flowers can grow. Here and there a few ordinary border plants may be found, but until the shrubs are thinned out and little bays made in them, nothing like a fair representation of the better class of herbaceous plants now to be found in some of our London nurseries can be made there. But it is the trees to which I now wish to direct attention, and at the Kensington end of this walk may be found plantations of them so thick that even in this comparatively sunless wet season the ground below them is as bare of grass as a public road. Can it therefore be expected that trees can thrive under such circumstances? To drive avenues through them would be as disastrous as to suddenly turn a greenhouse plant out-of-doors. What is wanted is judicious thinning. Every other tree at least should be removed, and the rest should be thrown into clumps. In this way the arborescent features now existing in our parks might be maintained until young avenues and plantations were sufficiently large to take their places. In regard to these they must be formed in different positions from those already in existence. When an old tree dies it is worse than useless to plant another in its place, as has been attempted in an old avenue leading from Baron Grant's house to Kensington Palace. Fresh ground must be broken in situations suitable both for avenues and clumps, and the soil must be properly prepared for their reception. In this way the wooded appearance of our parks will be maintained, and when the old trees now to be found in them die with age their demise will scarcely be remarked.

But something may yet be done with the old trees,

* *Oncidium Millianum*, n. sp.—Affine Oncidio anthocreni, Rchb f. Pseudobulbis ligulatis compressis ancipitibus utrinque quadricostatis, hinc decemcostatis ; foliis ligulatis obtuse acutis ; panicula amplissima macroclada diffusa laxiflora ; bracteis triangulis, brevissimis ; sepalis tepalisque subæqualibus oblongis acutis undulatis ; labelli basi genuflexi ; auriculis rotundatis, isthmo modico, parte antica reniformi emarginata ; callo baseos depresso subrhombeo antice tridentato ; columna crassa brevissima, tabu'a emarginata incrassata bibuccosa, alis angustis minutis. *H G. Rchb. f.*

* *Drimiopsis perfoliata*, Baker, n. sp. — Bulbo globoso ; foliis 2 synanthiis sessilibus subrotundis obtusis maculatis scapi basin late amplectentibus, lobis basalibus rotundis imbricatis ; scapo semipedali immaculato ; racemo subspicato, perianthio campanulato albo-viridulo ; filamentis lanceolato-deltoideis perianthio triplo brevioribus.

† *Ornithogalum (Beryllis) albovirens*, Baker, n. sp.—Bulbo globoso ; foliis 3 linearibus synanthiis ; carnoso-herbaceis pedalibus vel sesquipedalibus ; scapo tereti gracili subpedali ; racemo subdenso 15—20 floro ; pedicellis flore longioribus ; bracteis linearibus ; perianthii parvi segmentis oblongis albidis viridi vittatis ; filamentis exterioribus linearibus ; interioribus lanceolatis ; stylo ovario æquilongo.

* L. sinense, Loureiro, *Fl. Cochin-China*, xix., 4to ed. ; Bentham, in *Hook. Journ.* iv. 331 ; *Fl. Hongkong*, p. 215 ; Lindley, *Gard. Chron.* 1858, p. 62; Decaisne, *Flore des Serres*, 1877, p. 10.

remnants as they are of an age gone by. Because they are failing they need not necessarily on that account be cut down. Of the fine old Oaks in Merrie Sherwood scarcely one is sound; but who on that account would cut them down, except perhaps the Duke of Portland, who has scarcely left one of them standing, with the exception of the Greendale Oak—a tree of historical interest? No; by judicious lopping they may be rendered picturesque objects, as for instance the one at the "King's Arms" entrance at Kensington, a fine old Elm tied together with hoops which bind its timeworn trunk together; the branches of this, having been lopped at different heights, are pushing young wood which may keep the old trunk hale for many years to come. Even when lifeless an old tree overrun with Ivy or Virginian Creeper, is by no means unattractive, provided the position and surroundings be suitable. Examples of this may be seen near the Powder Magazine, and near the Superintendent's new house. In country parks new clumps and isolated trees are continually being planted to form a succession to such as are worn out, and why should not this be done in our public parks? As to planting for profit that must not be thought of; but I can affirm that the thinnings of the trees in Kensington Gardens, especially in the neighbourhood of the Round Pond, would realise a sum that would go some way towards reimbursing the Government for the expenses incurred in forming new woods.

The natural timber of Hyde Park is Elm, but it also contains some fine Spanish Chestnuts, and there is at least one clump, consisting of the different species of Ash—a circumstance that leads me to another aspect of my subject, and that is to suggest that the new plantations should consist of clumps of the different varieties and species belonging to different genera. These, if labelled correctly, would enable planters to select the kinds of trees which appeared to grow best, and that best suited their fancy. If something of this kind were done the tree-clumps in our parks would possess even for the multitude as much interest as those of flowering or sub-tropical plants.

By the side of the Serpentine something appears to have been done to improve the tree-growth—grass glades have been formed by the sides of the walks, running into bays in which some fine tree has been isolated. The soil being shallow, resting on gravel, appears to have been stripped off and thrown into the shrub-masses, which, in consequence, are in a thriving condition. A new walk near the fountains appears to have been made with care and judgment, room being afforded in front of the shrubs for herbaceous and fine-leaved plants. I have hitherto said nothing as regards landscape effects; but there is no better way of securing these than by planting in family groups, as in the case of the Ashes to which I have just referred. This was Gilpin's plan; but at that time there was little except our native trees with which to deal. Of hardy ornamental trees we have now abundance—importations from North America, chiefly from Eastern and Western Virginia. Of some of these excellent examples may be seen at Fulham Palace and Syon House. I have visited Virginia three times within the last seven years, and found that the American trees thrive as well here as there. The time has, therefore, come when our parks should be planted with trees of a more varied character than those which they at present contain. Situations for such new plantations might be found in all our parks, from Storey's Gate to Kensington Gardens, thus uniting our three western parks in one as far as unity in the way of planting



Fig. 64.—Ligustrum sinense, the Chinese privet. (see p. 364.)

is concerned. Interesting bits of planting in the way of ornamental landscape gardening have already been carried out at Hyde Park Corner, in what is called the Dell, and around the Albert Memorial; but what I advocate is planting on a similar but bolder style with trees of an ornamental character, and by judiciously altering the contour of the ground soil might be had on the spot suitable for improved tree growth. These matters well carried out would produce landscape effects such as few parks in the country could equal. As to the roads, drives, and walks on the Knightsbridge side of the Park, they are now all that can be desired. *J. Newton, Landscape Gardener.*

VIOLETS.

Of all sweet-scented flowers Violets are the most popular, and deservedly so, for they are without rivals in the delicious perfume they exhale. There are few places, however, in which they are enjoyed to the full extent they might be, and as this is the season to set about making preparations for obtaining a supply during the winter—a time when they are more rare and valuable than at any other period—a few remarks as to the best course to pursue to ensure the greatest success may just now prove acceptable to many. It may be well to remark at the outset that, unless good healthy plants with well-developed crowns can be had, it is useless attempting to obtain Violets in winter, as only such will flower at all freely even under the best management, but, with such at hand, all else is plain sailing and easy enough, provided the aid of any ordinary garden frame and a heap of stable manure or any other fermenting material can be pressed into the service. Pot Violets are all very well for standing in rooms or greenhouses, but, to afford a continuous supply for picking, there is nothing like planting them out in a bed of soil with a little heat under them.

This is best afforded by making up a frame with a foundation of faggots for it to stand on, so that the warmth of the fermenting material may be driven under the roots by using it in the form of a lining, in which way it may easily be added to or renewed at pleasure according to the state of the weather. Used in the ordinary way of making up hot-beds it soon subsides and settles down and carries the plants with it far from the glass, besides which it becomes a solid mass, impervious to any heat the frame may have surrounding it. Standing on a hollow bottom formed in the above-named manner there is no difficulty whatever in getting as much heat as may be desired or in regulating it to the greatest nicety, as one or more of the linings may be turned at any time and fresh stuff added, the warmth from which will soon circulate and find its way among the faggots and diffuse itself through the body of soil above. The Violets are not slow in feeling this, which gives an impetus to the roots, and, with these active, the flowers are not only pushed forth but are well fed, and therefore come unusually large and fine. The way we manage here is to lay the faggots side by side, or, failing these, to use any rough prunings instead, over which we cast a good sprinkling of strong stable manure, and on that from 6 inches to a foot of old leaves after the frame has been placed in position. These are then trodden firmly down so as to prevent any further subsidence, and, when that is done, sufficient leaf-mould or light soil is added to bring the surface within a short distance of the glass so as only to leave just room enough for the foliage without actually touching, as the closer they are up the better will they succeed.

The next thing is to prepare the plants by careful lifting that good balls of earth may be secured, but, before placing them in position all runners should be taken off, with any dead or decaying leaves there may be buried up amongst the others. The distance at which to place them will depend on their size, but so long as they are far enough to stand just clear of each other that will be ample, as there will be no further growth or enlargement, and, being up so near the light, they are sure to get a sufficiency with the sun playing fully upon them. Having planted them and pressed the soil well around them, a good watering is necessary to wash their leaves clean and settle the earth about the roots, when they will at once set to work to re-establish themselves. For the next month or so they will be all the better for having the lights entirely off, that the plants may enjoy the refreshing night dews which we always get so heavily at this time of the year, and which assist so largely in keeping down red-spider, the greatest enemy to Violets when under frame culture. Should there be any appearance of this pest at the time of planting—as may readily be seen by the slightly rusty hue of the leaves—copious syringings should be given daily, and, if soapsuds are used for this purpose, these pests will quickly vanish and the plants be restored to a healthy condition.

As winter sets in, however, these syringings must be discontinued, as damp has then to be guarded against, and, should water be required, the morning of a dry sunny day is the proper time to administer it, and, if the weather is mild, the lights may be withdrawn for a few hours that any superfluous moisture may be carried off from the surface. In the event of the flowers or leaves fogging off, dry sand or a few handfuls of charcoal dust scattered between the rows is generally sufficient to absorb any excess of moisture, but the great thing is to keep on air at all times, except during very sharp frosts, that it may effect its escape. A slight crack put on at the back of the frame by raising the light with a tilt will admit of this, and all draughts or cold currents are avoided at the same time. Although Violets are very hardy, those subjected to heat in frames are soon injuriously affected by frost, and therefore must be protected against it by proper covering; but on all occasions whenever it is applied it should not remain on an hour longer than is absolutely necessary, as no class of plants suffers so quickly from confinement or want of attention as these.

Of the many varieties of Violets there now are, none surpass the old Neapolitan for delicacy of colour and sweetness of perfume, and its only drawback is its somewhat tender constitution, but for all this it is the best for frame work to get in flower during the short dull days of winter, and the old double Russian is a good companion to it. This, for freedom of bloom and hardiness of habit, is quite unsurpassed among the double kinds, and forms an admirable pot plant either trained as a tree or treated in the ordinary way, but the best plan when required for rooms is to get good strong crowns of several and make masses of them in pans or boxes of leaf-soil neatly mossed over, and group amongst them forced Lily of the Valley, the effect of which is both natural and pleasing in the extreme. The Czar, too, answers admirably for the same purpose, and is a most valuable variety for gathering during the winter, for which purpose a few lifted and placed under the foot of a sunny wall are much forwarded, or the same may be done by covering a portion of the stock with clean washed handlights, which saves disturbing them at the roots. Managed in this way, the season for these may be considerably prolonged with but very little trouble, as a slight shelter soon brings them on and keeps them at work. *J. S.*

NOTES ON FRENCH HORTICULTURE.

Mushrooms.—These are decidedly better done in France than in England. Possibly part of the undoubted superiority of French Mushrooms may arise from the places where the major part of them are grown, that is, in underground caves, ranging from 20 to 100 feet in depth from the surface. Few English cultivators who have had the opportunity of growing Mushrooms in cellars but must have been struck with the superiority of the produce and the greater ease and certainty with which they are grown in such positions, provided always, however, that the cellars are neither too cold nor too damp.

The great advantage of cave or cellar culture is the uniformity of heat and of moisture under such circumstances. All sudden or severe changes in the temperature or hygrometrical conditions of the air are unfavourable or fatal to the healthy life and growth of such funguses as the edible Mushroom. So much is this the case that Mushrooms in the open air come and go, as every observer knows, with almost any and every change of atmospheric condition. Now the deeper the cave the more steady are these two important factors in Mushroom growing—heat and moisture. The caves may be said to provide the external conditions of Mushroom culture in the best and most steady state for the purpose—the temperature from 60° to 66°; the air in that medium state in regard to moisture most congenial to the growth of the Mushroom, protects the uncovered beds from being quickly or at all dried beyond what is favourable to the Mushroom. This last is of great importance, for many years' experience convinces me that the less Mushroom beds are watered the better. Each watering involves serious risks: it may stimulate the bed to renewed production, it may also ruin it, and often does. Now the French water their beds at times, but the place as well as the mode of culture reduces the amount of water and also the risks involved in giving it to a minimum. This will appear as we proceed, but given a place to grow Mushrooms that reduces the water needed to the lowest limit, and you furnish the cultivator with three out of four of his chances of success.

But the whole of the superior success of the French in Mushroom culture must by no means be attributed to their subterranean advantages, for many of the French Mushrooms are grown in sheds, stables houses, or cellars, or in the open air, as in England. While, therefore, in the caves culture may be more certain and easy than in other places, the French growers are successful anywhere. For example, few places could have furnished more unfavourable external conditions than the central table of the horticultural annexe of the Paris Exposition. Yet even there, among other exhibits, where the air was so hot and dry that flowers had a struggle for existence, the model Mushroom has continued studded with white buttons and charming clusters of tempting looking Mushrooms. French Mushroom culture differs from ours chiefly in the character or quality of the materials employed—in the size and form of the beds—in the mode and time of gathering, and after and general treatment of the same.

Of course horse manure, spawn, soil, are the bases of Mushroom culture in France as in England; yet from the very first the practice varies. In England droppings alone are often desiderated, and these from special animals, the higher fed the better. In France the entire litter from the stables seems used, without any selection further than the careful rejection of any foreign matter, that is, neither hay, straw, or manure. Then in England it is customary to throw the droppings into ridges to sweat out some of the more gross elements or gases, and sweeten the mass; in France the litter is generally laid on the flat, about 3 or 4 feet in thickness. Many English growers avoid as they would the plague the application of water in these preliminary processes; the French make no scruple in freely watering any dry litter several times or at each turning. The greater length and porosity of their material may render this necessary. We mostly lay the manure up lightly to heat, they generally trample it down as firmly as possible. English Mushroom dung in its preparatory stages is turned over and over on every second or third day for a fortnight. The French generally leave it for a week or ten days, and seldom turn it more than two or three times at such long intervals. The manure is consequently far rougher and longer than that generally employed in England. Hard spawn in the form of bricks is also unknown in France. The spawn is exactly like the flaky pieces of white manure, full of mycelium, with which Mushroom growers in both countries are familiar, in old beds or beds in full bearing; in fact it is that, though it is sold under the names "virgin" and "made" spawn—the difference being that the virgin spawn is made by accident and the other by design—the first is found mostly in heaps of manure, the second is manufactured in beds prepared in all respects like those for Mushrooms. As soon, however, or rather just before the Mushrooms appear, the bed is broken up, and the spawn—that is, all the manure or substance of the bed permeated by spawn—is used for the spawning of other beds, or stored away in a dry, cool place for future use. The first impression of an Englishman on handling French spawn is, that the mycelium has run too far. We are familiar with that state in our brick spawn; and as the French spawn is almost white with the threads of Mushrooms, we naturally come to the same conclusion in regard to it. This is a mistake, however. Experience of its use enables me to state that it is excellent in quality, and under identically the same conditions produces Mushrooms in great abundance and of excellent quality about a fortnight sooner than good English spawn—that is, in a month from the time of setting. It seems also to be equally durable, and fills the bed more full of spawn than the English.

The French, however, seldom use spawn from old beds. In this no doubt they are wise, for though splendid crops may often be raised from such spawn there is the risk of failure from its over-development before planting—a point difficult to explain in words but so familiar to practical cultivators that most of us

could probably pick out bricks or flakes of spawn that had been pushed beyond the limits of Mushroom growing by over-heat or over-time in the manufacture. The great art in the making of French and English spawn is to arrest the running process at the right moment. Under-development and over-development of the mycelium equally renders the spawn worthless. The soil used to cover the beds is also different, and far less of it is used. Pure sand or white sandy gritty soil is that generally employed. Most of the Mushrooms sold in the Parisian markets bear traces of the covering soil on their crowns, and some of them sparkle like globes of spar from the sharp pieces of freestone or silica on their crowns. But no particular soil is used—anything available on the spot seems employed for a covering of an inch or two, seldom so much as two. The mode of soiling is similar to that employed by most English growers. The materials of the beds are pressed pretty firmly together and left for a few days or a week to prove the heat. Should that not exceed 70° to 75° the bed is spawned, the spawn being inserted in flaky pieces, larger than those used in England, and at distances of from 8 inches to 1 foot or 15 inches apart, and 1 or 1½ inch deep. After spawning, the bed is pressed firmly down and left unsoiled to see if the spawn will run, and in the case of out-of-door beds or those in cold sheds or places in cold weather, the whole is covered over with litter to accelerate the development of the spawn. In a week or so, when it shows itself running through the mass of the bed, the litter is covered with soil or sand to 1 or 1½ inch in depth, and in caves, &c., no other covering is ever applied to the surface of the beds. The French also prefer perfect darkness to light, and are careful to avoid draughts or currents of cold air.

The beds generally are very small and of ridge form, seldom exceeding in breadth or height 2 feet, many of them not being more than 4 inches in height and breadth of base. Possibly these sizes are maintained partly by the force of habit, though this breaking up of the somewhat volatile material of which the beds are formed may tend to give it greater stability, and assuredly protect the fermenting manure from most of the risks of overheatlng. On examining the materials of several Mushroom beds in bearing the greater freshness and roughness of the bed material were the most striking, characterising all of them. The ridge form is also retained, though it is difficult to perceive any advantages from such steep ridges as distinguished most of the French beds. The surface was much looser than that of most English Mushroom beds. Judged by results, however, and the closely packed way in which most of the beds were furnished with excellent Mushrooms, the form and sizes of the beds must be pronounced perfect. The modes and time of gathering are not those generally adopted in England, though not a few English growers gather their Mushrooms in masses—considering all old stems poison to succeeding crops—and also gather the buttons as young as the French growers. The Mushrooms are turned out by the roots, so that there seems a considerable sacrifice at first sight in this mode of taking the crop; experience, however, teaches us that the sacrifice is more apparent than real, for it is seldom that successional Mushrooms in a group do much good after a few are cut from it; and besides the broader pieces of spawn used and its different character spreads the Mushroom wider over the beds than the English spawn, which masses them more into dense clusters By gathering the Mushroom younger, too, the beds bear more freely in succession; so much is this the case that most of the French beds are picked over every day or every second day.

This special system of top-dressing in detail every place from which Mushrooms have been gathered, doubtless favours this rapid succession from every bearing centre. Each hole made by the removal of a single or a cluster of Mushrooms is at once filled up with a handful of soil, which is pressed in firmly and watered if necessary. Fresh Mushrooms appear in an incredibly short time from their old centres, and in this way the tiny beds are kept in full bearing for a couple of months or more. Large Mushrooms are entirely unknown in France, at least I saw none, and know that many French cooks will have none of them in England; and there can be no doubt that in the eating of Mushrooms the French are as much in advance of us as in their cultivation, and the latter seems about as perfect as may be. The labour, skill, and capital devoted to Mushroom culture around Paris are enormous, and the quantity grown for home consumption and exportation, espscially to England, very large; yet the leading *champignonnistes* do not strike strangers as rich, while the men employed among the beds seem to have to struggle rather hard for a living as well as for Mushrooms. It is the old, old story over again—large returns and large expenses, leaving after all a comparatively small margin for profits between the two.

The carriage and cost of manure and produce—the price of labour, risk of failure and of loss—eat deeply into the profits. Still we have heard of fortunes being made out of Mushrooms alike in France and England; and in few pursuits could success be better merited or more useful to the community at large. For Mushrooms manufacture wholesome food out of their waste, and leave the waste almost as valuable for the land as they found it. In France the value of spent Mushroom dung as a feeding surface mulch is as widely known and as highly appreciated as in England. *D. T. Fish.*

FLOWER-GARDENING AT UPLEATHAM.

THE flower-gardening at Upleatham Hall, one of the Yorkshire residences of the Earl of Zetland, this summer has fully borne out the marked difference that the weather has this season had upon bedding plants in different parts of the country. In the southern portion of the kingdom, where as usual the plants are turned out earlier than in the North, they suffered severely through the continued cold of both the air and soil, which latter, in place of being brought up to its wonted temperature by the influence of the sun's warmth during April and May, was so chilled through the continuous wet weather as to afford anything but a genial medium for the roots. The result was that, instead of the plants at once progressing in growth, they were completely stagnated for a time, assuming the bronzy hue indicative of a hard stunted condition, which it takes a considerable time to remove. In the North, where planting-out is necessarily deferred until later, the plants escaped this chilling ordeal; the considerably less rainfall in this district also rendered the soil in a better condition; the plants grew away immediately they were turned out—a circumstance of great importance as regards the surface of the beds getting covered and fully furnished with flowers early. This summer the Northern gardens have come off better than the usually more sunny South. At Upleatham by the third week in July—the time I saw it—the flower garden was in fine condition, presenting a most effective picture, composed principally of soft tints, the planting so arranged as to avoid anything approaching the eye-burning glare invariably seen where there is a preponderance of high colours. In this Mr. Letts has evinced very good taste, with a full appreciation of the effects that would result by the association of the plants in the way they have been arranged. The site for this garden has been happily chosen, on the north side of the mansion, in a panel sunk considerably below the principal terrace, bounded on the opposite side by trees and shrubs, which serve as a background to the floral picture; here it fulfils the purpose intended without encroaching upon or interfering with any of the more distant views of the surrounding landscape—a most important consideration in the selection of a fitting place for a flower garden, too often not taken sufficiently into account, or ignored altogether.

The individual beds of which the design is composed are much less formal in shape than generally met with, a circumstance that by no means detracts from the general effect. A few of the most telling were planted as follows:—A centre plant of Dracæna australis, springing from a moderately broad band of Pelargonium Vesuvius, encircled with yellow Pyrethrum, the whole surrounded by a border of Ajuga reptans purpurea used as setting for Echeveria metallica, the bronzy leaves of the Ajuga harmonising well with the bluish metallic colour of the Echeveria, and effectually obviating its stiff formality when used alone as an edging. A pair of beds were occupied with yellow Calceolaria for centre, then a broad ring of Viola Perfection edged with Cerastium tomentosum. Another pair had for centre Bronze Pelargonium Marshal McMahon, encircled with Iresine Lindeni, edged with Echeveria metallica. Again, another pair with centre of Bijou Pelargonium inside a belt of Sandringham Lobelia edged with Echeveria. Some small circles contained in centre a single plant of Ficus elastica surrounded with Centaurea candidissima edged with Echeveria metallica. These, as will be seen, were occupied by plants we usually find employed in flower gardening, but not always arranged relatively to each other so as to produce the pleasihg effect here presented.

Apart from the principal arrangement was a large bed 16 feet diameter, the centre occupied by a single plant of Canna peruviana, set in a band of Waltham Seedling Pelargonium, surrounded by another band of Puple King Verbena, edged with Golden Yew. Another, the centre bed of a group, had in the middle a plant of Canna discolor in a carpet of Bijou Pelargonium, round which was a ring of the deep plum-coloured Pansy Admiration, inside another of yellow Pyrethrum, edged with Echeveria metallica in a broad setting of Mesembryanthemum cordifolium variegatum—a very telling combination. Another had for centre Purple King Verbena, surrounded with Mrs. Pollock Pelargonium, edged with Sandringham Lobelia: this is a moderately compact, immensely free blooming variety of an intermediate shade of blue with a prominent white eye.

At a short distance from this flower garden is a long wide border, bounding one of the principal walks, filled with an immense number of plants, principally arranged in a simple diamond pattern; here pale blue and softer tints were much in excess of red and scarlet, again exemplifying the great advantage resultant from the use of subdued colours in much greater proportion than such as are higher and brighter. The whole was equal to the best efforts in this style of gardening that we have met with. *T. Baines.*

CORSICAN CROCUSES.

AT p. 246 of the *Gardeners' Chronicle* for February 24, 1877, I pointed out the probability of the occurrence of two species of Crocus in Corsica which had been confounded under the name of minimus. Having collected Crocuses from numerous habitats in Corsica in the years 1870 and 1875, and cultivated them for several seasons, I have been enabled to satisfactorily distinguish two species separable by almost every character of value for specific identification. Several botanical authors have noticed the difference in stature, and very nearly separated them without recognising their essential specific distinction. Herbert enumerates four varieties of Gay's insularis = minimus, D.C., of which his var. major appears to be the larger mountain species, and his var. minimus the other species growing near the coast-level about Ajaccio. Marsilly, in his catalogue of Corsican plants, mentions but one species, which he calls minimus of De Candolle, but speaks of the larger flowers on the higher ground, and Vanucci in 1838 (quoted by Herbert) described the larger species (Herbert's major) as C. corsicus, though it is not clear that he recognised its distinction from Gay's insularis. As Vanucci's name "corsicus" has priority in date, I propose to retain it for the large mountain species, as distinct from De Candolle's minimus. Parlatore, in his *Flora Italiana*, vol. iii., p. 230, refers to Crocus minimus, var. β corsicus, Gay, in *Bull. de Scienc. Natur.* 1827, ii., p. 370, which is probably the larger species; and Grenier and Godron, in their *Flore de France*, vol. iii., p. 237, notice the variation in the size of the flowers without separating the species, though they enumerate the habitats of both, which, as far as my observations go, are always distinct.

Baker refers to but one species, which I gather from his description is the minimus of De Candolle, but as minimus is essentially a coast plant his habitat on the hills of Corsica and Sardinia, would apply to the other species.

As the two species have never been accurately separated or fully described, I append to this a summary of the descriptions prepared for my forthcoming monograph of the genus, in which I shall give figures of both.

CROCUS CORSICUS, Vanucci; C. insularis var. major, Herbert; C. minimus, in part, D.C.

Limb generally very broad and short for the size of the flower, averaging 15 lines long by 5½ to 6 lines broad. The three inner limbs and inner surface of outer limbs a uniform rich pale purple devoid of markings, exterior of outer limb varying from cream colour to rich golden buff, bearing three or more purple-feathered stripes,

exterior of inner limb with three distinct narrow lines, the central line extending half-way up.

Throat beardless, white.

Stigma and style bright orange-scarlet, the style branching into three towards base of anthers and the stigma shortly prolonged into subulate bifurcated terminations reaching a little below the summit of anthers, rarely overtopping them.

Anthers upright, pale orange, distinctly paler than stigma, about twice the length of filament, which is white.

Capsule on a thick tetraquetrous or triquetrous scape, 1 to 2 inches above the ground, ¾ to 1 inch long by ⅜ inch broad, terminated by a point from ⅛ to ¼ inch long. Spathe small, reaching about one-third up capsule.

Seed pear-shaped, gibbous, with one flat or slightly concave side ⅓ by ⅛ inch, light buff-brown ; keel of seed white and prominent, running into a tumid white apex, surface of seed covered with minute glandular hairs.

Leaves rigid, spreading, upper surface scarcely glabrous, central white line obscure, keel rounded with three ridges, of which the centre is the largest, an extra ridge present in the bottom of lateral channel.

Corm (cultivated) 7 to 9 lines broad by 5 to 6 lines high, with a flat base generally oblique or one-sided.

Corm tunics : main tunic of finely reticulated fibre on a membranous base. Basal tunic membranous, overlain by radiating fibres slightly tending to reticulation, and spreading over lower half of corm. Cap or upper tunic membranous, interwoven with fine reticulated fibre, the inner surface lined with a few straight equidistant fibres, which are produced a short distance above summit of corm ; top of cap open.

Spathe single, with foliaceous markings, pointed or bearing a slight indentation at its extremity.

Highlands of Corsica, at an altitude of from 2000 to 6000 feet, flowering from the end of February to April, according to altitude. Monte Rotundo, at from 5000 to 6000 feet, where it grows in prodigious quantities ; mountains above Corte ; watershed between Ajaccio and Corte, and mountains between Bastea and St. Florence. In cultivation the flowers are produced from the end of February to the middle of March. This species is evidently allied to C. Imperati, but the finely reticulated corm-coat readily distinguishes it from any one of the group of species to which C. Imperati belongs.

CROCUS MINIMUS, D.C., in part ; C. insularis, Gay, MS. ; C. insularis of Herbert, in part.

Limb short, broad, and obtuse, from 9 to 11 lines long, by 4 to 5 lines broad, deep rich purple, the three outer limbs generally darker than the inner, outer surface of outer limbs dull buff feathered with very dark purple stripes, which are occasionally fused into a continuous field over almost the entire surface of exterior limbs.

Throat unbearded, lilac (no yellow).

Tube purple or lilac.

Stigma generally much longer than anthers ; the style, which is white, divided into three, high up, and immediately produced as three divergent slightly toothed stigmata, of the same yellow tint as anthers, but occasionally pale orange.

Anthers yellow, about as long as violet filaments, considerably below summit of stigma.

Capsule small, barely ½ inch long by ¼ inch broad, on an irregularly ribbed scape, from 1½ to 2 inches long, the valves of capsule terminated by short sharp points.

Seed small, spherical, about ⅟₂₅ inch in diameter, reddish brown, with a small keel, extending from umbilical point to apex, and returned again from apex half-way down the seed as a second short keel ; surface, under a high power, slightly papillous.

Leaves very long and narrow, appearing before flowers and spreading over ; upper surface concave with an obscure white central line ; blade folded over, very narrow ; keel concave, scarcely ribbed, its margins facing the reflected edge of blade, closing over the deep lateral channel.

Corm (cultivated specimen) nearly spherical, 6 to 7 lines broad, 5 to 6 lines high.

Corm tunics : main tunic compact and cartilaginous upwards, dividing towards base into flat occasionally branching fibres, and at summit into sharp cartilaginous points, never reticulated. Basal tunic of thin radiating fibres mixed with membranous tissue and covering lower half of corm. Cap or upper tunic membranous with obscure parallel fibres and a few strong fibres at regular intervals or inner surface produced as short points just above summit of corm.

Spathe generally single, occasionally double, extending about half way up the tube, divided at the extremity, which is slightly foliaceous.

West coast of Corsica near the sea-level ; coast west of Ajaccio on the north side of bay ; Portegliolo opposite Ajaccio, on south side of bay. It has also been recorded as occurring at Cape Corso at the northern extremity of the island, and in Sardinia, but I have not been able to ascertain whether these records refer to this or C. corsicus. Crocus minimus commences to flower in Ajaccio Bay about the middle of January, continuing into March. In cultivation it is a little later than C. corsicus, not flowering till about the first week in March.

The two Corsican species are readily distinguishable by the following points—C. minimus by its small dark purple flower, yellow or pale orange stigma, much exceeding the anthers, and corm tunic consisting wholly of parallel fibres ; C. corsicus by its pale purple or lilac flowers, with distinct buff coat on outside of the three outer limbs, its much larger stature, its short orange-scarlet stigma, and closely reticulated corm coat. The two species, as far as I am aware, are geographically isolated—minimus occurring only at low levels on the coast line, and corsicus never below an altitude of 2000 feet, and reaching up to 6000 feet at least.

Whilst writing on the subject of Crocuses I would point out that what has been described as the corm-coat or tunic as a simple organ characterised by a particular structure, really consists of three distinct tunics, annually reproduced, each of which had a distinct origin and function, and often of totally dissimilar structure, the main tunic springing from the basal axis of corm in its earlier stages, and covering its entire surface, is the most characteristic and special in its structure. After the first year it becomes disarticulated from the basal point, and partially slips up over the corm surface. In addition to this there is what I have termed the basal tunic, the fibres of which do not disarticulate separately, but remain attached to a small basal disc as a radiating star-like organ, covering the base of the corm, whilst the main tunic slips up in adapting itself to the expansion of the annually reproduced corm.

Even in reticulated species the basal tunic is seldom reticulated, consisting of simple radiating fibres, which clasp over the base of the main tunic as it slips up over the corm surface. The annulæ of annulate species are corresponding organs, with rows of little teeth on their upper edge corresponding with the fibrous rays of the basal tunic of the reticulate species, and species clothed with parallel fibre.

A third tunic is what I have termed the cap, which is always confined to the crown of the corm, and consists generally of membranous layers mixed with reticulated or parallel fibre, and often arranged as a helix or overlapping spiral ; it really forms the starting-into of the membranous sheaths investing the leaves, and on its inner surface are a series of equidistant vertical fibres, which are produced as the leaf-sheath skeleton—a bunch of fibres above summit of corm, in some cases from 2 to 3 inches in length.

In some species all the three tunics are constructed on a different type. As an example I would name Crocus Fleischeri, in which the main tunic consists of branched fibres interlaced as distinct plats or strands, the basal tunic of fine parallel unbranched fibres, and the cap of closely reticulated fibre produced higher up again as a tuft of parallel fibres. In attempting to classify Crocuses by their tunics, or to accurately describe them, it is necessary to distinguish the several organs of which the tunic is composed.

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A HOLIDAY IN CARDIGANSHIRE.

THE horticultural world was certainly napping when I left London for the middle of mid-Wales on August 18 last. A most respectable horticultural paper had gravely announced that the New South Wales "Stag's-horn Fern" had been found more than once growing wild on the mountains of Wales, and that it had recently been found again on the undeniable authority of "an under-gardener." The plants were said (apologetically) to be small, whilst the amount of credulity demanded of the reader for proper belief was undoubtedly as large as that required for the digestion of the telegastrograph. Over and over again the officers of the Royal Horticultural Society had perpetrated the grim joke of advertising in your paper that a meeting of the Scientific Committee was to be held, whilst it ought to have been well known to the officers of the said Society that no meetings were due or would take place. These melancholy annual jokes are not yet over, for in your last number the members of the committee were again summoned to attend a meeting which it is well known would not take place. Things horticultural and botanical were at sixes and sevens, and the best tuberous-rooted Begonia being christened "Mrs. Doctor Todd," so your artist ventured to take a fortnight's holiday without leave, fixing his headquarters at Lampeter in Cardiganshire, and spending the first week of the time with the Cambrian Archæological Association. The British Archæological had fixed on the same week for Wisbeach, but a chance of finding Platycerium on Lampeter Mountain was a stronger attraction than a fit of ague in the fens. Norfolk, Suffolk, and Cambridge are far too like London and its suburbs for a complete change.

Lampeter is a very awkward place to get at : it takes twelve hours to get there from Hereford, and nearly as many from London. When Carmarthen is reached, and the traveller ventures on the Milford Railway to take him further north, he may be said at this point to have left hope behind. No time whatever appears to be kept on the line, and it is a common thing for the trains to stop half an hour at each station. On leaving Lampeter in the morning some of the English visitors could not get home the same day at all, but were compelled to break their journey and resume it the next day. It was on this line that a train recently stopped between stations, and the unsophisticated driver, getting off his peaceful and quiescent engine, strolled from carriage to carriage and informed the passengers that there were "some very nice Mushrooms" within sight in a grassy place in the distance, and if the passengers would like to get out and collect them he would wait for their return. Telegraph wires border the line, but a traveller may go to a good number of the stations without being able to send a message anywhere.

Of course the train from London was very late. The excellent Bishop of St. David's had promised to deliver an inaugural address at the College at 8.30 P.M., but this time had already gone by when the train lazily crawled into the little dark peaceful Lampeter station. The Bishop arrived in the darkness by this train, together with the writer and a few other archæologically-minded individuals. Lampeter has got gas, but it is not lit when the moon shines at night ; it was not lit on Monday night, August 19—a night of thick clouds and pitch-black darkness. Nearly all the people are Welsh in this town, very little English being spoken ; it was, therefore, a somewhat new sensation for the writer (who in his anger at the delay in reaching the town had forgotten the few Welsh words he once knew) to find himself amongst strange people in a strange place feeling his way by the walls to the College. This building was lit up, but not so the paths and grassy expanses by which it is approached—these were in total darkness. At two intersecting paths the landscape gardener had skilfully contrived a large pool of water, with a jet for a fountain in the centre ; into this dark refreshing pool several visitors walked. The Bishop was conducted to the College hall, but owing to the lateness of the arrivals the meeting and address were adjourned till the next evening, and so the archæologists felt and stumbled their hazardous way back to the town. A considerable number of visitors stopped (as did the writer) at the "Black Lion," where they were well entertained and taken care of in the most fatherly way by the landlord. For the first time the horses were good and strong, and in agreeable contrast with the bony screws of Abergavenny and the kicking, biting, roaring, remonstrating quadrupeds of Carnarvon.

There is little of ancient interest in Lampeter, the town being comparatively new ; most of us saw it the first time early on Tuesday morning (August 20), when it poured with rain. On my way to the church to see the great Yews I observed the abundance of Malva moschata growing by the roadside, and the magnificent Beeches and Ash trees on the Cardigan Road. The two Yews are of considerable size, but hardly comparable with others in the Principality. A sketch is here given of the one on the right of the footpath from the town (fig. 65). When I visited it, all the lower boughs were hung with pickaxes, shovels, rakes, trestles, ladders, &c., reminding the spectator of heathen fetish worship. I was reminded of this tree again a day or two afterwards on passing an inn called "The Sexton's Arms." Not far from the church is an Early Christian stone from Peterwell, formerly used as a gate-post and now with its back to the road, it stands half embedded in an old cottage wall. One half of an incised cross can still be seen, and it is by no means impossible that the stone bears some inscription on

one of its hidden faces. The stone is here illustrated as an instance of "Protective Resemblance in an Early Christian Stone." (Fig. 66.) This and many similar stones and Ogham stones do not fall victims to the road-mender simply because they "mimic" both in size and form the appearance of a common stone gate-post. "Mimicry" and its results are clearly not unknown in the inanimate world.

The rain of the early morning passed off by breakfast-time, and the first excursion was made to Dolau Cothi House and the adjoining remains of the gold mines (Gogofau) of Roman and possiby pre-Roman date. Auriferous quartz may readily be picked up in and about the caves and quarries of this place. Many antiquities of great interest are preserved in the house, ranging from the later Stone Age through the Roman and Saxon periods to more recent times. One object is an unfinished Roman *entaglio* still firmly fixed in its matrix for convenience of working. The rocks and caves belonging to the mines, clad as they are with Ferns both outside and in, and more or less embowered by trees, have a majestic effect; each cave or rock has some mythical name or story attached to it, as the "Cloch-ay-Gwenno" or Steeple of Gwenno, near the spot where some fair woman came to a sad end, and where on stormy nights she is said still to wail and cry. Not far removed from Gwenno's cave is a stone (now placed upright) of Roman date; it is four-sided, and each side shows deep depressions made in ancient times by the Roman quartz pounders. A legend attached to the stone states that long ago five saints here took refuge from the Evil One, who in spite and envy caused a fearful storm of hail to burst over their unfortunate heads: in weariness the five saints are stated to have rested heavily against the stone, and so caused the depressions. As, however, there were five saints and there are but four sides to the stone, one of the saintly maidens must have perched herself upon the top where (though commonly ignored) an unmistakable depression can undoubtedly be seen. When the weary saints were fast asleep, the Evil One carried them off to an adjoining cave and there doomed them to sleep on till a good bishop or King Arthur visited the spot, when they would be disenchanted and set free. As the blameless Bishop of St. David's stood by, together with the valuable treasurer of the society, whilst this legend was recounted, and as the five saintly ones put in no appearance, it seems clear that they must still wait a little longer for the recoming of King Arthur.

In the wall of a lodge near these mines we observed portions of a Roman column and two broken querns of large size. There are also one or two great mounds, which may possibly be tumuli; during our visit they were covered with three edible fungi, viz., Boletus edulis, Cantharellus cibarius and Agaricus rubescens. The neighbouring church at Caio was the next point of interest, as there is an inscribed stone, once a door threshold, now built into the exterior wall of the church. The stone is now greatly damaged and the only letters left read REGIN · FILIVS · NVVINTI. Here some of the party were most kindly and hospitably entertained by local friends. The Caio party went first to Llan-y-Crwys to sketch a silver chalice, and then on to see and draw an immense standing stone (Hir-faen) built into and standing high above a low wall on the county boundary above Frawncellan-Allt-goch Farm. The road over Lampeter Mountain to this stone was so long, steep, stony, and tiresome, that as the stone gradually got more and more distinct to the sight, the prospect of any dinner at Lampeter got proportionately fainter: we had however good opportunities of studying the glacial drift of the district and the glacier-cut valleys. The huge lichen-clad monolith we were in quest of stands 15 feet above the wall which encloses its base. Towards the lower part of the stone an inscription has cut by some foolish students from Lampeter College—several other large stones, said the farmer, which formerly stood near, had been broken up for mending the roads. On stopping at a little inn named Plas Newydd, near Lampeter, we observed that the hostess had an excellent and perfect set of "Crown Derby" china, together with other good specimens of old china. We were too late for dinner. In the evening the Bishop of St. David's delivered an eloquent inaugural address at the College, in which he described the antiquities of the county and district in detail. A vote of thanks was moved by Mr. C. C. Babington, Professor of Botany at Cambridge, and seconded by Professor Westwood, of Oxford; these two gentlemen, with Professor Rhys, of Oxford, gave an account of the places and objects visited during the day.

The writer of these lines was at the College Hall at 7 o'clock on Wednesday morning, sketching various antiquities belonging to the district. The attendant for security locked the sketcher in, and went away—breakfast vanished with the attendant. The carriages



FIG 65.—OLD YEW IN LAMPETER CHURCHYARD.

started at 9.30 for Llan Vaughan, near Llan-y-bythe, where, by the hedge-side in a field, stands an inscribed stone in very good condition; the legend runs TRENACATUS IC IACIT FILIVS MAGLAGNI on the left-hand side, running upwards to the top, and on the top edge of the stone is the first word, which may mean "brave wolf in battle" in Oglam characters. About this



FIG. 66.—PROTECTIVE RESEMBLANCE IN A STONE GATE-POST

place, possibly the relic of some old garden, there was a profuse growth of Hypericum calycinum. A stoppage was made at Lan-y-bythe to sketch a silver chalice and a very rude and ancient font on the way to High Mead, the residence of Colonel Evans; this gentleman entertained the entire party in the most handsome manner. High Mead is not far removed from Llanllwni, where there is a church (defensible) standing on a high and wooded hill; at the base there runs a salmon stream. Here a very serious delay took place, for a considerable number of apathetics—men, women, and clergymen—got out of the carriages, and began tea-drinking in a garden. The host and hostess were exceedingly kind, but a visit to one church (at least) was knocked on the head by the delay caused by the tea-drinking. Oh, that these amiable tea-drinkers might have a carriage entirely to themselves! A stoppage was made for work at Crug-y-Wil tumulus, and for sketching the ancient structures at Pentre Rhyddlan, on the way to Llanfihangel-ar-Arth, where in the churchyard is preserved the famous HIC IACIT VLCAGNUS FIVS SENOMAGI I stone, with a second stone of less interest, now in an upright position (but upside down), inscribed with a large and several smaller crosses: this latter is the lid of an old stone coffin. At this village the poor fasting girl, Sarah Jacobs, lived and died. It will be remembered that visitors from far and near visited this poor child, who was said to be living without eating and drinking. Some clever medical men and watchers determined to prove that she did not live without food, and so the watchers killed poor Sarah Jacobs. For this crime the girl's father and mother had to suffer a long term of imprisonment.

At the church there is a grand old clerk with long silvery hair, the exact counterpart of the Rev. M. J. Berkeley: in fact, the likeness was so exact that I was on the point of asking this clerk's opinion of a Gomphidius in my camera-lucida box. At the church of Llanwenog—the last place visited on Wednesday—there is an early Norman font of great interest, with twelve large and hideously grotesque faces carved round the bowl. In the printed report of the *Western Mail* these terrible and ugly monsters are referred to as the Twelve Apostles. This was a clear case of mistaken identity on the part of the reporter. The same paper several times printed me as "Professor Smith," a title to which I have no right. I hope I am not envious, but is not "Professor" a dubious title? What is a Professor? A man who (too often) confines himself to professing! At the evening meeting there was a capital paper by Professor (there are genuine Professors) Edmonds on "Welsh Folk-lore," and another by the Rev. B. Williams, on the "Nomenclature of Welsh Places." It poured with rain in the evening as the members felt their way in the pitchy darkness to their respective quarters. *W. G. Smith.*

(To be continued.)

AUTUMN ROSES.

ONE of the most important points in which all Roses of comparatively recent introduction should be carefully watched is that of the habit of free autumnal bloom. Until this has been well established, the title of even the finest varieties to rank as perpetuals is incomplete. There is the greater necessity for this vigilance, because true perpetuity is the chief claim to superiority that our modern Roses are able to advance over some of their summer predecessors, which in form, colour, vigour of growth, and hardiness are quite their equals, being surpassed only in the valuable property of having more than one season of bloom. Another reason for impartial examination as to this quality is, that so many novelties receiving certificates when exhibited at the meetings of societies, or which attract the commendations of adepts at exhibitions, ultimately turn out lamentably shy in autumn, mere summer Roses in fact, yielding, it may be, under peculiar circumstances, a flower or two in the later part of the year. It unfortunately happens that not a few even of established favourites are capricious and unreliable in the essential feature which gives a name to the class to which they are held to belong. Let any one walk through a large collection of Roses from the end of August till the time for lifting arrives, and he will be struck at beholding row upon row of healthy-looking trees utterly destitute of the vestige of a flower. In other cases a bloom here or there may be seen, but nothing in quantity to justify the title of perpetual, while others will be found yielding flowers till the frost cuts them off. These last are the kinds most valuable for the purposes of the general Rose public in contradistinction to the limited class concerned with exhibitions; hence the necessity for ascertaining the trustworthy autumnal blooms every year.

In the absence of Rose shows in the autumn months the aspirants for mastery of this most valuable phase of Rose lore will do well to institute Rose shows for themselves by visiting all the high-class grounds within their reach. We say "all"

a lvisedly, because the wider the field for observation and comparison, the more accurate are likely to be the facts deduced. So many conditions affect the well-doing of Roses or the opposite, that it would be erroneous to lay down the results observed at one place as representative illustrations when entirely different circumstances might be found to prevail elsewhere, or to receive those of one season as conclusive for those of an entirely different climatic character. With respect to the last point the weather since the first period of Rose-bloom has been peculiarly favourable to the development of an autumnal crop of flower, so that very many kinds will be seen in a perfection not displayed at the normal season, when Roses are expected to be at their best. There is another reason for the seasonable inspection here advocated in the fact that at the time of the summer exhibitions very few of the current novelties of the year are to be met with in flower at all; nor must it be forgotten that autumn is the best season to see Bourbons and Noisettes in true character and perfection, the lack of opportunity for which may to some extent account for their decay in popularity.

Some few varieties in flower at this period of the year were just glanced at in a paper ("Slough Nursery") in last week's *Gardeners' Chronicle*. These, so far as they go, coincide with the notes taken by the writer, who has for several years past been engaged in attempting to form an exhaustive list of reliable autumnal Roses. It is a work of time as well as labour to compile such a list, the observations of one year being frequently overturned by those of another; nevertheless a contribution towards such a desirable end is a step in the right direction. A few fairly established illustrations are given here, which will be amplified in the continuation of this paper, especially as to the quasi novelties. This first list is selected because any one can grow them who can grow Roses at all, and in any soil and situation where Roses will thrive.

Hybrid Perpetuals :—Abel Grand, Alfred Colomb, André Dunaud, *Anna Alexieff, Auguste Rigotard, Baronne Prevost, Baroness Louise Uxkull, Beauty of Waltham, C. Lefebvre, Comte Raimbaud, Countess of Oxford, Dr. Andry, Duke of Edinburgh, Dupuy Jamain, Elizabeth Vigneron, Fisher Holmes, *Général Jacqueminot, John Hopper, *La France, Madame Alfred de Rougemont, Madame Bellenden Kerr, Madame Charles Wood, Madame Domage, and Baroness Rothschild, both apt to be thin unless well fed after first blooming; Madame Victor Verdier, Mdlle. Annie Wood, Mdlle. E. Verdier, Marie Baumann, Marquise de Castellane, Paul Neron, Souvenir de Poiteau, Victor Verdier. Teas :—*Gloire de Dijon, *facile princeps;* Belle Lyonnaise, Narcisse, Safrano, indeed most of this section. Noisette:—Céline Forestier. Chinas : especially Mrs. Bosanquet. Those marked * are by far the most free. *W. D. Prior.*

(*To be continued.*)

FLORICULTURE IN PALERMO.

THE Botanical Garden, Palermo, is very rich in succulents, Cacti, Agave, &c. The former, with very few exceptions, grow and bear fruit without any shelter. Peirescia aculeata, grandiflora, spathulata, and subulata are grown by a southern wall, and were laden with ripening fruit. Cereus tetracanthus forms a mass of 9 or 10 feet high by 6 or 7 feet in width, the single stems 3—4 inches; Cereus brachiatus is 7 feet high, with eight branches; C. polypticus, 12—13 feet high, with sixteen stems, all of the same height; close to this is a flowering Agave with a flower-stem 60 feet high, 1 foot in diameter at the base; Opuntia candelabrum, some 16—17 feet high; large masses of O. spinulifera, O. sp. (Tapon di Manza), with leaves a foot in diameter; O. maxima, with large round joints; O. monocantha fructu-prolifero, and Opuntia's near relatives Consolias, so named by Lemaire in compliment to M. Console, assistant to the director of this garden, under whose kind guidance I made my visit. Further on stand two gigantic plants of Cereus Jamocuru, 9—10 feet high, with stems 9 inches thick, together with Pilocereus fulvispinus, 15 feet high, eight stems, one branching.

The species belonging to the group of Cereus grandiflorus flower freely on open balconies at Palermo. There is a fine Banana close to the Orto Botanico, consisting of Musa paradisiaca, fruiting in the open air; there are some fine Palms, two Cocos nucifera, large and stately trees; and a plant of Phœnix canariensis, with a crown 60 feet through. Among other trees may also be mentioned a gigantic Erythrina, and a Bombax Ceiba, 30 feet high; masses of Bambusa arundinacea and others, the first attaining some 6 inches in thickness.

The large and well-looking conservatory glowed with masses of Bougainvilleas, forming sheets of bloom. The species glabra, fastuosa splendens, spectabilis, and aurantiaca, were all here—the last three covering houses and walls; there is also a tank, with many aquatic plants, among which Nelumbiums are conspicuous.

THE INGHAM GARDENS.

By far the best collection of plants is to be seen in the Giardini Ingham, consisting of a garden attached to the Palazzo, and a square opposite it, once the property of Mr. Ingham, a rich Englishman, who spared neither money nor efforts in the importation and acclimatisation of new plants in Palermo. The property has since been sold, I believe, to a Sicilian nobleman, but the gardens are still under the able management of Mr. A. Stecher, director of the Ingham Gardens, as they are styled here. Mr. A. Stecher is a German, who speaks Italian fluently, and understands English. He has scientific and practical knowledge of plant-culture and an ardent love for plants. With the assistance of this climate he has really produced wonders. The grouping of the plants in the gardens is very tasteful; they stand nearly in the following order. At the gate of the square are two Ficus trees, F. nervosa and rubiginosa, very much like F. elastica; they are 20 feet high with a crown of dense foliage 40 feet through. An enumeration of plants is tedious but will best show their wonderful variety. Agave xalapensis, with a flower-stem laden with fruit; Opuntia hystrix, Agave Kerchovei elongata, Cycas revoluta, Aralia dactylifolia, 15 feet high, crown 8 feet diameter; a large Latania borbonica, Agave americana fol. var., 9 feet high, 20 feet through; A. mitræformis; A. Ixtli, 12 feet high, 15 feet diameter; A. Verschaffeltii, 10 feet high, 15 feet through, with a flower-stem 30 feet high; Yucca tricolor, four stems, 15 feet high, closely set with leaves and laden with fruit; Agave heteracantha and Jacobiana; Buonapartea stricta and glauca. Encephalartos Lehmanni, Papyrus antiquorum, with Calla ægyptiaca, in bloom, stand around a fine marble figure in a tank. Further on are two Cereus sp., Zamia sp., Dion edule, bearing a large cone; Yucca gloriosa, Cereus monstruosus, then Phœnix dactylifera, 40 feet high with immense trusses of ripening fruit; Agave Vanderdonckii, A. cyanea, A. Seemanni, A. Kerchovei macrodonta, A. dealbata hystrix, A. Inghami latifolia, A. Bonneti, A. Nissoni, Cocos Bonneti, C. australis, A. Leopoldii, Thuja compacta, Chamærops excelsa, Jubœa spectabilis, Phœnix dactylifera, 20 feet high, with nine heavy fruit trusses; Dracœna indivisa, two Araucaria excelsa, Dasylirion gracile, Araucaria Bidwilli, Phœnix leonensis. Further on are some beautiful Cedrus Deodara, 40 feet high. There also stands an Agave Salmiana, 15 feet through, sending up a flower-spike which at present is only 20 feet high, but which is 8 inches in diameter at the base; each leaf of this giant is a foot thick. Some Pelargonium bushes are 10 feet through. The fresh green of two Pinus longifolia, 20 feet high, makes a fine contrast with the surrounding plant-life, and their tufts of long pendulous needles are very pleasing. Still finer is a stately Pinus Montezumæ, whose photograph (obtained through Mr. Stecher's kindness) I enclose (fig. 67, p. 373). The tree is only 15 feet high, 20 feet through. At the time I saw the plant it was one mass of needles—no stems or twigs to be seen. The photograph, by M. Incorpora, a clever artist, who has a taste for plants, was taken much later, after a severe drought, when the tree had lost some of its beauty. Among other plants I noticed Colletia triacantha, much used here for hedges. In different parts of the gardens are large Araucaria Hookeri, Bidwilli, Cookii, Cunninghami, elegans, brasiliensis, Rulei, and excelsa. With the exception of the last-named these do not do well here, nor the few Wellingtonias I saw, it being decidedly too warm for them. Colour was given to this picture at this time of the year (February) by patches of Aloe arborescens, albo cincta, plicata, and others, all blooming, but the first most freely; in some instances with many hundreds of red corymbs.

There is a Thuja gigantea, 30 feet high, a perfect plant, and close to it are large Bignonias and Thunbergias winding up Ficus trees; Colocasia esculenta, Bambusas and Hedera in sorts. Further on are Cupressus pendula glauca, Fourcroya gigantea, Beaucarnea glauca, Yucca gloriosa with seed-pods, and another species 20 feet high with twelve stems, all filling a space of 50 feet through; a great many Salvias, and of course Camellia bushes in full bloom; Arbutus Unedo covered with fruit; Taxus baccata, 10 feet high, 20 through; some very symmetrical Thujas, 20 feet through at the base. Then, in different parts of the square, Strelitzia argentea, augusta, Reginæ, and Nicolai; this last looks quite like a Urania speciosa.

Opposite is the palace garden, connected with the first storey of the house by winding stairs, terraces, and conservatories overlooking the gardens and the sea beyond. Here is to be seen a numerous collection of Agaves, among which I noticed fine specimens of A. horrida and ferox, A. Salmiana throwing up a flower-stem a foot thick at the base; A. filifera major and minor; A. Verschaffeltii, in bloom; Yucca quadricolor, 8 feet high; a fine Yucca canaliculata, 2 feet through at the base of the stem; Brahea dulcis, Agave attenuata, americana fol. var., in many striking varieties; A. Ghiesbreghtii, A. univittata, dealbata, lophantha, Regeli, Xalapensis hybrida, and Kerchovei in many varieties; Beschorneria sp., from Mexico; Muhlenbeckia miniata, in graceful hanging masses; Nerium splendens flore-pleno, Cryptomeria elegans. Philodendron pinnatifidum does well on a wall; Poinsettia pulcherrima, is unusually large, covered with its glowing bracts, as large as the leaves and of the same shape; Dasylirion robustum, and many varieties of Phormium tenax, Dammara Brownii, and a fruiting Anona triloba. Of course Citrus myrtifolius and the Mandarine Orange and Lemon trees dot the green landscape with their golden fruits. Bambusa viridis, striata, nigra, and gracilis; large trees of Schinus molle, covered with trusses of berries—its foliage is as graceful in a bouquet as any Fern; Ceratonia siliqua and Cercis siliquastrum. A conspicuous point in the garden is formed by three stems of Phœnix dactylifera, with crowns each 40 feet through, and each leaf some 20 feet long. One of the crowns was shot off by a cannon-ball during the last Revolution; Viburnum tenax and Camellias in many varieties, the finest being the buff incarnata, some in full bloom. Still more noteworthy are Chamærops Fortunei and macrocarpa, Cephalotaxus Fortunei, Libocedrus chinensis, Aralia reticulata, Dracœna indivisa lineata, Musa Ensete, and paradisiaca; Duranta Ellisii, covered with yellow flower trusses; Pittosporum Tobira and undulatum, Euphorbia abyssinica, 10 feet high, 8 feet through; Beaucarnea recurvata, Buonopartea hystrix robusta, a symmetrical beauty; B. compacta, many plants of Cycas revoluta and circinalis, Yucca pendula and Smithiana, Dasylirion hastilis; a fine plant of Strelitzia Nicolai, 20 feet high. The walls are covered with Rosa Banksiæ, Maréchal Niel, and Bougainvilleas. Linum trigynum, Laurus indica and nobilis, Ficus elastica and Benjamina, Thuja Zuccarinii, Dracœna canariensis, Wigandia caracasana, Cupressus macrocarpa, Cocos australis, Ephedra species, in bloom; Olea fragrans, Crinum argenteum, Balantium antarcticum, Bignonia capensis, many Cereus, and many other plants.

There is also a lean-to Orchid-house with many fine plants. Air is admitted freely during the whole year, and the plants look very healthy. I never saw finer masses of Oncidium Papilio or a better growing Phalænopsis Schilleriana with two flower-spikes, the plant grows on a piece of dead Balantium. A. Vanda bicolor sp. struck me as being a wonderful variety; two flower-spikes were in bloom, the flowers large, well-coloured, and very fragrant — in fact, as the door of the house stood all day open, its perfume was smelt a long way off in the garden. Another consequence of the open door was that most of the blooming Orchids, Cattleyas not excepted, were fertilised by insects and bore seed-pods—perhaps not a very desirable fact, but very significant.

I cannot conclude these notes without mentioning the beautiful Villa Tasca, tastefully laid out and rich in many well kept plants. Mr. Whitaker's collection of Orchids and his splendid garden are well worth seeing. The garden of the Villa Giulia has a fine Palm walk and is close to the Orto Botanico and to the sea. Palermo enjoys an exceptional climate, the thermometer seldom falls below 50°. Plumieras are profusely grown here as large trees in tubs, and require some dark corner and slight shelter from November till March, when they stand leafless, and receive water but once every month. The best liked here are P. bicolor and acutifolia. *A Russian Visitor.*

Garden Operations.

KITCHEN GARDEN.

One of the most prominent operations which still requires attention in this department wherever suitable conditions admit of its being performed, is the cleaning and freeing the surface of the ground from weeds; by all means let this matter bevigorously prosecuted before the weather becomes too damp for such an operation. Out-of-doors planting will almost strictly be confined to such subjects as Cabbage, Lettuce, and Endive for next spring use. When the plants are fit for it let it be done in order that they may take hold of the soil before winter sets in. This period is now rapidly approaching, and therefore all such matters as those which are essentially necessary to be done before that time arrives, should be advanced under propitious conditions. This remark will be especially applicable to the Celery crop, and therefore attention should be given to its requirements so as to have it moderately well soiled up by the time frost comes. Take advantage of suitable weather for proceeding with the lifting of late crops of Potatos, as these will not be improved by being kept in the ground for a longer period. As the nights become cooler it will be advisable to close up the lights where the late crop of French Beans is planted. We have found these, if sown at the usual time for the late crop in frames, to come in and keep very well for a considerable time after frost has destroyed those outside. This is also the case with Peas, but for this purpose it is necessary to employ a short-growing kind, none of which in our opinion is more suitable than Laxton's Unique, of which we possess a frameful now. If a very late crop of Radishes is esteemed, the seed should be sown in a frame without further delay. Make preparations in the frame ground for Cauliflower plants, as these will shortly be fit for pricking out where they are to remain during the winter months. In order to keep these plants sturdy, and to prevent a too luxuriant growth in them, they should be pricked out about 6 inches apart into good strong loam, which should be placed on the surface of the soil, about 6 inches thick, and be moderately firmly pressed down. Where handlights are employed for the earliest crops, the ground should be well enriched, and be trodden down firmly, if it be of a friable nature, and the most advanced plants put in them; keep these fully exposed until such time as a protection is indispensably required. Be wary of frost coming before out-of-door Tomatos are housed. Let these fruits be fully exposed to sunshine, and as soon as they begin to change colour they may without detriment be removed to the shelves in a vinery or similar place where the ripening process will be perfected. Look well to the requirements of the plants which are located in the houses, and from which the winter supply of fresh ones is expected. Mulch the surface of the soil as soon as the existing one is covered with roots, and keep the plants well nourished by occasional supplies of manure-water. *G. T. Miles, Wycombe Abbey.*

The Mushroom-house.—Operations in connection with this useful and indispensable structure will from this time and onwards through the winter months be needing regular attention in order to keep in it the requisite degree of heat and humidity, and also to meet other requirements, as watering the beds and other subjects, which will from time to time as the season advances be introduced into it—such as Rhubarb, Seakale, Chicory for salading, and Endive for blanching. At the present time, however, the chief attention will be confined to Mushroom culture, as those beds which were spawned early in August are now coming into bearing plentifully. The materials which constitute these beds were collected together under the influence of very arid conditions, and unless they were made moderately moist at that time they will in all probability now have become very dry. See to this matter at once, and if such be the case give a plentiful supply of water at a temperature of about 90°. Mushroom-beds which are formed during the early part of the autumnal months as a rule prove to be more lasting and productive than those made at other seasons. This fact may in a great measure be attributed to having suitable conditions for preparing the materials for the purpose; we therefore advise that the beds to be made up before too much fermentation has taken place, so as prevent the chief property required being partially exhausted beforehand. A good shed is indispensable where Mushrooms are cultivated extensively. The manure, which is not required in an absolutely pure state, should be spread out until enough material is accumulated to form a bed. Then to every cubic yard or thereabouts of material add about one barrowful of good fibrous loam, well incorporate these and put them into the bed at once. As soon as fermentation takes place well ram it down, and as the heat is subsiding, spawn at about 90°; afterwards cover the surface with about 2 inches of good strong fibrous loam and well beat it down. With a little water sprinkled over the surface of the bed firmly smooth it down with the back of a shovel or a similar implement, and cover up with a few inches of hay or refuse of a similar nature. Keep the heat in the house at from 50° to 60°. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

The constant traffic to which most fruit borders are subjected in gathering the crop and managing the trees has a great tendency to render the surface hard and impervious to rain, and if not broken up all the roots nearest the wall suffer much from want of moisture. Trees so circumstanced cannot long remain in health, and although the cause of failure is little suspected, there are more losses occur through starvation brought on in this way, than result from unsuitable soil, over-cropping and all other evils combined. If we take into consideration the sharp angle at which most borders lie, and their full exposure to the sun, it must at once become apparent that if they received the whole of the rain it would not be nearly sufficient, so great and rapid is the evaporation that takes place, and the demand made by thousands of hungry roots; but when it falls to their lot to receive only a portion of what they would have were they growing under more natural conditions, it is obvious that the loss will soon make itself felt. Of all cultivated fruit trees, Peaches and Nectarines are the most impatient of being kept short of water, especially now the buds are swelling up so fast, before dispensing with the leaves by which they are aided in the work. In order to assist these, and keep them healthy as long as possible, see that the garden-engine or syringe is still made free use of whenever the weather is dry. If time will permit, labour may now be profitably employed in cutting out and removing any shoots that are not likely to be required for fruit bearing next season, the absence of which will allow full play of sun and air on those remaining, and will enable them to become more thoroughly ripened, as well as to concentrate the waning energies of the trees on the work of finishing them off. Although advocating the breaking of the crust of fruit tree borders to let in the rain that may now be expected, I by no means advise anything approaching to digging, and would interdict all use of the spade, as that is a tool totally unsuited for such an operation, and the only safe one is a fork, which may be used without doing the least injury if only thrust in 2 or 3 inches or so.

Great watchfulness will now be required in harvesting the different kinds of Apples and Pears as they come to maturity, for if gathered before they are ripe and fit they shrivel, and never attain that degree of excellence they otherwise would do. So long as they will hang without falling they are much better on the trees, but when they begin to leave their hold of their own accord it is a sure sign that the time has arrived for storing them. A safe test with Pears is to give them a gentle lift, and if they become detached by so doing without exerting any force beyond, they may be considered sufficiently forward; but instead of a general gathering of any particular kind being made, it is always the most satisfactory to take off such as appear the forwardest, as by so doing their season for being in use is considerably prolonged. As regards Apples the colour of the pips is a fair index of the stage at which they have arrived, and when these are brown the fruit is then ready for storing, but like Pears their quality is much improved by leaving them on the trees as long as they will hang with safety. Coe's Golden Drop, Reine Claude de Bavay, Ickworth Impératrice, and other late Plums will now be greatly benefited both in colour and flavour by having any overhanging leaves removed from the fruit, that they may be fully exposed to the sun. Border making and the renovating of old fruit trees will soon demand attention, and as this cannot be delayed to a much later period without adversely affecting the general success of the work, I purpose touching on it in my next paper, and meantime advantage should be taken of the weather to lay in a sufficient stock of loam or clay according to the purpose for which it may be required. In light shallow soils that are naturally hot and dry, the latter has a special value, and where it can be obtained in quantity should be used without stint. If dug out and exposed now to the atmosphere it will in a great measure become disintegrated and be in a far better condition for handling and incorporating with the old border than it otherwise would. Loam, too, chopped up and thrown together soon gets into a state of slight fermentation, which rots the living portion of the fibres and renders it suitable for the roots of the trees to lay hold of. *J. Sheppard.*

FRUIT HOUSES.

Vines.—Vines for starting early in November should be pruned by the end of the month. If the roots do not require more than the ordinary top-dressing all loose mulching may be removed immediately after the pruning is finished. Use rich compost with plenty of crushed bones or bone-dust for the encouragement of surface-roots, and let it be firmly pressed down when in a dry elastic state. Cover with fresh horse-droppings and defer watering until the Vines have quite recovered from the pruning. Outside borders hitherto exposed to the influence of the weather should now be protected from falls of cold rain by covering up with lights or shutters, elevated a foot or two above above the surface, with a good fall to the front for throwing off water. Follow up alterations and additions to borders in succession-houses, and protect the outside roots with Fern or litter. Remove every particle of young growth as a means of inducing thorough maturation of the buds, and prune as soon as the leaves part freely from the wood. Clear later houses of the relics of crops, shorten back extension growths and laterals, for the twofold purpose of plumping up the back or pruning buds and the free admission of air and light to the foliage. Ventilate freely on fine days, with fire-heat if necessary, as first-rate Grapes cannot be obtained from imperfectly ripened wood. Late Grapes intended for keeping through the winter should be ripe by the end of the month, otherwise they will shrivel when the leaves fall; if, however, doubt exists upon this important point, let steady firing, with a free circulation of air on all favourable occasions, be followed up until the uncertainty has been overcome. Apply the greatest amount of fire-heat on fine days, and reduce or shut it off altogether at nightfall, as high night temperatures only weaken the Vines at a time when they require all the rest that can be given to them. Shorten back pot Vines, and keep them in a dry place until wanted for forcing. Also cut back newly-planted Vines that have been allowed to throw out long rambling growths from the main stems. Carefully preserve all the large leaves, which must be kept free from insects; and apply fire-heat and ventilation as advised for the late Grapes. *W. Coleman, Eastnor Castle.*

Cucumbers.—Plants in full bearing will now be considerably benefited by receiving a top-dressing of three parts light loam and one part well decomposed manure, after which, if dry at the roots, they should receive a good watering. The water should be tepid and clear, as it will not be advisable to apply liquid manure until the roots have pushed well into the new soil, and which they will do speedily. Let the stopping, thinning, and tying be duly attended to, A nice growing temperature of from 70° to 80° during the day with fire should be maintained, and from 75° to 85° with sun, shutting up early—say at from half-past 2 to 3 o'clock, according to the condition of the weather—and running up to 90°: night temperature 60° to 65°. Ventilate freely during favourable weather; syringe the plants twice a day on bright days, and otherwise maintain a sweet and growing atmosphere. Plants growing in frames will require have to the linings made up weeky or fortnightly, according to the state of the weather, and fermenting material at the time the work is being performed. When the plants growing in these frames require watering let it be done sufficiently early in the day for the foliage to get dry before night, otherwise mildew may attack the plants. Young plants which have some time since been shifted into their fruiting pots and boxes will now be the better for having a little soil (composed of the same ingredients as that in which the plants are growing) added to the hillocks on which the plants have been planted in the said pots and boxes in sufficient quantity to cover the young roots. The plants will by this time have reached the third or fourth wire and have been duly stopped, and laterals resulting therefrom, must be trained regularly over the trellis, and other wise treat the plants as above advised. *H. W. Ward, Longford Castle.*

Cleopatra's Needle. — *The Standard* of the 13th inst. enumerates the following records and monuments that have been placed in the hollow pedestal on which the famous obelisk now stands:—A complete set of English coins and an Indian Empress rupee, a bronze model of the obelisk on quarter-inch scale, cast and presented by Mr. Whitreve, of Leeds, within which are preserved a translation in English of the four inscriptions of its sides, by Dr. Birch, of the British Museum; one of the Tangye hydraulic jacks employed in the lifting; a set of the *Engineer* newspaper, with descriptions and engravings; the newspapers of the day, a standard foot measure and a one-pound weight, presented by the Board of Trade; standard gauge to the one-thousandth part of an inch; a two-foot rule; Bibles in English and French, the Book of Genesis in Arabian and in Hebrew, and a pamphlet containing the 16th verse of the third chapter of St. John in 215 languages; a map of London in twenty-four sheets, on six-inch scale to the mile, presented by Mr. Stanford; many toys and trinkets and other articles too numerous to mention, except the contribution of Mrs. Dixon, who, recognising the difficulties of understanding the time-tables of *Bradshaw*, has contributed a copy of that puzzling book for the malicious bewilderment of the future New Zealander when in ages to come he shall find these relics amongst the wreck of the ruins of London.

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 21, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Sept. 23—Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY, Sept. 24—Crystal Palace: Exhibition of Fruit and International Exhibition of Potatos (two days)
Sale of Established and Imported Orchids, Cacti, Tree Ferns, &c., at Stevens' Rooms.
WEDNESDAY, Sept. 25—Sale of Bulbs and Greenhouse Plants, at Stevens' Rooms.
SATURDAY, Sept. 28—Sale of Dutch Bulbs, at Stevens' Rooms.

WE are once more upon the eve of the INTERNATIONAL POTATO EXHIBITION, and when the numerous cultivators assemble at the Crystal Palace on Tuesday next and compare notes with each other they will all have sad experiences to relate of once beautiful tubers that are now rotten and decayed, of samples that were full of prime promise, the very pick of their crops, that have within a month or two gone the way of all vegetable matter and are now one mass of corruption. If this were the sole evil resulting from the Potato disease there would be little after all to sigh over, but when from show and selected samples we come to consider the extended crops of the esculent from which our winter supplies of an important article of food are to be drawn we find that the rottenness and decay that have carried off the selected beauties have also not spared the rank and file of the crop—that the mischief is as great and extended as ever it was, and that the exhibition of 1878—the fourth the committee have held—finds the Potato grower just as far as ever from having a remedy for his great ill and himself just as powerless in the face of a most potent enemy.

If we guage the work done by the Potato Show as applied to the production of symmetry, refinement, variety, rich colouring, and perfect examples of the various kinds of Potatos, we have to acknowledge that so far its labours have been entirely successful. Nowhere in all the world can be seen more beautiful or highly finished samples of the tuber than will, in all likelihood, be seen at the Crystal Palace next week. There will be wondrous variety, colours varied and richly marked, evidences of the highest art in Potato cultivation, and relatively immense numbers. There will be tubers from all parts of the kingdom, North and South, the products of various soils and situations, and of the highest forms of culture the growers can give. All this will be seen, and all this undoubtedly tends to popularise the Potato, to extend its cultivation in certain though limited directions, and to give a stimulus to the production of new and improved kinds in the strictly exhibition sense. These are the chief results of the International Potato Show. Were it not that the tuber is subject to the most destructive disease that affects vegetable life, we might perhaps say that to produce even such limited results from annual Potato shows was something to be proud of and evidence of progress, and such it would be.

Perhaps no garden product has made greater strides in the direction of variety, cropping qualities, beauty, and improvement of table quality than has the Potato during the last ten years; the advance has been remarkable, and the infusion into our stocks of many fine American kinds, although giving us no protection from the disease, has assisted the increase of produce and given to many poor persons considerable crops that in previous years were wanting. The Potato Committee have further aided in the introduction of new kinds that were not strictly limited in exhibition qualities, but have awarded their certificates of merit to some kinds that may seldom be seen on the exhibition table, and yet be hailed presently as most valuable garden adjuncts. In all that has been done there has been shown an earnest and honest effort to improve the Potato in all respects; to popularise its cultivation and consumption, and to do the best to make it what it now is—one of the most important items in the food of the people.

But when all this has been accomplished there still remains that skeleton in our national cupboard, that fearful drawback to our mutual satisfaction, the Potato disease. After more than thirty years' experience of its operations, this as rife as ever, as insidious as ever, still to growers as patent as ever, so that we have this season again to lament immense destruction amongst the Potato crops, enormous losses to growers, and consequent great deductions from the people's food, and yet we are powerless. Scientific men have apparently done all in their power to help us, the disease has been diagnosed by fungologists, who have shown it to us in all its nakedness—its fungoid form, its mode of propagation, growth, diffusion, and operation—and now we know, as the past season has so fully shown, that at a certain time of the year the atmosphere seems to teem with the minute living spores which spread themselves all over the Potato plants and, watered by the dews and rains, are developed with marvellous rapidity, their life being death to the plant on which its preys. Probably no season since we became familiar with the Peronospora infestans has seen it more precociously active than was the case this year; the foliage was seized upon unusually early, and within a few weeks over large breadths of country scarcely a green leaf was to be seen. It may read like a grim and even sorry joke, but it was a fact that, had the long-threatened invasion of Colorado beetles taken place during the past summer, they must have speedily starved to death literally from want of food on which to prey.

Having learned what the disease is, it now remains for the practical grower of the Potato to discover a means to repress it, or at least to avert its operations. This must be the great object of Potato cultivators and gardeners if their favourite esculent is to retain its present place in garden, field, and market. We cannot endure these heavy losses continuously, and if some escape from them be not found the Potato must pass from the region of food products to that of occasional luxuries—from being a great and valuable article of commerce to becoming a casual and sparsely-grown crop, grown for pleasure and not for profit. This is an extreme picture to draw, but how far do circumstances justify it? This present year perhaps one-half the entire crop of Potatos in the kingdom is diseased; if it be so it is a great calamity; but if that be an exaggerated estimate, it may still be fair to assert that at least over the great Potato fields from which our chief markets are supplied, as well as in private gardens, one-half of the "ware" or market-size tubers are bad. Supposing the disease in its operations had been less tolerant, and the whole crop had perished, where should we be then? And this terrible result may follow any year. Looking at the early and widespread attacks of the disease this year, had a cold, rainy summer followed, our fields and garden plots of Potatos would have been but one mass of rottenness and decay. It need hardly be said that with the extended Potato cultivation of the present day such a disaster would be far greater and wider spread than any that has resulted from the disease at any time during the thirty-four years of its presence with us.

Just a twelvemonth since we reviewed the action of the Potato disease, and drew the attention of growers to the lessons to be derived from it. Nothing in the past season's experience has served to alter any material opinion then expressed, nothing to render the remarks less seasonable and appropriate now. As last year so this, the most diseased crops have been those most heavily manured, the most generously grown. Size, as a rule, has been allied to corruption, whilst tubers of moderate growth produced in soils free from stimulating elements have been the least affected. The erratic character of the fungus has been further exemplified in the taking of one sort and the leaving of the other; yet beyond trifling diversities in colour or growth there was not the least reason visible to the grower why one was sound, the other badly diseased. Some kinds, the Shaws and Regents especially, have been heavy sufferers, but these are ever amongst the worst hit, whilst the widely-grown Victoria, generally very good, is this year also much diseased. A few of the late robust sorts have come out remarkably well, and these present still the best breeders from which to look eventually for sorts that shall set the fungus attacks at defiance.

In the raising of specially precocious or early ripening sorts, and in the production of these robust late strong kinds that shall come out of the attacks comparatively scatheless, must we look for the rampart that shall hold the fell disease in check. In this direction Potato growers of all sections will do well to look, and hybridists find a useful field in which to labour. We cannot be too exacting at the first as to crop or quality, if the essential power to resist fully be existent in the kind, and when this is obtained the other requirements will soon follow. Meanwhile let Potato connoisseurs grow and exhibit their tubers to the utmost: the impetus they thus give to the cultivation of the tuber is well employed when there is so much to depress and discourage those who grow solely for profit.

—— THE ROYAL HORTICULTURAL SOCIETY AND HER MAJESTY'S COMMISSIONERS.—The sixth report of Her Majesty's Commissioners for the Exhibition of 1851 has been printed. It deals, among other things, with the relations between the Commissioners and the Society. It states the case from the Commissioners' point of view, temperately, but is not too favourable to the Society, inasmuch as but little is said of the payments made by the Society in improving the Commissioners' property; still, as the Society has not done much in the payment of rent this can hardly be wondered at. While there seems to be no immediate intention of turning the Society out, yet it is plainly intimated that the lease must be forfeited at the close of the present year. It is suggested that the ante-garden, including the site of the present Council-room and offices, might be utilised for the erection of a museum of scientific instruments, and that the Government should take over the garden as a public park or recreation ground. Public bodies move very slowly—moreover, the report is suggestive merely, as we understand it—and so there need be no immediate anxiety as to the future of the Society, though doubtless the Council, who are anxious to do all they can for horticulture, will not fail to consider the proposals of the Commissioners and be ready, when the proper time comes, with such measures as may seem to them most desirable in the interests of the Society.

—— THE PHYLLOXERA.—A REUTER'S telegram states that a convention was signed at Berne on the 17th inst., by the representatives of Germany, Austria, Spain, France, Italy, Portugal, and Switzerland, relative to the adoption of common measures to protect the Vine growing districts of those countries against the Phylloxera vastatrix.

—— THE LATE SHOW AT BRIGHTON.—We understand that the handsome silver cup given by the London, Brighton, and South Coast Railway Company to be competed for with Orchids at the late show, was easily won by Mr. RUTLAND, gr. to the Duke of RICHMOND and GORDON, at Goodwood. The show is said to have been the best for fruit that has been held in Brighton for many years, and here



FIG. 67.—PINUS MONTEZUMLE IN PALERMO. (SEE P. 370.)

also Mr. RUTLAND was very successful, taking the 1st prize for a collection of ten dishes and the highest awards in six other classes.

—— CLUB ROOT IN TURNIPS.—We have great pleasure in stating that Mr. A. S. WILSON has recently examined the club-root in Turnips, and has completely confirmed the observations of Mons. WORONIN. We have ourselves had an opportunity of examining his preparations, which are very satisfactory. The Turnips which he sent broke out in every direction with Peronospora parasitica, the common parasite on the leaves of Cruciferæ, but we do not suppose that there is any connection between the two fungi, though the matter suggests further investigation. The whole substance of the roots is infested with the parasite, exactly as the tubers of Potato are affected by the Potato murrain. *M. J. B.*

—— M. ANDRÉ'S JOURNEY IN SOUTH AMERICA.—In the form of a report to the French Government M. ANDRÉ gives a short *resumé* of his wanderings in Peru, Colombia, and Ecuador. The object of M. ANDRÉ was to examine the natural features of the countries through which he passed, and to collect specimens of plants, animals, minerals, &c. The report before us tells in the most concise form how M. ANDRÉ fulfilled his task. He traversed great part of Colombia, Ecuador, and Peru, and despatched to Europe 4300 species of dried plants, 181 plants preserved in spirits, 177 skins of beasts, 931 bird skins, 2200 insects, 993 butterflies, 78 molluscs, 166 mineral specimens, 50 specimens of Indian antiquities, 56 illustrations of costume, 350 water-colour drawings, and 7 volumes of manuscript notes. Of living plants consigned to M. LINDEN, of Ghent, the following enumeration is made :—Species, 285 in 4722 specimens, of which 1992 were Orchids (79 species); 315 Aroids (34 species); Bromeliaceæ (28 species); Ferns (25 species); 27,600 Palm seeds (21 species); and 394 seeds of various genera. M. ANDRÉ retains the specimens in his own hands, and proposes to arrange and distribute them with the aid of various assistants. The Bromeliaceæ are already in course of examination by MM. ANDRÉ and MORREN. We trust that shortly a more detailed account of M. ANDRÉ's remarkable and productive journey may be forthcoming.

—— BEGONIA ASCOTENSIS.—In Begonia ascotensis the French gardeners possess a plant that our growers would do well to look after, and that at once, for it is a gem of the first water. Go into the public parks, go into private gardens, and everywhere about Paris one is struck with the great beauty of a bright rose-flowered Begonia of the fuchsioides type, ranging in height from 1 to 2 feet. It is simply magnificent, and unequalled as a bedding Begonia; and on account of its easy culture in pots, its fine free growth, and extraordinary floriferousness, combined with flowers of a lovely shade of rose, it is better worth growing for general decorative purposes than any other French raised Begonia that we are acquainted with. The Begonia does splendidly as a bedding plant about Paris; whether it will do so about London has yet to be proved; but if it does Begonia ascotensis is the most likely plant to bring this about. If it does not, then the Begonia is not to blame. Try it in pots; we can answer for the result. Grow it for market, it will quickly make a fine plant in a 48, and if only it will travel (a point on which we have no experience) it must originate "a rage" as quickly as did the Pelargonium Vesuvius. Though we frequently met with the plant, we were unable for several days to get its name, and failed altogether to glean anything of its history. We presume it originated at Ascot, but can find no record of it. However, let this be what it may, we say again, it should be looked after, for really useful plants like this are not met with every day.

—— THE LILY TANK AT THE CRYSTAL PALACE.—Horticultural visitors to the Crystal Palace next week, and they will not be few, will not fail to admire the Lily tank, which Mr. THOMSON has this season got in finer trim than ever. The familiar red, white, and blue Nymphæas are represented by admirable examples of cultural skill, which have flowered with the greatest freedom. One of the plants, a fair sample, recently measured 12 feet in diameter, had seventy-six leaves about 16 inches in breadth, and carried a dozen blooms. But the Lilies are not the only attraction at the present time. There is the lovely little fernery near the Alhambra Court; the flower gardening on the terraces, and the carpet bedding round the rosery—plenty, in fact, to interest all who may have a leisure hour.

—— HORTICULTURAL EXHIBITIONS.—In a recent issue we commented upon the gratifying fact of a provincial newspaper having reports of no less than six horticultural exhibitions, held within the radius of its circulation, but this number has been greatly exceeded by the *Kelso Chronicle*, the number of which for September 13 contains notices of no fewer than thirteen shows, while the issue of the previous week contained eight.

—— YUCCA ALOIFOLIA VARIEGATA.—A correspondent informs us that fully as fine a plant of Yucca aloifolia variegata as that described in our last week's issue by Mr. BRUNSKILL (p. 346), and quite as well bloomed, was exhibited by an amateur at the horticultural exhibition held in Dundee on the 5th inst.

—— PICEA PINSAPO.—Mr. HENRY VILMORIN has the pleasure of possessing two of the oldest specimens in existence, outside its native country, of this truly splendid Conifer. The species was found by M. BOISSIER in the mountains of Spain, in 1839, and he sent six of the seeds collected in that year to Mr. VILMORIN'S grandfather, who planted them in the garden attached to the family château at Verrières, where two of them, and we believe the only specimens out of the half dozen that are alive, may now be seen. They are between 90 and 100 feet in height, of remarkably handsome proportions; and one is bearing cones.

—— BEGONIA MOONLIGHT. At the Chiswick Gardens of the Royal Horticultural Society Mr. BARRON has some large plants of this fine white Begonia in capital condition, displaying in a marked manner its fitness to be ranked as a most valuable autumn and winter flowering plant. But as some who have attempted its cultivation may have failed with it, it is well to set forth the practice followed by Mr. BARRON in achieving such a signal success. Begonia Moonlight is raised from cuttings, and after the cuttings have struck roots it has been found difficult to make anything like presentable plants of them, as a kind of blindness at the leaf axils supervenes. A few weeks ago a number of plants in one of the houses at Chiswick, showing this character, were partially ripened off by withholding water. A little time after came signs of starting into growth by means of shoots thrown up directly by the roots; this disposition on the part of the plants was encouraged, and they have now made fine large rounded heads 18 to 24 inches in diameter, and the branches are well clothed with flowers. It appears to be a winter-blooming plant, and the half-ripening process during summer is necessary to drive them into a free growth that produces flowers at the end of August and onwards. The Chiswick plants were first kept in the sun, then put into the shade and partially ripened off, and as soon as the new growths appeared, well looked after. It is a most useful decorative plant, and the publication of the above facts may point the way by which others may succeed in flowering it in its best condition.

—— VERONICA SALICIFOLIA.—This fine white-flowered free-blooming hardy shrub is so useful in many ways that it is a matter for wonder it is not more grown. At Hutton Hall, Mr. J. MCINDOE grows a large quantity in pots as an autumn and winter flowering plant for the conservatory; and when there is mingled with it some of the coloured varieties of the V. Andersoni section, the effect is very pretty. Those who require a good free-growing shrub to plant in cold and moist shady places, should try Veronica salicifolia. Some plants on a north aspect planted in a retentive clay, with the addition of a few cinder-ashes and other rubbish to keep it open, have done remarkably well, and are now full of blossom, and have been so for some time past. Where Aucuba japonica will grow the Veronica will be found to flourish.

—— PRIMULA JAPONICA, which, when introduced a few years ago, proved to be something more than a nine days' wonder, has not, generally speaking, fared well in English gardens, yet, as Mr. HENRY VILMORIN grows it at Verrières, it is really a splendid plant. It grows at Verrières as vigorously as a Cos Lettuce, and throws up flower-stems from 3 to 4 feet high, with whorl after whorl of flowers open at the same time.

—— THE "JOURNAL OF FORESTRY" well maintains the position it earned for itself at first starting as a sound, well-written, and very interesting journal. In the September number we are pleased to see that our views as to Hyde Park are endorsed by so competent an authority. Mr. BURROWS has a capital article on transplanting, Dr. BROWN describes *de visu* the forests of Norway, Mr. NEIL gives us a pleasant memoir of Sir ANDREW BALFOUR, the originator of scientific forestry in Scotland and of the Botanic Garden in Edinburgh. There are the usual practical articles. The publication is decidedly one of the very best that comes before us.

—— PANDANUS OR SCREW PINES.—Dr. ISAAC BALFOUR has recently published in the *Journal of the Linnean Society*, by way of precursor to a detailed monograph at some future time, not too distant we hope, a list of the species of Pandanus known to him. Fifty-three species supposed good are enumerated, with an appalling list of synonyms and references. It is impossible for any one who has not studied the genus as carefully as the author, to venture an opinion on the merits of this piece of work, but any one can see that it represents a very large amount of honest, patient industry and research. We confess we are glad to see that no less than thirteen of GAUDICHAUD'S genera are merged in the genus Pandanus.

—— PLANTS OF TURKESTAN.—Dr. REGEL has recently published a sixth *fascicle* of his descriptions of the new and rare plants of Turkestan collected by his son and by other botanists. In addition to descriptions of isolated species, we have in the present pamphlet a synopsis of the species of Carum growing in the Russian empire, similar partial lists of the genera Angelica, Ferula, Cachrys, Lonicera, Linosyris, &c. Botanists interested in the flora of Central Asia must bear these publications in mind, and also those whose duty or pleasure it is to deal with garden plants, as no doubt a considerable proportion of the plants here described will sooner or later find their way into gardens.

—— SENECIO PULCHER. — This magnificent Groundsel, though introduced now several years ago, has not become so common in our gardens as might reasonably have been expected, and as it certainly well deserves to do. In Mr. HENRY VILMORIN'S private garden at Verrières we lately saw it in fine condition—perfectly healthy and flowering most freely; but then Mr. VILMORIN had discovered where to grow it. In an open exposed position the plant almost died out, while in a comparatively shady place it thrives in the most satisfactory manner. The hint may be useful to others.

—— BEGONIA WELTONIENSIS is largely employed as a summer bedding plant in the parks and gardens of Paris, and generally with very excellent effect. As seen in the Parc Monceaux, it would appear to do best when planted in masses, as nowhere have we seen it out-of-doors in better condition than in a large oval bed there, which is edged with a broad band of Iresine Lindeni. The effect was quiet rather than striking, but rich, fresh, and very pleasing.

—— SUPERIORITY OF NORTHERN SEEDS.—M. PETERMANN has been experimenting on this subject, and has published the results of his investigations in the *Bulletin* of the Royal Academy of Belgium. He shows that seeds of Clover, Timothy grass, Scotch Fir, and Spruce gathered between 55° and 60° N. lat. are distinguished from seeds of the same species grown in more southern latitudes by their superior germinating power, as shown by the number of seedlings and their vigour, and by their superior average weight. The Clover seeds, moreover, are more free from Dodder, as that plant is rare in the North. This ought to be of importance to farmers and Northern seed growers.

—— CRYPTOGAMIC SOCIETY OF SCOTLAND.—The fourth annual conference will be held at Edinburgh, on October 9, 10, and 11, and all interested in cryptogamic botany are invited to attend. The following is the programme of arrangements:—

Wednesday, October 9.—1 P.M.—Meeting of Council at the Royal Botanic Gardens, Inverleith Row. 1.30 P.M.—The business meeting (open to all interested) will be held (by permission of the Regius Keeper) in the lecture hall at the Royal Botanic Gardens, when the President, Professor BALFOUR, will deliver an address, various papers will be read, and other business transacted. 6 P.M.—The annual dinner (the President in the chair), in the Albert Hotel, Hanover Street.

Thursday, October 10.—10 A.M.—Meet at Waverley Station, Princes Street, and proceed to Penicuik by the 10.5 train. Return from Roslin at 3.40 P.M., or from Polton at 5.20 P.M. (If the time-table is altered notice will be given.) 7 P.M.—Meeting for the examination of specimens at the Royal Botanic Gardens, Inverleith Row.

Friday, October 11.—6 A.M.—Meet in the herbarium hall, at the Royal Botanic Gardens, to examine and arrange specimens. 1 4 P.M.—Exhibition of fungi and other cryptogamic plants in the herbarium hall, Royal Botanic Gardens.

Botanists and others in the district interested in the promotion of a knowledge of the fungi and other cryptogamic plants of Scotland, are requested to collect and send in specimens (rare or common) for exhibition. They should be sent (addressed to Mr. SADLER, Royal Botanic Gardens), not later than Thursday evening, October 10, and the name of the locality and of the collector should be given. Botanists resident anywhere are requested to bring or send, for exhibition, specimens of new or rare cryptogamic plants.

—— DROPMORE.—The *World* is responsible for the announcement that the Duke of WESTMINSTER is about to purchase Dropmore. If this be correct it could hardly fall into better or worthier hands, as none of the beauties of that delightful property would be allowed to fade under the noble Duke's ownership. The *World's* paragraphist waxes eloquent on the charms of Dropmore, but scarcely exaggerates. It possesses the finest collection of Conifers in England, and owing to the favourable nature of the soil they attain a development and size such as is usually found only in "tropical" climates. The grounds are well worth a day's journey to see—it is a glimpse of fairy-land. We may add that Dropmore is, as far as gardeners are concerned, perhaps one of the most visited places in England.

—— COMPOSITION OF THE MISTLETO.—According to some recent observations of MM. GRANDEAU and BOUTON, the composition of the Mistleto differs considerably from that of the plants on which it grows, but itself differs according to the plant which forms its host. It contains much more potash and phosphoric acid than the tree on which it grows, but much less lime. The Mistleto, then, grows on the tree as a plant in the soil, taking from it the mineral matters necessary to its organisation.

—— DAHLIA PARAGON. We have received from Mr. CANNELL, of Swanley, flowers of the single-flowered Dahlia named Paragon, which we commend to the notice of all lovers of choice border-flowers. It appears to be a variety of the common show Dahlia, D. variabilis, but instead of having the full double, symmetrically-formed blooms so much prized by florists, it is reduced to its original form, and has merely a single row of some six or eight ray florets surrounding the yellow disk. These ray florets, however, are of a rich velvety marron, edged with dark crimson, and are remarkable for their quiet beauty. We may take this opportunity of recommending the single-flowered states of D. coccinea with orange-scarlet, of D. mexicana with crimson-scarlet, and of D. Cervantesii with crimson-scarlet and yellow flower-heads—all of them most remarkable for their decorative capacities, and whose affinity is scarcely suspected by those who know only the show-type of these valuable and universally grown plants. These single Dahlias, however, take high rank in the brilliant order of decorative flowers.

—— A NEW AMERICAN CHERRY.—Mr. CHARLES DOWNING, the eminent American pomologist, publishes the following description of the Ida Cherry in the columns of the current number of the American *Gardeners' Monthly*:—Fruit rather large, obtuse conical, slightly compressed; suture slight; skin pale whitish yellow, nearly covered with light bright red, more or less mottled; stalk of medium length, slender, inserted in a rather large deep cavity; flesh very tender, juicy, rich, very good, if not best quality; pit very small. It is a seedling from Conklin's Favourite, about twenty-five years old, and has borne good crops for fifteen years. The tree is a vigorous upright grower, and an abundant bearer, ripening about the same time as the May Duke.

—— ARALIA SPINOSA.—Mr. DUNN has kindly sent us some leaves and flowers of Aralia spinosa which has been growing on the lawn at Dalkeith for probably thirty years or more, and which forms a low tree about 15 feet high. There are two plants at Dalkeith about the same age and height, and both are flowering profusely at present.

—— MORTALITY AMONGST CATTLE IN SOUTH AUSTRALIA.—We have received a very interesting letter, dated Adelaide, South Australia, from Mr. GEORGE FRANCIS, respecting the grievous mortality caused by an Alga, belonging to the genus Nodularia, of which an account has been given in this journal. He says:—

"The Alga seems confined to Lake Alexandrina, as it was not observed in the river about 9 or 10 miles up, in fact where the river enters the lake the line of demarcation was well defined. The Alga exists probably at all times in greater or less quantity, but at certain seasons, after long drought, where the water is low and abnormally warm, it is developed very abundantly. It is thirty years since it was observed in large quantities, but about twelve years ago it was also observed. Several hot droughty seasons have been experienced, but nothing like that which has lately occurred. The waters in this lake, as also those of Lake Albert, are very shallow, and except in the channel, the bottom can be reached in 8 or nine feet, and over a large area near the coast in 3 or 4 feet. The current, except in flood times, is very feeble. A green unicellular Alga like Protococcus occurs in Lake Albert in sufficient quantities to make the water look green in a glass, but the Nodularia has not been observed in either lake till this season. In some lagoons connected with the Coorong, a branch of the estuary and filled with salt water, but very shallow, a red unicellular plant occurs of a dark rose when seen in depth, but only slightly pinkish in a glass, which will not keep, but in a day or two fades away with a putrescent smell. All these plants are confined to the waters of the lakes and small lagoons, and are quite unconnected with the caoutchouc-like stuff which excited so much interest a short time since. The Nodularia in Lake Alexandrina floating in the water when calm looks like lacework. It is rather lighter in density than the water, and gradually rises to the surface, where it forms a scum of greater or less thickness, getting at the edges as thick as porridge, and from 4 to 8 inches deep. Thrown upon the sandy shore it putrefies, and gives rise to the remarkable blue colouring matter, showing such a fine red fluorescence. Taken fresh by cattle it has been rapidly absorbed, and has acted as a deoxidiser of the blood, and so caused death to thousands of animals.'

The solutions retain their fluorescence as perfectly as when first received; the only change in the aqueous solution is that there is a little green sediment, which we cannot examine without destroying the specimen. *M. J. B.*

—— A PRESENT OF FRUIT TO THE LORD MAYOR.—On Tuesday last, in pursuance of an annual custom of great antiquity, the wardens and court of the Fruiterers' Company, one of the City guilds, waited upon the Lord MAYOR and the Lady MAYORESS at the Mansion House, and presented them with a splendid assortment of the fruits in season. The gift, which was tastefully laid out in the saloon, included Pine-apples, Strawberries, Grapes, Peaches, Melons, Apples, and Pears, all of the first quality. The presentation was made by Mr. Alderman KNIGHT, the acting Master, and in reply the Lord MAYOR thanked the company warmly for their gift, and also, in accordance with custom, invited them to dine with him at the Mansion House.

—— SPIRÆA PALMATA ELEGANS.—It is not long since we alluded to this plant, together with other herbaceous Spiræas; but as we have lately received some seed-vessels nearly ripe, we are induced to refer to the plant again, the more particularly as considerable interest attaches to it. In the first place it is only fair to say, that the coloured illustrations which have been published do not exaggerate its beauty. At the same time we have seen no specimen to equal S. lobata, or that form of it grown in English gardens as S. venusta. The mystery of the origin of the plant remains unsolved. It has, in our opinion, nothing whatever to do with its reputed parents, Hoteia japonica and Spiræa palmata. We think, therefore, its hybrid parentage, at least from the two plants, is not proven, and the assertion is in all probability erroneous—by no means necessarily wilfully so. The ripe seed-vessels before us are something like those of S. digitata, and, what we have not observed before in the unripe specimens previously examined, they are spirally twisted, as in S. Ulmaria. Can it be possible, then, that this plant is, after all, a form of Ulmaria, or a hybrid form of it? We think it is not a variety of that species, because the foliage is different, but the supposition that it may be a hybrid from it is borne out by the fact that the seed-pods we have examined were all barren and contained no seeds. Of course we do not deny the possibility of the plant having had the parentage imputed to it, we simply say we see no trace of such ancestry; and we know, on the other hand, how the most careful experimenters may be deceived. Lastly, we may add that the plant grown in some English gardens as S. kamschatica, with densely hairy seed-pods, is really S. vestita of WALLICH.

—— BEGONIA DISCOLOR.—We do not remember to have seen this fine old variety under more favourable circumstances than we did recently in the Parc Monceaux at Paris, where it formed the outer margin of a Rhododendron bed, somewhat under the shade of a clump of trees. The plants stood nearly 3 feet high, were in luxuriant health, and formed with the sombre-leaved Rhododendron a combination that was particularly pleasing.

—— ERYTHRINA CRISTA-GALLI.—This remarkably handsome plant is not nearly so much employed for the embellishment of flower gardens in summer as it deserves to be, on account of its bright, fresh, and beautiful foliage, and brilliant scarlet flowers. True, the superintendents of our London parks know its value, and employ it effectively and well, but always, as far as we remember, in groups or clumps, and generally with some low-growing subject carpeting the ground underneath. But it may be employed with admirable effect as single specimens for dotting on lawns, in which position it may be seen in the most charming of Parisian parks, the Parc Monceaux. Here the plants have clean stems from 18 inches to 2 feet in height, and carried splendid bushy heads of flowers a week or two ago.

—— GRAPES AT THE EDINBURGH SHOW.—We desire to add to the somewhat hurried and incomplete report of the Royal Caledonian Horticultural Society's show, given in our last, by stating that a most noteworthy exhibit in the fruit department consisted of four large bunches of Trebbiano Grapes, shown by Mr. CURROR, gardener to GEORGE DOUGLAS, Esq., Eskbank, Dalkeith. The bunches weighed respectively 15 lb., 12 lb., 10 lb., and 8 lb.—total, 45 lb.—this season's produce of the famous Vine at Eskbank, upon which grew the 26 lb. 4 oz. bunch exhibited by Mr. CURROR at the Edinburgh International Show in 1875. The Vine is about ten years old, with only one rod, 14 feet in length, and is in the most vigorous health, reflecting much credit on Mr. CURROR's care and ability as a Grape grower. There were no less than twenty classes for Grapes, and according to the *Scotsman* the entries in these alone numbered over 200, while something like 2000 bunches were placed on the exhibition tables. In one class there were twenty-eight competitors, who exhibited amongst them about 3 cwt. of Grapes. The 1st prize for the best eight bunches went to Mr. A. KIRK, Ernespie; and for four to Mr. HAMMOND, gardener to Sir WILFRED LAWSON, of Braywick, Carlisle; while the special prizes offered for the best baskets of black and white Grapes of not less than 12 lb. weight both went to Mr. JOHNSON, gardener to the Earl of STRATHMORE, Glamis Castle, who also took the highest award for twelve distinct dishes of fruit. "Fruit," writes an esteemed correspondent, "is the speciality at the Edinbugh autumn shows, and this year it was uncommonly good—much better, in fact, than was shown in 1876 at Dundee, last year at Carlisle, or this year at Preston."

—— MALCOLMIA BICOLOR. — Under this name we received from Messrs. BARR & SUGDEN for trial in the spring of the present year a small packet of seed of an annual which was said to be well adapted for bedding purposes. It was duly sown about the beginning of April, grew freely, and proved to be so well deserving of general cultivation that we are glad to have the opportunity to commend it. It is of dwarf habit, commencing to flower when about 3 inches high, and by the end of its flowering season reaching perhaps another 2 or 3 inches as the flowering shoots lengthen out. The flowers are large—fully as large as those of a good type of Virginian Stock, but they are white, and scarcely, in this instance, showed the slightest tinge of rose-colour at any stage of their development. The plants commenced to bloom at the beginning of July, and throughout the whole month were a sheet of snowy white, very pure, and strikingly attractive. We therefore look upon it as being in every way a first-class dwarf white-flowered annual, differing indeed in respect of colour from the figure published by Dr. REGEL in the *Gartenflora*, which shows rosy-tinted flowers with a white centre, but perhaps even more useful on account of its purity.

—— DEATHS FROM EATING FUNGI.—Here is the report of other deaths from eating fungi, taken from the *Middlesex Chronicle*, the unfortunate victims being doubtless misled as to the nature of the fungi eaten, through some fancied similarity to edible varieties with which they were perhaps familiar in Switzerland. The occurrence was a most painful one, and strongly enforces the necessity of those ignorant of fungi exercising great care in the gathering of the Mushroom tribe.

"An inquest was held on Thursday, by Dr. DIPLOCK, at the Cardinal Wolsey Inn, Hampton Court, respecting the deaths of ISALINE ROD and MATHILDE ANTENNOT, Swiss nurses, aged respectively twenty-three and seventeen, in the service of Mr. W. DALBY, High Elms, Hampton Court, and Saville Row, London, who met with their deaths under the following circumstances:—The eldest of the two went into the Royal Gardens at Hampton Court on Sunday morning and gathered a quantity of fungi, believing them to be Mushrooms. She took them home, cooked them, and ate them, giving her fellow-nurse some also. On Monday both were seized with violent internal pains, and upon Dr. JACK and Mr. V. HOLBERTON, surgeon, being sent for, they immediately pronounced it to be a case of poisoning. ROD died

on Tuesday and ANTENNOT on Wednesday. The jury returned a verdict in accordance with the medical testimony."

SOUTH AMERICAN ERYNGIUMS.

THE cultivated species of Eryngium may be conveniently divided into three sections according to leaf character—one with pinnatifid and spiny leaves, as in E. maritima; another in which they are nearly entire and generally cordate in outline, as in E. giganteum; and, thirdly, the group with long, linear, parallel-veined leaves, to which the following remarks allude. They are remarkably dissimilar in general habit to the other species, or, indeed, to any other set of hardy plants, with the exception of Yucca, and resemble in a striking manner many kinds of Bromeliads. They are exclusively natives of the New World, especially in South America, and several species have so far proved hardy in the southern parts of England that they may now be included in our list of hardy plants. When seen in isolated groups, more stately objects could not well be imagined, and a sight of the fine specimens at Kew—to which frequent allusion has been made—will corroborate this. [Some of them were figured in our columns in 1876, vol v., p. 76, but they are so fine that no apology is needed for again calling attention to them.] They are all easily managed in cultivation, and grow vigorously and rapidly in deep rich soil, with a plentiful supply of water in summer, and with thorough drainage. Though of sufficient hardiness to withstand the cold of our winters, they are apt to die from excessive moisture round the base of the leaves. As a preventive it is advisable when planting to place them on a slight mound, and to lay strips of turf in a circular manner to retain the water in summer. These may be taken away in the autumn, so that moisture may be quickly drained away. They may be readily propagated by suckers or by seeds; by either mode good specimens may soon be obtained by liberal treatment. There are now in cultivation about half-a-dozen species, and are all obtainable from most nurseries.

E. pandanifolium.—This is the largest growing species, with root-leaves 4 to 6 feet long, very glaucous, concave, sharply pointed, and thickly set with spines on the margins. The flower-stems attain a height of 10 to 15 feet, furnished below with numerous stem-clasping leaves. The upper two-thirds consists of an immense panicle, the branches of which are 1 foot to 15 inches long and dichotomous. The flower-heads are rather small, globose, and of a purplish hue, with a very small or no involucre.

E. Lasseauxii is a recently introduced Brazilian species, and much resembles the last, but at present is smaller in growth, with a more lax panicle, and the flowers are much darker in colour, being of a dull reddish purple. Native of Brazil.

E. eburneum.—This fine species is also of recent introduction. The root-leaves are 2 to 3 feet in length, bright green on upper surface, narrowly striped beneath, beset at the edges with rigid spines. The flower-stem rises 8 to 10 feet in height, with many broad cauline leaves on the lower half; the panicle is cylindrical in outline and is of ivory whiteness, which gives it a very ornamental appearance. The flower-heads are larger than the preceding, of a whitish colour, with a deflexed shiny involucre. It is a native of Monte Video.

E. paniculatum is much smaller than either of the preceding, with a tuft of narrow bright green root-leaves 1 to 1½ foot long, with long weak spines on the margins. Stem 3 to 5 feet high, loosely branched, the upper arranged in an umbellate manner. Flower rather large and greenish white, with a small horizontal involucre. It also inhabits Monte Video.

E. bromeliæfolium is a scarce cultivated species, much resembling the last, but larger and with more rigid and not so closely arranged spines at the edges of leaves. It has moreover a well defined striation on under-surface of leaf. A native of New Spain.

E. Serra (syn. E. platyphyllum) is a very distinct species. The radical leaves form a spreading rosette, and are 1 foot to 2 feet long, 4 inches broad, nearly flat. In the ordinary forms they are simply spinous at the margins, but in others the leaves are pinnatifid almost to the midrib, which much enhances its attractiveness. The stems are 4 to 6 feet high, few branches below the upper, umbellate, flower-heads small and globose. Native of Brazil.

E. aquaticum (syn. E. yuccæfolium) is a North-American species, belonging to the same set of Eryngiums, but as it has been many years in gardens a description of it is scarcely necessary. Suffice it to remark that it thrives as well when grown with the above-mentioned species as when treated as a sub-aquatic. *G.*

HARDY STONECROPS: SEDUMS.

(*Continued from p.* 336.)

THE perennial species to which we have now to direct attention are those which do not die down in winter, and which hence would be, by some, classed as under-shrubs. It is obvious, however, that in most cases this would be an inappropriate term as applied to a Sedum, few of which have anything like a shrubby habit even when that is qualified by the word "under." Although for the convenience of cultivators we have separated the herbaceous from the evergreen perennials, yet it must not be overlooked that the distinction is not absolute, and that difficulties may arise as to the location of particular species.

II. Perennials.

* Leaves flat and broad.

† Leaves wholly, or at least on the barren shoots, in tufts or rosettes.

12. S. SPATHULIFOLIUM, Hook., Fl. Bor. Am. i., 227 (1833), fig. 68, p. 377.

Glauco-pruinose, ultimately reddish. Branches creeping or ascending, 3—4 inches.

Upper leaves on the barren shoots forming a terminal rosette of about fifteen leaves 1—1½ inch in diameter, and producing offsets or runners from the base. Lower leaves and those of the flowering stem scattered, spreading, ½ inch by ⅜ inch, obovate spatulate, tapering to a short broad stalk; those of the flower-stem club-shaped.

Flowers numerous, yellow, ½ inch in diameter, in terminal forking cymes with 3—5 principal branches, about 3 inches long, and dividing into two divisions, bearing flowers on the upper side only.

Flower-buds ovoid acute.

Calyx-tube dilated, top-shaped; sepals oblong-obtuse, half the length of the lanceolate, acuminate, 1-nerved, keeled orange-yellow petals.

Stamens ten, anthers yellow.

Carpels glabrous, erect, narrowed into an erect style, scales yellow.—Fl. May, June.

Regel, Gartenflora (1872), t. 741; Mast. in *Gardeners' Chronicle*, v. (1876), p. 821, fig. 146; Watson, Index, N. Am. Bot. 351.

S. obtusatum of some gardens. Native of North-West America.

A distinct species, suitable for the rockery or for pot culture.

13. S. TERNATUM, Mich. Fl. Am. i., 277.

Glabrous or glaucous, barren stems, 6—8 inches, prostrate, flowering-stems erect.

Leaves ½ inch long, in whorls of three, suborbicular spatulate, crowded into rosettes at the end of the barren stems. Leaves of the fertile stem scattered, ascending or spreading, oblong-acute.

Flowers white, ½ inch diameter, 4-merous in one-sided leafy terminal 3—5 parted cymes.

Sepals oblong-obtuse.

Petals oblong-acute, twice the length of the sepals.

Anthers reddish.

Carpels glabrous.—Fl. July, August.

Bot. Register, t. 142; Bot. Mag., t. 1977; Gray, Manual, 172; Wats. Ind. 352.

Syn.—S. portulacoides, Willd.; S. deficiens, Donn, Hort. Cantab.; Anacampseros ternata, Haworth, Pl. Succ. 114; S. octagon of gardens, *fide* Haworth.

Rocky woods, Pennsylvania to Illinois.

This species, though mentioned in the older catalogues, is rarely met with in cultivation. We have not seen the flowers, the description being taken from that in the *Botanical Register* above cited.

14. S. OBTUSATUM, Gray, Proc. Am. Acad. vii. 342.

Stems prostrate, glaucous, pruinose.

Leaves rosulate, 1 by ⅜ inch, spatulate, entire, glaucous, becoming reddish green.

Flower-stems erect, terete, reddish, ultimately leafless, but marked with the scars of the fallen leaves.

Flowers yellow, ½ inch diameter, shortly pedicelled, in terminal, spreading, umbellate cymes, 1½—2 inches diameter.

Sepals oblong-acute.

Petals lanceolate, yellow, more than twice the length of the sepals.

Filaments yellow, three-fourths the length of the petals; anthers yellow.

Carpels green, ultimately orange, lanceolate, erect. Glands whitish, truncate.—Fl. June, July.

Watson, Index N. A. Bot. 351.

California.

15. S. NEVII, A. Gray, Manual, 172.

Glabrous, stems prostrate, flowering stems erect, 2—3 inches.

Leaves on barren shoots crowded in terminal rosettes, each ⅜ by ⅜ inch; obovate spatulate, tapering into a short stalk auricled at the base, sprinkled with pink dots; leaves on fertile stems appressed, scattered, similar to, but smaller than those on the barren stems.

Flowers numerous, white, nearly ½ inch in diameter, in forked cymes whose branches measure about 1½ inch, and are recurved, with a few linear oblong leafy bracts.

Flower-buds ovoid lanceolate.

Sepals greenish, oblong, half the length of the white lanceolate petals.

Filaments white; anthers brownish purple.

Carpels white, erect, gradually tapering into an erect style. Glands white.—Fl. July, Hort. Kew.

Watson, Index, 351; Meehan, Flowers Un. States, t. 24. Mountains of Virginia and Alabama.

This species was first detected by the Rev. Dr. Nevius in Alabama, and is well figured in Prof. Meehan's *Native Flowers and Ferns of the United States*.

16. S. BEYRICHIANUM (?).

Leaves in rosettes, ½ inch by ⅛ inch, spatulate-obtuse, tapering to a stalk, sprinkled with red dots.

Fertile stems erect, 2½ inches, with numerous crowded ascending leaves.

Flowers ⅛ inch diameter, white, in a forked cyme.

Peduncles ¾ inch, bearing the sessile flowers on the upper surface.

Calyx-tube very short, or none. Sepals linear-oblong.

Petals white, lanceolate, concave, as long as the sepals.

Filaments white, anthers pink.

Carpels five, white, erecto-patent.

The plant from which the above description was taken had very much of the appearance of S. Nevii, but the petals were no longer than the sepals. Although the name finds a place in several nursery catalogues, we have hitherto not been able to trace it in any botanical work, and are consequently unable to say whether the plant above-described is rightly named.

16 *a*. S. UMBILICOIDES, Regel, Gartenflora, 1877, t. 917, may be mentioned in this place, though it would seem probable that it is not a true Sedum. It is described as having convex oblong-lanceolate leaves in a rosette, from the base of which proceeds a long-stalked cymose inflorescence of white flowers, with parts of the flower in sevens. It is a native of Alatan, in Turkestan, and is only known to us by the description above cited.

THE POTATO DISEASE.

THE following suggestions for checking the Potato disease have been distributed in the form of a handbill amongst the tenants of the Hereford Society for Aiding the Industrious, by Mr. G. H. With, F.R.A.S., the Society's chemist. The instructions given are very much to the point. We would refer the reader also to an article in another column, and urge the fact that much more may be done by way of prevention than in that of cure. The researches of microscopists in unravelling the life-history of the plant have at least shown clearly that while much may be done to prevent and avert, nothing can be done at present to cure. In the meantime we cannot too strongly deprecate the reckless carelessness of growers in really giving every facility, as they do, for the fungus to propagate and spread. Mr. With remarks as follows:—

"The yearly destruction of our Potato crop, and the great loss of food which follows, render it absolutely necessary that some plan for checking, and if possible rooting out the disease, should be tried without delay. After giving a good deal of attention to the subject, I offer these suggestions, with the full belief that, if they are carefully followed, results will be obtained which will far more than repay the trouble.

"The Potato disease is owing to the destructive action of two kinds of mildew; and it starts afresh every year from seeds, or spores, as they are called, which have rested during the previous autumn and winter either in the ground, or in the Potato tubers, or in the manure-heap.

"1. Burn the haulm, and all waste Potatos, parings, &c., not intended for the animals, as soon as possible after the crop has been raised. Unless this is done the decaying haulm and waste Potatos may fill the ground with the seeds of the destroying mildews.

"2. Do not throw the haulm and waste Potatos upon the manure-heap, because the mildew seeds will gain in strength by resting in the manure, and this manure will help to spread the Potato disease next season.

"3. Boil for a long time all diseased, and even apparently sound Potatos, before you feed animals with them. It is highly probable that the seeds of the Potato mildews gain strength by passing through the stomach of an animal, the pig for instance. The manure of animals fed on raw diseased Potatos and Potato parings may, for the above reason, become a powerful means of spreading the Potato disease.

"4. Do not grow Potatos on the same piece of land two years in succession. Any mildew seeds which may rest in the ground from the last year's Potato crop will begin to grow about the beginning or middle of May; but they will quickly perish if they cannot find Potato plants at hand to nurse them.

"5. Be sure the seed Potatos are quite free from disease when planted. A Potato does not always show the disease on the outside, therefore it will be necessary to cut the sets in order that the condition of each one may be seen. A few diseased plants will serve to infect acres of Potatos in a wet warm season.

"6. Use chemical manures, in preference to any others, for the Potato crop. Ordinary manures may, especially if brought from a distance, contain the mildew seeds.

"7. A Potato crop may generally be saved by pulling up the haulm, throughout the whole crop, as completely as possible, directly the disease spots appear on the leaves of any one of the plants. Of course the tubers will not grow any larger after the leaves and stalks have been removed; they will, however, ripen in the ground (more or less according to the season), and though they may not be very large they will be fit for food.

"8. To ensure success all the Potato growers of a neighbourhood should follow the above plan. One plot of diseased Potatos may furnish seeds enough, in July, to destroy the surrounding Potato crops."



Fig. 68.—Sedum spathulifolium. (see p. 376.)

THE FORMATION OF SHRUBBERY BORDERS.

On the approach of autumn, when intending planters are no doubt already engaged in formulating plans either for the replanting of existing banks or of those which are in contemplation, it may not be uninteresting to review the experience of the past season with regard to its effects on evergreen shrubs under various conditions and circumstances. It is a fact but too well known, that a large percentage of deaths have occurred amongst evergreen shrubs when they have been planted on the restricted principles too often adopted with a view to economise labour and material. Such principles are in the main commendable where their application is rendered practicable by surrounding circumstances, but the principle of economy is only true in the right sense of the word when the ultimate result is likely to repay the outlay with interest. Is this so in the majority of cases? let me ask. For an answer we have only to refer to the hundreds of cases we see or hear of every year in the great manufacturing districts of Lancashire and Yorkshire, where material (even such as is called rubbish on large country estates) is not only expensive, but is absolutely beyond the reach of those who are located in neighbourhoods where the value of every yard of land is represented by a price that would seem incredible to people living in rural districts. It is a fact also, that the continued and extended desire of people engaged in commercial pursuits for country villas or residences of greater or less dimensions renders the execution of such work a matter of considerable expense, nay, even of difficulty, when there is not sufficient material at hand to carry out the work in an efficient manner at a reasonable expenditure.

The waste impoverished lands that are being utilised for building are, for want of a better choice, forced, as it were, on a certain class of business people, who, while they desire to be within easy reach of their daily avocations, have also a desire to make their country residence look as nearly as possible like those who are possessed of a more extended acreage and more extended facilities for designing and laying-out according to recognised principles, not the least of which are the well-known advantages of Nature's tracings in wood, lake, &c., important, not only for purposes of seclusion, but of shelter and scenery. Hence the difficulty of dealing with small places from a landscape point of view where all these elements are absent, but all is artificial from beginning to end. The consequence is that it takes three times the labour and material to make a creditable finish of a comparatively small garden disadvantageously situated, than it would to make a much larger one where the working facilities and material can be furnished at a minimum figure. When everything is weighed up about the first thing that is considered is the curtailment of expenses in forming banks and borders for shrubs; they are relegated to a position of secondary importance from a pecuniary point of view, whilst in truth and in fact they ought to have a liberal preparation accorded to them as forming the outline and the main features of a naturally laid out garden.

In forming borders, their height, shape, and locality are as a matter of course suggested by the objects they are intended to hide or the nature of the land to be dealt with, but whatever the primitive idea may be it would be well to bear in mind that almost any given shape or appearance can be produced by a little extra cost in plants, and by a judicious arrangement of them, and further that (leaving immediate effect out of the question) the idea is an advantageous and profitable one. Therefore instead of paring down banks like those we see on the sides of railways I would suggest that the desired effect should be (where at all practicable) carried out in planting, and not by paring the bank or border into an oblique shape to save material. Of the nature of the soil to be used for such purposes, I would add that it is money well expended in the end to make a good preparation for evergreen and deciduous shrubs, and to make it, in "body," capable of retaining moisture and sustaining trees for an indefinite period of years. It is overstretching the mark to expect trees or shrubs of any kind to thrive for any length of time in narrow sloping borders that are drained of every particle of moisture during the first week or two of dry weather, such as we have experienced during the past summer; and it is but too well known how little assistance can be given from the use of the hose or watering-pot under such circumstances even by paying the most diligent attention.

It is obvious, therefore, that all banks or borders should have a good base of earth and be kept with a level surface, or at all events a surface that will take in the natural rains, where mulching can be resorted to if desirable, and where artificial watering becomes really practicable and beneficial during periods of extreme drought. A word as to the compost of such borders. They are not the cheapest, except at first sight, that are three-fourths composed of brick bats, lime

rubbish or other rubble that abounds in districts where the building trade is prosperous; although a limited use of them may be of advantage in low-lying wet districts where soils are heavy and tenacious.

In forming the borders for shrubs it would be well to give some consideration to the selection of such plants as would be most likely to succeed best in certain soils and localities, and to make preparation accordingly. Wherever the red sandstone abounds too many Hollies and Rhododendrons cannot be planted. Taking a radius of many miles about here you always see Hollies and Rhododendrons thrive luxuriantly. I have been surprised at finding the roots of Rhododendrons penetrate into the red sandstone to an incredible depth from the surface, and Hollies will actually revel on the surface of such soils, even if these be but from 12 to 18 inches deep. This should be a lesson to planters, and any one engaged in planting in a locality where he has not resided long enough to acquire experience would gain more actual knowledge by taking a drive round the neighbourhood, jotting down as he goes the names of such plants as seem to like the soil and climate best than by referring to books or catalogues, which are only intended to supply general information.

Travelling by rail from Liverpool to Southport, and elsewhere on the sea-coast, one is often struck by many of the evils alluded to here. Our own air and climate generally is much the same, and so is our soil in some instances. We observe our finest plants are Arbutus Unedo, Andrachne, Cupressus, Thujopsis borealis and aurea (the latter colouring richly near the sea), Laurustinus, Retinosporas, Junipers, Sabinus, Pernettyas, indispensable for this climate; Hydrangeas, Skimmia oblata, Weigelias, Escallonia macrantha, Cotoneaster microphylla, Berberis Darwinnii, Lilacs, and Laburnums do well for rough planting, and for actual seaside planting few things surpass the white Poplar for quick growth, Austrian Pine, Tamarisk, Hippophæ rhamnoides, Euonymus, &c. *W. Hinds.*

SEASIDE PLANTING—VICTOR HUGO.

In connection with the important matter of seaside planting in exposed localities, and of the means of obtaining the necessary shelter, I have before made mention of our summer residence by the coast.

Some more experience, and some well ascertained results induce me to add to the subject the following details. Perhaps, however, a pardonable pride is the cogent motive for recording a visit to our cottage which has just been made by one whom world-wide consent acknowledges as the greatest poet and writer of the age. Others add to these titles those of patriot, and of an orator able to sway an immense nation.

Fatigued by what I heard him say, in answer to a distinguished visitor, was really one of the most harassing years of his eventful life, M. Victor Hugo some time ago returned for rest from the enormous toil which a Parisian life entails on him to his pleasant residence in this island of Guernsey, where he had previously passed his many years of exile (see p. 553, vol. iv., 1875). When I say rest, it is but in a comparative sense indeed, for he spends the greater part of the day composing an important work, driving out, chiefly along our beautiful sea coast, in the late afternoons. It was on one of these occasions that, having had the pleasure of entertaining the poet's daughter-in-law, a beautiful and amiable lady, and her two lovely children, George and Jeanne, the only heirs to the name and fortune so well sustained, that M. Hugo called to take up his beloved grandchildren. He is now quite restored to his usual alertness and active habits—thanks to the good sea air. Our little summer cottage was full of guests—some resident, and others from the poet's large circle of visitors, including names well known in the French Chambers, and we had then the great pleasure of receiving M. Hugo himself. He seemed, however, genuinely to admire our residence, which he said was "artistically situated," with a grand sea view, and also to like the little rockwork in front, which is so valuable as shelter for the flowers in summer.

The subject of shelter is, indeed, an important one. When we reflect how much ruin even brief exposure to cold and rain creates in man, beast, flower, and fruit, and how the gain of one bright sunny morning is lost before the night, and often for want of a shelter which might have been provided by forethought and diligence, it is no wonder that our thoughts should return to it so frequently now that autumnal storms are not far distant. Imagine, for instance, a cottage with an aged father—possibly a delicate child, or even an animal, the great reliance of the cottier—exposed without adequate protection for hours and days to the raging blast. I speak advisedly of the damage created by the wind alone, for during great storms we often see the temperature high, and the wind itself is warm while it bears down the strongest trees, and utterly burns, as with fire, the summer leaves. Any one will remember how immensely the cruel violence of the blast is intensified at peculiar corners, while a yard from them it is like a calm. There is no greater trial to the endurance of a hedge of shrubs, particularly if not long planted, than the long-continued rush of the air over the top of a low wall. Panes of glass are more frequently cracked just near some edge to windward. Shelter thus may even become more fatal than perfect level openness if it be unskilfully placed. Another obstacle to successful protection arises from the fact that, to obtain it, time has to intervene. Want of space is another frequent reason for its entire absence where much needed; and often, alas! it results from such poverty that nothing can be provided, however urgent the risk.

Though, therefore, I have have little to add to this serious subject, and read with pleasure the experiences of the able writers in these pages who treat of the matter on a large scale, yet it is not out of place even to repeat small experiences.

The soil on my land is of peat, with a subsoil of decomposed granite mixed with sand of fabulous antiquity evidently, and probably never cultivated before, highly coloured with iron, hungry and arid, sloping to the north and so fully exposed to the violence of N.W., N.E., and S.W. gales, the slope itself preventing the lower hedges of shelter from availing but for a few yards. It is certain that what to me is only a problem of how to beautify by plantation would to a cottier be a most perplexing consideration. Even Cabbage need some care to obtain remunerative results, without thinking of how safely to live, and rear a family without sickness.

The Tamarisk is by far the best to plant, but even this should be carefully managed. I find that one-year-old wood of about 20 inches long, deeply inserted in holes made for it, and filled with sand in March, will thrive better than when planted in any other way. It does not transplant well, and the cuttings should not be forced into the soil. In about fifteen years it surprises one to see the hedges in fair peat soil no loftier than 7 or 8 feet, on this coast at least. Even this shelters only a small plot if level, otherwise successive hedges are required. Elders and Sea Buckthorn are not yet common here. But among trees it seems to me now that deciduous trees, if thickly enough planted, would be preferable to evergreens in stormy places.

Among shrubs the common Euonymus is the best of all. This is beginning to be recognised here, and hedges are arising in all parts. It has numerous fibrous roots, which adapt it to hungry soils and leathery leaves, which throw off the wind though they suffer much to windward. It is, however, very brittle—a capital defect. Escallonia is also suitable, but not so reliable. Veronica we like much as it grows rapidly, also Pittosporum. All these last flower well near the sea—an immense advantage. Heaths and Rhododendrons we dare not rely on save in corners. New Zealand Flax is admirable, and in clumps affords shelter to low-lying plants only. On a good scale the effect is striking in moonlight nights, and the sudden rustling of the leaves in a calm is startling. Variegated varieties are quite useless to attempt. As to summer bedding flowers this is easy. Some, however, do not succeed at all here. But even good greenhouse Fuchsias thrive wonderfully. Cineraria maritima passes the winter without hurt. Our chief reliance, however, is in rockwork. This is easy to construct so near the sea, and very lovely forms are obtainable of the *aiguille* character, much encrusted. Miniature Druid temples are invaluable. The top stones ward off both wind and rain, and the cave-like form protects delicate objects, such as greenhouse Ferns, while even Maidenhair lives in such a home if properly covered over during the winter: it does so here, at least.

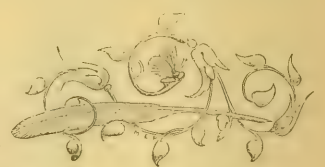
I am thinking of glazing some larger "temples" with solid green glass in the front, for the clustering Sedums and thriving Mesembryanthemums drape naturally and freshly these pretty shelters, and almost any fairly hardy plant would succeed, if water were provided also. With time and study almost every beauty procurable in ambitious conservatories would be had thus, even in a place with no screen between it and the American shores. It was with some pride that we could, therefore, show such mere beginnings to the great poet, who is a most accurate and careful observer, as you will find our Shakespeare to have been also, of natural objects. Both loved Nature, and have been rewarded by the true applause of generations

On one point, a tender one to us growers of the best fruit, I was compelled to disagree with M. Hugo, whose universal philanthropy and benevolence has extended its protection from the poor children whom he regularly fed when here for so many years, to the "fowls of the air," which lodged in his garden. There, I believe, the fruit crops were no great things, from this cause. My wife complaining to him that our Figs, Strawberries, Cherries, Apples even, and the choicest Plums had been consumed by bloated thrushes, and that these defiant and voracious creatures had even eaten the very muslin bags which she had made to save a few of her favourite Figs, the great poet laughed with most evident relish, and said, "It was perfectly right of them."

At that moment a vision of my (late) "monster Pear," which weighed 5 lb., arose before me. One Sunday morning, before going to my duty as chaplain, I had gone to gaze on this wonderful fruit, carefully netted, and supported by flannel, so as to ease the weight from the stem. It was safe; nothing had been near it of man or beast, and it was to be gathered with due solemnity on the following day for exhibition in London.

On my return I found, to my dismay, that some small bird had crept through the net and just pecked the Pear a little. Had I then got that bird, as Shakespeare says, "Within my pistol's length" (or rather something more modern), it might have been a "bad quarter of an hour" for one of us.

Of the cottage itself I can only say that it is a perfect success in every way, and the admiration of the numerous tourists. I have a theory that something like it would render persons of small incomes independent of many expenses, aided by honest garden work and by fishing. With a little glass anything could be grown at the back, which is south and somewhat sheltered. Villages of such cottages could be easily made near the sea-coast, in order to profit by the seaweed and all the living things which abound. But this hobby must be reserved for another article. *Thos. C. Birkhaut, Richmond House, Guernsey.*



Home Correspondence.

A Word for Fuchsias.—What can "A. D." mean (see p. 346) by saying the Fuchsia has had its day? True, he adds, "the more's the pity." But surely the fact cannot be so. Perhaps it would be more true to affirm that the Fuchsia has not yet had its day. My own opinion is that neither its popularity nor culture has ever yet reached up to anything like the high level of its incomparable merits, for what plant can match the Fuchsia in grace, beauty, usefulness, facility of culture, and adaptation to circumstances? Adverting only to the last two qualities, the Fuchsia is everybody's plant, and may be grown by everybody everywhere. Every two joints of almost any Fuchsia will form a plant, placed in water, or in sand, earth, moss, or moist air, put in in summer, winter, spring, or autumn. The plant lives in garret, cellar, kitchen, or parlour, workshop or warehouse window. Nay, some of the finest Fuchsias ever seen by the writer were on the line, in a pointsman's box, in the North; and who has not seen good ones on the tiles, in the bare room of the sempstress, and the unfurnished garrets of the wretched and the miserable? In some districts, too, almost every cottage garden has its Fuchsia as well as the window; and the old nivalis, coccinea, Riccartoni, and even globosa yet flower on with their old vigour and glory, and seem almost as firmly established as the blacksmith's shop or the church steeple. And then there are the regal Fuchsias of the drawing-room, the grand window gardens and conservatories. Has "A. D." lately seen these at their best, or do these show any signs of decadence? Do not bushes 3 yards through, bending low beneath their loads of glorious and yet graceful

beauty—pyramids 3, 6, 9 feet high, and as much, or half as much the larger over through—prove that Fuchsias have by no means yet entered into the sere and yellow leaf, nor are they likely to do so for years to come, if ever? And what does "A. D." say to Fuchsia arches, pillars, walks, roofs, corridors, where we can look up to them as we ought, and feel something like reverence as we walk beneath their bending boughs of grace and beauty. And then there are beds, groups, baskets, borders, vases, hedges, walls, even shrubberies and breakwaters of Fuchsias in the open air. No, Fuchsias have not yet had their day, but they will have it by-and-bye; and a bright, glorious, happy day it will prove for all who speed and help to brighten and lengthen it. *D. T. Fish.*

Peaches and Nectarines on the Same Branch.—The Peach tree alluded to by "G. F." in the *Gardeners' Chronicle* of the 7th, as producing Peaches and Nectarines on the same branch, no longer exists, having died in 1876, and the branch which produced the two fruits cankered off a few years previous and before I saw the tree. My noble employer and several gardeners, who had carefully examined the tree, assure me that there was no trace whatever of a bud ever having been inserted. My predecessor, who was here forty years and trained the tree, steadfastly affirmed that it was a freak of Nature. The Peach was Royal George, but the Nectarines were distinct from any known variety, being of a very light colour, small and speckled, which, together with the branch dying off before the rest of the tree, goes far to prove that the phenomenon was due to a weakness in that part of the tree. *Geo. Griffin, Slebech Park, Pembrokeshire.*

Peaches and Nectarines at Chiswick.—The information under this heading on p. 266 may be appropriately supplemented by notes on a few of the late varieties, by way of making it as complete as possible. Rivers' Autumn Rose Nectarine is a late variety of a promising character; a little later than the Pine-apple, juicy, rich in flavour, with a pale yellow flush; it grows to a good size, and is well coloured. A French Peach, named Belle Impériale, bears large flattened fruit, very fine in appearance, something like the Bellegarde, very late, splendid in colour, and of great size; it will tell on the exhibition table. Rivers' White is a fine looking Peach, something like Walburton Admirable in appearance, the fruit large and somewhat flattened, and pale in colour. A Peach named Osprey is too small, and may be dismissed as not good enough to take high rank. Desse Tardive is a grand Peach of supposed French extraction, a fine showy late variety, something like Belle Impériale, and of good quality. Exquisite is a Peach very large in size and fine in appearance, having a yellow skin and richly coloured on the sunny side; it is a fine variety for exhibition. Belle Impériale, Desse Tardive, and Exquisite may be set down as three splendid late Peaches, well worthy the attention of cultivators of this fine fruit. *R. D.*

Protecting Young Forest Trees in Parks.—In reply to your correspondent, Mr. Capers (p. 345), I may say the park which my remarks referred to (p. 282) is 100 acres in extent, but has no deer in it. Mr. Capers seems to be rather confused, as from what little I can gather from his note he refers to park fencing, not the protection of trees in parks. Surely he does not mean to tell us he is troubled with deer jumping over tree guards, or breaking them down when properly constructed with good materials. Perhaps Mr. Capers will give us a description of the fences which deer and cattle are so destructive to, as I shall be happy to supply him with particulars of a good fence. With reference to deer or cattle nibbling ornamental trees or shrubs, I would simply refer Mr. Capers to my remarks at p. 282, where he will find reference made to trees being nibbled. Our young forest trees, belts, clumps, &c., are always well protected by keeping the fences and guards in good repair, and seldom left carelessly for cattle to intrude. Coniferæ or shrubs he should never think of planting singly in parks where cattle have access to them, but in clumps and belts amongst forest trees. I have seen Coniferæ planted singly in some parks, and most unsightly objects some of them are, having as a protector or guard a few sheep hurdles laced with dead Thorns, which look very bad. *R. Greenfield.*

Potato Crop.—At no great distance from the garden here there is a field of Potatos which was planted by people who are privileged to have so many drills each. The kinds consist of the following:—American Early, Walker's Regent, Dalmahoy, Paterson's Victoria, Red Flourball, American Rose, Skerry Blue, Fortyfold, Champion, Excelsior, and Early Round. Of these the Champion is the only one that stands out boldly with its green haulm, little injured, but the scathing fungus has done its fatal work on all the others, leaving, however, the tubers comparatively little affected as yet. The soil of the field consists of alluvial deposit mixed with granite brought down from the hills on either side by the wear and tear of the elements. In the kitchen garden the American Early generally succumbed to the fungus long before any of the other sorts, but at present the tubers are very free from the disease. Some seed of Potatos which had been lying inert for three years in one of the quarters of the kitchen garden have vegetated freely over a good surface of the ground, and grown well, but neither these nor those grown in fresh turfy loam are exempt from disease; so it would seem that we have got a hereditary foe to contend with in the Potato fungus, which may be neutralised but cannot be altogether eradicated. With the exception of the close, damp, warm weather we had in August, which affected the Potato crop to a certain extent, the summer and autumn months were everything that could be desired for growing all kinds of vegetables and maturing fruit; indeed, the like thereof I have never seen since I came to this locality; but since the 15th inst. a strong wind has set in from the North, accompanied with heavy rain and hail showers. Some branches of trees heavily laden with foliage (not with fruit I am sorry to say) are beaten off and scattered about the grounds, but nothing is done to mar the beauty of the woodland scenery. *John Cain, Inverary Gardens.*

Venus Victrix Fuchsia.—I should have kept silence on this matter except for one thing. Everything that happened to me twenty-one or twenty-two years ago is indelibly photographed on my memory. At that time I was a very enthusiastic Fuchsia grower, and the very first white-sepalled lilac-corollaed Fuchsia I ever got was one called Venus de Medici, after that Venus Victrix, after that Rose of Castille, after that Evening Star. I therefore believe that Venus de Medici was the first white-sepalled lilac-corollaed Fuchsia; so that Mr. Cannell is wrong in saying (p. 315) that Venus Victrix was the oldest or first light coloured Fuchsia sent out. I do not remember the raiser of any of these. *Pater.*

The Clove Carnation Susan Askey.—At p. 19, in "Notices to Correspondents," you say the fine white Clove Carnation Susan Askey is in the hands of the raiser and Messrs. Carter. It is some five or six years since it was raised, and is now growing in various places. Some fine plants of it are now blooming beautifully in Dr. Theakstone's garden, at Earby in Craven, a district rather high, and in the West Riding of Yorkshire. *A Reader of the "Chronicle."*

Judging Melons.—I hope the remarks of Mr. Hinds and Mr. Fish may lead to a reform in Melon judging. I think it would be more satisfactory both to the judges and exhibitors if all Melons were judged without cutting them—say by points, as recommended. A man may be ever so good a judge of flavour, and yet be misled by tasting, say twenty scarlet-fleshed fruits, and perhaps more green-flesh. This system would also do away with the unsightly appearance of a lot of cut Melons, which always looks very bad, and especially if the show extends to two or three days. The exhibitors would also then be able to take back the Melons to their employers' tables, as is done with dessert Apples. *C. Osman.*

The Isabella Grape.—In answer to your correspondent "L.'s" enquiry respecting the Isabella Grape Vine, I beg to state that I have known and grown it many years. It is a plant of vigorous growth, the wood when ripe is of a reddish brown colour, and the leaves (of which I enclose a specimen) are large and much veined; the bunches of fruit are small, the berries round, of a bluish black colour, and of exquisite flavour. We know it here as "the Strawberry-flavour Grape." Strong plants of it are procurable, if desired. It is not considered worthy of cultivation, but for its peculiar flavour. *Charles B. Saunders, Jersey.* [A distinguished French entomologist attributes the comparative immunity of our Vines from the Phylloxera to the fact, as he supposes, that they are grafted on American Vines! In our opinion such Vines are only found in the gardens of the curious; and, so far as we know, are never used as stocks in English vineries. EDS.]

Large Melons.—While reading over the paragraph from "C. H. S." (p. 315) on "Melons at Longford Castle," I was surprised to find so much stress laid upon the extra size of the Melons in question. My experience is that Melons of medium size—say from 3 lb. to 6 lb.—and good flavour, are more appreciated on the tables of the wealthy than fruits of a much larger size. The enclosed fruit resembles what is here the standard size. *C. H.* [Large enough, and fine in flavour. EDS.]

Tea Roses Out-of-doors at Bath.—At some of the horticultural exhibitions held in the West of England, Mr. S. J. Pavitt, Rose Cottage Nursery, Bathwick, Bath, is in the habit of producing cut blooms of Tea Roses of great beauty during the months of August, September, and October; in fact, Tea Roses are his speciality, and his method of cultivation to obtain cut flowers at this time of year is worthy of record. Mr. Pavitt grows his Tea Roses on the seedling Brier, and in this his practice agrees with that of other growers. The trees are planted out on an east border about the end of May, the border being protected by a belt of trees at the back, which shelters them from the westerly gales. He considers the notion that Tea Roses require a warm sunny south border as erroneous, on the ground that the blossoms get scorched before they become thoroughly opened; and the great advantage of a sheltered border with an eastern aspect is that the plants get only the morning sun for a few hours, which Mr. Pavitt considers is all they require; and they are never exposed to the afternoon sun, which is invariably very burning in its effects. The beds in which the Roses are grown are well trenched and prepared during the winter months; and up to the time of planting out the plants are grown on in pots. All the buds are pinched out till the end of July, and the result is a truly wonderful head of flower all through the autumn months; and in case of very severe weather, a little Bracken or Fern stuck among the trees makes an excellent protection, and indeed is all they require. Mr. Pavitt has a large collection of Tea Roses, but he finds the following to be best adapted for growing in the open air, in the manner set forth above:—Devoniensis, Catherine Mermet, Rubens, Madame Falcot, Madame Charles, Madame Camille, Madame Willermoz, Safrano, Isabella Sprunt, and Goubault. He finds the above varieties will give him blooms for nearly six months in the open air, and he remarks that any one fond of Tea Roses, and having a little glass, might have them in flower nearly all the year round. In many instances Tea Roses on the seedling Brier have been very fine this season, probably owing to the moist cool character of the summer. This fact lends weight to the force of Mr. Pavitt's opinion, that Tea Roses in the open air are best in a cool position, with partial shade. *F. D.*

Agave Vandervinniii.—A large plant of this Agave flowered here last season, and after the flowers were over I cut off the stem, 26 feet long, and cut all the leaves and roots off also; then, because it formed so good a cone, I set it, quite bare of soil, on a shelf. Last week, to my surprise, I found it was sending out roots quite vigorously, and have no doubt it will grow again by sending out side-shoots. As this is one of the candelabræform section, or true Agaves, I thought it might be of interest to some of your readers. *J. Croucher, Gr. to J. T. Peacock, Esq., Sudbury House, Hammersmith.*

The Early Rivers Peach.—This is one of the best Peaches for outside culture, and especially for late localities. It ripened its fruit this year with us on a south wall on August 1, very early for an outside Peach in Berwickshire. Not only is it to be recommended for its earliness, the fruit is large and of excellent quality; it seems altogether to be a Peach suited for outdoor work or early forcing, but the latter quality I have not tested. This year our Royal Georges growing side by side with it have been a sad spectacle. Although one of the best, if not the best variety for general work, it is subject to all the ills of Peaches; ours this season have been totally spoiled with mildew. I attribute this to the sunless season of 1877; while the other, being early, has a double chance of getting its wood ripened. I have not seen one speck of mildew on this variety as yet this season. Half the syringing that is taken by any other Peach tree I know will keep it clean and healthy. This quality is not to be despised. We intend to plant more trees of this variety this autumn. *Borderer.*

Muscat Grapes.—I would like to recommend the type of Muscat Alexandria Grape Vine known as Tynningham Muscat. In many cases difference in cultivation makes all the difference between the Muscat at one place and that of a neighbouring one, or even in two houses in the same garden. I grew Bowood Muscat and Muscat of Alexandria in one house, at least these were the names sent from the nursery. I could see no difference. I inarched a cane of Tynningham Muscat on a side growth of one of them, with the result that the berries and bunches produced by the Tynningham rod are much larger and ripened a week or ten days earlier. *J. Douglas.*

Tomatos and Wasps.—I have here a lean-to house which was erected last spring, the back-wall is planted with Peaches, which are carrying a good crop of fruit in various stages of ripeness. On the front, owing to the house not being finished early enough for planting fruit trees, I have grown Tomatos, which have been a most successful crop. One thing, however, I have observed in this house is, that neither

wasps nor flies frequent it, and if by chance one enters, it passes out again immediately. Now, in all the other houses here, this is not the case. Can there be anything in the Tomato which causes this—and has it been remarked by any other person? I am strongly of opinion that the Tomatos have something to do with this matter, and that they play an important part in thus excluding these tormentors. *Nemo.* [We saw a vinery lately sadly infested with wasps that had Tomatos growing on the back wall. EDS.]

Vegetable Marrows. — The large Vegetable Marrows mentioned by Mr. Stevens (p. 346) are certainly of good size, but not exceedingly so, for the long green kind, which is generally the largest of all long Marrows. I have just cut one of the long white kind, grown without manure on a rubbish-heap, which weighs 25 lb., but I have seen them larger. A market grower, to whom I showed this fruit, kindly told me that "plenty of greengrocers would give me a 'bob' for it to put in their windows"—an appraisement of value that certainly took away at once any pride I might have possessed in the ownership of such a big one. It is worth at least twice that amount for the making of preserve, and then there is the seed, which is worth at least so much more; therefore I prefer to keep my Marrow, and forego the "bob." Except for winter use, or to make a display, these big Marrows, however, are of little use, as half-grown fruit are the best for table, and those about three parts grown for the making of preserve. It is a curious fact that of all the kinds of Marrows that have been introduced from time to time none are so generally grown or so popular in the market as the long white kind. It is the most favoured both by gardeners and market growers, indeed these latter would find it difficult to sell any other sort in the London market. Those who serve Covent Garden fully understand the prejudices as to colour existent in London with reference to vegetables. White Potatos, white Turnips, red Radishes, and white Marrows are amongst the most favoured and command the best prices. In Marrows, however, there is still further an appreciation for the ribbed form, and the grower prefers a good stock of this kind if it be possible to obtain it true. Marrows have been very fine and abundant this year, the occasional rains having kept the plants in strong growth. *A. D.*

Vegetable Marrow, &c.—I cut on September 9 a Marrow (the white variety), the length of which was 3 feet, and 2 feet 8 inches in circumference, and weighed 34 lb. This is the largest I have ever seen. We have had a wonderful crop of Plums and Damsons in this neighbourhood, price retail varying from 1*s.* to 1*s. 6d.* per gallon. Apples are much more plentiful than anticipated, but Pears quite a failure. The Potatos, I am glad to say, have turned out much better than expected, the late crop being unusually good and sound, especially Compton's Surprise and Victorias; Magnum Bonum and flukes slightly touched with disease, but average crop. The early kinds are good, with the exception of Snowflake, which is quite a failure. *C. B., Chichester, Sussex.*

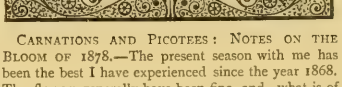
Foreign Correspondence.

CAPE TOWN: *Aug.* 19.—With reference to Mr. Mudd's statements in the *Gardeners' Chronicle*, July 6, respecting the condition in which he found the Botanic Garden when visiting Cape Town—statements which no one can refute—allow me to state that I think it would be an act of injustice towards my employer (Mr. Dickson) if Mr. Mudd, who alludes especially to the contents of a small glasshouse, were not informed that since the date of his visit a valuable addition has been made to the Botanic Garden by the erection of a very fine conservatory (built of teak by Messrs. James Boyd & Sons, of Paisley), towards the cost of which Mr. Dickson was a liberal contributor, and who finally crowned his liberality by presenting his fine collection of plants to the Botanic Garden, where they fill one wing of the new conservatory. This collection consists of stove and greenhouse plants, Ferns, a very fine collection of established Orchids, also a large quantity of specimen Azaleas and Camellias, all of the leading varieties. My employer, being passionately fond of horticulture, and thoroughly conversant with plants, had, regardless of expense, imported the above collection from England, the Continent, and various other places, and I may mention as an illustration of Mr. Dickson's keen desire to promote successful plant culture that he has peat imported from England, and that as sphagnum is difficult to be got in Cape Town, Mr. Dickson has made arrangements in Scotland for a shipment pressed in bales, as well as a large quantity of peat, to be used for Orchids and pot plants belonging to the Botanic Garden, the cost of which he defrays. In the event of Mr. Mudd paying the Botanic Garden another visit I hope he will leave with a more favourable impression.

It should be borne in mind that plant growing cannot be carried out to the same advantage as in England. In the first place the houses are not artificially heated—a great disadvantage in winter, owing to the cold wet weather experienced for three months. In summer the heat is intense, causing rapid absorption, more especially when a south-east wind prevails for a period of three weeks, accompanied with a scorching sun. Only those who have experienced a south-east wind in Cape Town streets (when clouds of dust and gravel are on the wing) can form any idea of the comforts attached to paved streets and water-carts in English towns and cities, and which tends to call to memory dear the well-known line, "Be it ever so humble there's no place like home. *R. Johnson, Foreman, Glass Department, Botanic Garden, Cape Town.*

Our correspondent also sends us the following cutting from the *Cape Times*:—

"It is not often that we have the pleasure of chronicling such an instance of public spirit as we are now able to record. Mr. W. W. Dickson, whose commercial enterprise is represented in more than one enduring memorial, has for many years past, as is well known, employed his leisure hours in superintending the formation and maintenance of a garden incomparable amongst the gardens of Cape Town. With a genuine spirit of liberality Mr. Dickson shared with all who cared to solicit it the enjoyment of this costly luxury, no personal introduction being required to secure a welcome to visitors who desired to inspect the treasures of that famous ground in Roeland Street. Recently, however, by the sale of Mr. Dickson's house and premises to the Dutch Reformed Church, for the purpose of a Normal School, the floricultural devotion of this gentleman has been temporarily checked, and as Mr. Dickson is about to visit England there is no immediate prospect of his resumption of his favourite pursuit. It would be a pity that so noble a collection as Mr. Dickson has brought together with rare judgment and regardless of expense should be dispersed, and we rejoice to hear that there is no danger of this result following the anxious labour of years. Mr. Dickson has presented his whole stock of conservatory plants to the Botanic Gardens, where they fill one entire wing of that new building, towards the cost of which Mr. Dickson was himself a liberal contributor. Further, inasmuch as the Botanic Gardens are not supported as generously as might be expected in a city so wealthy as Cape Town, and as there are consequently no resources available from which to provide the increased labour required by this munificent gift, Mr. Dickson has at his own cost secured the services for twelve months of a competent man to look after the contributed collection. At the end of the year we trust that a general resurrection of public spirit will enable the committee to make permanent provision not only for the due maintenance of the conservatory plants but for the improvement of the whole garden. Such liberality as Mr. Dickson's is deserving of record. It would be a graceful act on the part of the Government, with whom we presume it would rest, to make the record perpetual by giving to the new building, now so richly stocked, the name of the 'Dickson Conservatory.'"



CARNATIONS AND PICOTEES: NOTES ON THE BLOOM OF 1878.—The present season with me has been the best I have experienced since the year 1868. The flowers generally have been fine, and, what is of great moment in our late district, they have been early in bloom—fully three weeks earlier than last year. I always notice that the different seasons we experience bring out or suit some varieties better than others, one sort being extra good one year, and another the next. Present at the London National Exhibition on July 23, and again at Manchester on August 3, I flatter myself that I had the pleasure of seeing some of the best flowers of this year's growth. To commence with Scarlet Bizarres: they were all good—of course some were finer than others. Amongst the best I am inclined to give Mercury the premier place for the year, the flower of it which took first honours at Manchester being unbeatable. What can the anti-dressers say to this? The two last years at Manchester the premier Carnation has been won by flowers which were not dressed, the reason being that the flowers were too young to dress. Everywhere Admiral Curzon was fine; also Mars, Lord Napier, Garibaldi, Sir J. Paxton, and True Briton. Lord Napier was darker in the bizarre than I ever remember to have seen it. Garibaldi, although inclined to be bricky in colour when young, was extra fine. In new flowers in this class my esteemed friends Mr. Dodwell and Mr. Ben Simonite exhibited some really good flowers. Mr. Dodwell exhibited three at London, all of which I should say are from our old favourite Admiral Curzon, with a cross of Sir Joseph Paxton or Lord Napier in them. The one exhibited by Mr. Simonite was, as I heard an old grower say, "a bonnie flower," rather small indeed, but which is easily explained. The east wind which prevailed for a fortnight before the show brought such an amount of Sheffield vapours on to the plants, that in many cases the flowers shrivelled up in the bud, not even expanding.

In Crimson Bizarres, Rifleman, exhibited by Mr. Gorton, at Manchester, ranks first, closely followed by Lord Milton, the best strain; J. D. Hextall, Eccentric Jack, Rev. G. Rudrick, Graceless Tom, and William Murray. Of new sorts Mr. Dodwell exhibited a seedling of great promise.

Pink and Purples are nearly always fine, and were this year no exception—Sarah Payne so pure, and James Taylor being good everywhere; Falconbridge also was well up to the mark. Other varieties which have already been mentioned in the C.B. class, but which frequently are found in this, were Eccentric Jack, J. D. Hextall, and William Murray.

In Purple Flakes the best flowers were Squire Meynell (Mr. Dodwell calls this Squire Tom, which with me is altogether distinct from it); James Douglas, large and fine; Dr. Foster, very pure; Juno, large and good; whilst the variety exhibited as Ajax in London was Squire Meynell, as before-mentioned. Mr. B. Simonite exhibited a couple of seedlings in this class, promising of course. Two other varieties also I must not forget to mention, both sports; one from James Taylor, P.P.B., and the other from Sarah Payne, P.P.B.; they will, or I am much mistaken, both be telling flowers in the exhibition stand.

Scarlet Flakes have been extra good, the flower of John Bayley, exhibited by Mr. Douglas, and which won the premier prize in London, being perfect in all respects. It is now upwards of twenty years since Mr. Dodwell sent out this variety. At that time he said he believed it to be the best S.F. in cultivation, and this opinion I always endorsed. Other S.F.'s, which were everywhere fine, were Annihilator, Sportsman, and Clipper.

Of Rose Flakes—the strongest class of all—in my opinion Sybil was best, closely followed by John Keet, James Merryweather, Mary Ann, Lovely Ann, Mrs. Dodwell, and Rose of Stapleford. In this class I also saw several seedlings, all promising; one exhibited by Mr. Booth, another by Mr. John Fletcher, and another by Mr. B. Simonite.

Picotees generally were very fine: pure in the white, and free from spots or bars. In heavy reds precedence must be given to J. B. Bryant; the flower exhibited by Mr. Douglas and which won premier at London being immense. John Smith was also shown fine, winning 1st and 2d place in singles in London, and again at Manchester winning 1st, 2d, 3d, and 4th. Other varieties which were fine are Mrs. Fuller, Princess of Wales, Brunette, and Master Norman. Of light reds—a light class indeed—Thomas William was far away the best; other sorts were Rev. F. D. Horner, William Summers, Mrs. Bower, Clara, and Ada Mary. A variety exhibited by Mr. B. Simonite, called Violet Douglas, is very promising.

In purples, heavy edges, Alliance, in my opinion, is the best, closely followed by Zerlina, of which sort there appear to me to be two strains, in one of which the plant appears to be of a weaker growth, whilst the flower takes after that good old sort Mrs. Bayley in colour. Other varieties I saw fine were Mrs. Summers, King of Purples, Norfolk Beauty, and Mrs. Niven. Mr. Turner exhibited one called Mrs. Albert Chancellor, very promising. Of light purples I still think Mary is the best, closely pressed by Minnie, Ann Lord, Mrs. Douglas, and Prima Donna. In medium purples with me, Jessie has been immense in growth, fine and large in flower, two others, Fanny and Alice, have both been fine.

In heavy rose or scarlets the following have all been fine:—Lady Louisa, Mrs. Lord, Mrs. Horner, Edith Dombrain, Miss Lee, and Juliana. In lights Mrs. Allcroft was far away the best; winning premier at Manchester. Other good ones were Ethel, Miss

Wood, Estelle, and Mrs. Adams. In the two foregoing classes Mr. Turner exhibited three very fine varieties :—Royal Visit, heavy rose, in the style of Edith Dombrain but deeper in colour ; Mrs. Payne, a medium edged flower, very pure and chaste ; and Victoria, a light edged rose, was also fine.

The selfs and fancies were in my opinion a grand feature at the Southern exhibition, whilst the plants in pots were superb. Those exhibited by Mr. Turner, though not exhibiting florists' properties in all points, were still a fine lot for border cultivation, being large and fine, and also new in colour. In this class Mr. Ware, of the Hale Farm Nurseries, Tottenham, exhibited a primrose-yellow self, very floriferous, and one which is sure to please any one who grows it. In my opinion the yellow grounds are equally as beautiful as the white ones, only wanting cultivation to make them as good, both in Carnations and Picotees. Dr. Horner, the veteran florist, wrote upwards of a quarter of a century ago recommending their cultivation, and there is no doubt that had any one taken them in hand at that time, we should now have had a class of yellow grounds both in Carnations and Picotees, fully equal to the white ground sorts at present in cultivation. *Geo. Rudd, Undercliffe, Bradford.*

Apiary.

WORK FOR SEPTEMBER.—The work for the bee-keeper this month is the most important probably of the whole year. Whilst the idle bee-master is only intent upon the amount of his honey yield, those who really love their bees are most careful to have the whole of their stocks in a condition to winter well. Through the neglect we now see, especially in cottage and farm bee-stands, many stocks which would with care have proved valuable, are suffered to take care of themselves, and thus miserably perish during the winter. As the wife of one of our intelligent yeomen said to me recently, "If they live they live, if they die they die."

The first work this month is to mark the hives which are intended for honey or taking up ; those left to continue the apiary or to stand over winter should be with the greatest care examined. If no other means exist test the weight of each skep : by gently lifting them from the bottom-board you may readily judge if they can outlive the coming wintry season.

Do not sulphur your condemned stocks. This is a most cruel plan, and should never be adopted by any bee-keeper. We are most thankful to see that in our villages, extending over an area of about 8 square miles, it is very seldom a single stock is destroyed. We have instructed a poor man to go over the country each September and visit every apiary, either large or small : he charges 1*s.* each stock he drives, for his labour. The condemned or stocks set apart for honey he drives into empty hives, then smoking the adjoining stock, which is left for wintering, he unites the condemned or driven stock to these. If they are well smoked it will prevent any fighting, and the driven bees being precisely in the same condition as a swarm, *i.e.*, filled with honey from the cells before leaving the skep, they are received by the other hive with feelings of joy, because they come laden with rich provisions. Only one of the queens is left to reign (it is generally the strongest), so no fear need be apprehended. Thus, instead of having a poor dwindling stock, it is at once by the above simple method made into a strong stock, therefore far more valuable. Is not this a better plan than cruelly destroying them over the brimstone-pit ?

One of our greatest pests are prevalent just now, and often work immense havoc amongst the weak and defenceless colonies—we refer to wasps, poor things ! They are in a starving condition, and as much for protection and warmth as food they, wherever it is possible, force an entrance into the hives. We have witnessed in about a fortnight the destruction of a fine thriving apiary of some five stocks solely by wasps. With strong stocks you need not take any precaution to defend the bees : but as a man's greatest foes are they of his own household, so with bees we find the worst enemies are amongst their own neighbours, often from an adjoining hive. Oh, what annoyance we have often experienced from robbers in the autumn ; yet after all, upon reflection, we scarcely wonder at this, for it is the fault, in most instances, of their owners. It comes about as follows : the honey harvest is past (we now speak to those beekeepers who never move the hives to the heather for the second and best honey harvest), and the best with weak stores, but strong stocks, finding the next hive is a defenceless colony, from its small number of bees, but withal having good rich stores of honey, at once make war upon it. Yea, and it is astonishing in what a short space of time the rich honey is carried off to the hive with poor stores, and the next thing is to find the bees also gone with their honey.

This may be prevented, first, by closing the entrances so that only two bees can pass or repass at the same time : this will give the colony one means of defence, which they will not be slow to take advantage of. But if the fighting continues after this has been done, lose no time in thoroughly smoking the hive of the attacking party, or the actual robbers ; this will at least for a few hours quiet their turbulent spirit, and after a short season of reflection they will probably abandon their contraband habits and turn to more industrious duties. We have never known this to fail when we have been able to experiment on the robbers from a hive in our own apiary, but what can we do when it belongs to some other apiary a distance away ? We once had a fine stock completely destroyed by a hive of half-bred Ligurians coming a distance of half a mile ; do whatever we could it seemed to have no influence whatever in checking the marauders. However, we have seldom known making the entrance small to fail, and both for wasps and bees it is the best means of defence.

We should remind all our friends this month to examine their bee-stands. After remaining for several years unmolested they are apt to decay just above the ground ; this is frequently unperceived until after a high wind we find the hive with its contents scattered about, thus when it is too late we regret not having looked at the supports, and wherever needful having either strengthened them or replaced with new supports. "A stitch in time saves nine." *R.*



Notices of Books.

The Domestic World: *a Practical Guide in all the Daily Difficulties of the Higher Branches of Domestic and Social Economy.* By the Author of *Enquire Within.* (Hodder & Stoughton.)

A heterogeneous assemblage of definitions and propositions, useful, useless, and mischievous ; for instance, we doubt very much the utility of the following, which meets us in the first page :—"A 1. . . . Conventionally this expression is used to denote anything of the superlative degree of excellence." This is an item of the higher branches of domestic and social economy, as also we presume are "Aunt's Garden," "Baby's Ball," "Bubble and Squeak," and a host of similar matters. If one could only think of this book at the right moment how many knotty problems in domestic and social economy, especially the higher branches, might we not solve—what troubles we should be spared, what perplexities would be averted. For instance, a "Floral Dictionary," of four or five closely printed columns (p. 123), would tell us at some urgent moment that "Abatina" meant "fickleness." Well, we know what fickleness means, but we never heard of Abatina. We might be glad to get a cure for heartache, but we should not know where to find Ascelpius as a remedy for it. This inability to find the remedy might however be advantageous if we are to judge from the treatment proposed (p. 155) for headache : "The head must be bent down on the side from which the pain proceeds while a teaspoonful of rum or other spirit is introduced into the ear." Less dangerous is the injunction to hold roll brimstone in the hand for cramp in the feet, legs, stomach, or other part. At such times "the brimstone crackles, and emits an offensive odour, which is not the case unless the cramp is present !" Another choice illustration of the higher branches of domestic and social economy and we have done. "While peeling Onions put a large needle in the mouth, half in and half out. The needle attracts the oily juice of the bulb, and any number may be peeled with impunity. To servants this simple fact is invaluable." But we have no patience to read further ; the character of the book may be judged from the above extracts. If any perplexed reader should gain comfort and assistance from this book in "all the daily difficulties of the higher branches of domestic and social economy" we shall congratulate both him and the author.

Design and Work: *a Mechanic's Journal for Workmen of all Trades.* Vols. iii. and iv. London : G. Purkess, 41, Tavistock Street, Covent Garden.

A couple of volumes that cannot fail to be useful to workers, be they amateur or otherwise, in any mechanical industry. In them teachings in all the modern sciences will be found, tabulated and described by a competent editor and staff. Opening a volume at random we come on the weekly number for Saturday, March 16, of the present year, and in it we find lessons deduced from nearly all the sciences that can possibly help a mechanic. An automatic gas-lighter is described and illustrated ; papers are given on chemistry, physics, ballooning, the use and abuse of the sewing-machine, room decoration, steam condensers (illustrated), hand and machine made nails, the artificial production of precious stones, the magic lantern, and frictional and voltaic electricity. The amateur's workshop is admirably described, and a number of useful hints are given, and some practical notes from a mechanic's notebook are added. Three pages of closely-printed correspondence on matters ranging from a telephone to a design for the head of a walking-stick are also given. Notes and queries, in which the readers of the journal instruct one another, occupy three pages more. A number of notes and miscellaneous articles complete a first-rate number. They are two excellent volumes, well worth reading by every one with a taste for mechanics.

PUBLICATIONS RECEIVED.—The Native Flowers and Ferns of the United States, by T. Meehan, parts 6, 7, 8.—Die Blumenzwiebeln, von And. Voss ; Hildesheim, Lar.—Der Deutsche Garten.—Revue Horticole.

The Villa Garden.

WEEDS.—The summer of 1878 will be remembered as a season when weeds appeared to have taken out a kind of unlimited licence to grow anywhere and everywhere, as if they alone of the vegetable kingdom had a right to the possession of the soil. In all parts of the garden they put in appearance by the thousand, and if they were hoed up one day they took root again the next when the rain came.

It is now too late in the year to think of hoeing weeds, and it is best either to pull them up by hand or dig them in out of sight. At this season of the year a good deal of digging can be done with advantage, as it makes the ground light and workable for the winter and spring. Digging the weeds in gets them out of sight quickly and completely.

Weeds that are hand-pulled need not be wasted. There is a good deal of garden refuse that can be turned to account by mixing it with house refuse—leaves, cinder ashes, the sweepings of paths, the clipping of hedges, &c., and allowing it to rot. Anything in the way of Gooseberry tree prunings, thinning out shrubberies, &c., that will not readily rot should be burnt, and the ashes mixed in with the refuse that will rot, and in autumn this comes in very useful indeed to dig into borders, or in spring as a top-dressing. There will soon be plenty of leaves, and not one of them should be wasted. Those who have to do with stiff clay soil find out the great advantage of having some vegetable refuse to mix in with such an unworkable material. It makes it open, and serves to make it suitable for the growth of plants that would not otherwise thrive in it.

VEGETABLE REFUSE.—Vegetable mould is of great value in many ways, and especially as an ingredient for potting soil ; but it should be thoroughly rotted and exposed to the action of the atmosphere to sweeten it. Calling on a friend the other day, we

found him in possession of a heap of pure vegetable mould that was almost a priceless possession. Two years ago he had occasion to put under cultivation a piece of land covered with the weed known as "twitch;" and the ground having been cleared of the pest, it was put into a heap, and laid by to rot, and it is now a heap of fine mould. What a capital soil for Auriculas, Polyanthuses, and other plants, that do well in leaf-mould.

Some nurserymen who till a number of acres of ground save all their weeds and rubbish, Docks, and others that might be thought hardly fit for rotting into mould. When thoroughly rotted it is mixed with dung, and sometimes with clay soil, and then put on ground for planting fruit-trees and shrubs. In a much smaller degree the Villa gardener can utilise his refuse, replenishing the earth by returning to it what it previously gave in the form of vegetable growth.

While on this point let us refer for a moment to a matter that caused a neighbour of ours, fond of his garden, much perplexity. He had mixed some leaf-mould with potting soil, and he was puzzled to find fungoid growths springing up in all directions. He was led to the conclusion that his leaf-soil had come from a bulk that had been formed of leaves gathered together and allowed to ferment, and that the process of fermentation, having been perhaps imperfectly accomplished, fungus spores had been generated that broke into activity when used in his potting soil. A general sourness seemed to pervade all the pots in which the compost had been used.

There is no vegetable mould like that gathered from beneath trees in woods where the leaves have fallen in autumn and decayed, and become pure mould. When this is gathered together it should be laid out somewhere, so that fowls or birds can work among it and clear it of insects. It will do it no harm to dry it thoroughly, and it will be in a great measure free of anything like injurious properties. The growers of plants for market are so particular about the soil they use that the rotten manure they take from a spent hot-bed is laid out in a yard in hot weather, and fowls are allowed to work about it in the freest manner. Not only are insects hunted out and devoured, but the manure gets ground down into a fine dry powder, in which form it is wheeled into the potting shed for use at potting time.

Reports of Societies.

Royal Horticultural: *Sept.* 17.—FLORAL COMMITTEE.—Dr. Denny in the chair. Messrs. Hooper & Co., Central Avenue, Covent Garden, contributed a small collection of tuberous-rooted Begonias, and were awarded a First-class Certificate for a double-flowered variety named Louis Thibaut, with rich crimson-scarlet flowers. Mr. Barron again sent up a collection of flowering plants of various Abutilons; and from Mr. Noble, Sunningdale, came cut blooms of the new Rose Queen of Bedders, and a plant of the dwarf Gynerium argenteum pumilum, which does not appear ever to exceed the height of from 4 to 5 feet. The Executors of the late Mr. John Keynes sent a fine assortment of Dahlias, and received a First-class Certificate for a very distinct new variety named Aurora, which can best be described as of a golden buff colour; and a certificate of the second class for a new fancy variety named Gaiety, large in the petal, and of a yellow ground colour tipped with white and flaked with crimson. Mr. Turner also sent a beautiful lot of blooms from Slough, and received a First-class Certificate for a seedling named Joseph Ashby, which Mr. Douglas well described in our last as being of orange-red colour, suffused with gold, and a variety that can be well recommended. Those well known Dahlia growers, Messrs. Rawlings Brothers, of Romford, also sent several novelties, and received a First-class Certificate for a well built, fine dark pink-shaded flower named Clara—a good and distinct flower. Turning from the double varieties, which have of late years monopolised so much of the florists' care and skill, it was refreshing to note the appearance of three single varieties, of sterling merit; and still more gratifying to find that the committee had awarded certificates of the first class to two of them. Mr. Cannell, of Swanley, was the exhibitor, and the varieties selected named lutea, a very good yellow, and Paragon, a fine flower with dark velvety maroon petals, edged with deep crimson. These single-flowered Dahlias are most valuable for cutting, so freely do they flower, and the sorts named above, together with the old coccinea, can be highly recommended for border cultivation (see p. 375). Mr. Cannell also contributed some fine cut blooms of Verbenas, including Lady of Lorne, a very fine light-coloured variety; Swanley Gem, a beautiful lilac-shaded flower; Life Guard, a grand scarlet; and Esmeralda, a showy white flower with purple markings. Messrs. John Laing & Co., Forest Hill, showed a strongly-grown and well-developed specimen of the new Japanese banded grass, Eulalia japonica zebrina, which was awarded a First-class Certificate. The plant had stood uninjured out-of-doors through the past winter, and showed unmistakably that coddling treatment was inimical to its successful culture. It is a good and distinct plant, well worth introducing into the flower garden, as has been done already on the Continent. Mr. Bull sent a small collection of plants, including the new plant illustrated at p. 85 under the provisional name of Artocarpus exsculpta, but which bore a small green round fruit, much more resembling that of a Ficus than an Artocarpus; also the scarlet and purple-flowered Bilbergia ascapa, several flowering plants of the fine white Lilium neilgherrense, and a small plant of Macrozamia cylindrica, which gained a First-class Certificate. From the Chiswick Garden came a new seedling Begonia raised by Mr. Barron, and named Nellie May—a very desirable aquisition, being a free and vigorous grower, a profuse bloomer, and having large well-formed flowers of a beautiful pale rose colour. Mr. Green, gr. to Sir George MacLeay, Pendell Court, again contributed some interesting things, including the umbellate inflorescence of the singular Brunsvigia Josephinæ, cut flower-spikes of Gloxinia maculata, a grand old stove plant, producing flowers of a rich shade of lilac or mauve; the curious white-flowered Costus speciosus, and a leaf of Nelumbium luteum, which measured 2 feet across, and which was awarded a First-class Certificate as a fine-foliaged hardy water plant. Messrs. Lane & Son, Berkhamsted, sent fruiting sprays of the yellow Castanea chrysophylla.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. Messrs. Thomas Rivers & Son, Sawbridgeworth, sent a collection of seedling and other Plums, several new Peaches, and a bunch of the Gros Maroc Grape, a variety sometimes confounded with the Black Morocco, but from which it is quite distinct, though rather coarse and of no particular value. The Messrs. Rivers also sent examples of a seedling Pear—a small variety in the way of Seckel, than which it is much earlier, and very rich in flavour. It was awarded a First-class Certificate, and has been named Dr. Hogg. Mr. Woodbridge, gr. to the Duke of Northumberland, Syon House, exhibited a most meritorious collection of pods of the Vanilla, some seventy-five or so in number, and received a Cultural Commendation. Mr. J. Walker, Thame, sent some fine specimens of Walker's Exhibition Onion"—a well-selected stock of the White Spanish, and a Cultural Commendation was also awarded to them. Mr. James Taplin, seed warehouse, Uxbridge, sent specimens of a "seedling Onion," named Paragon, "raised from seed saved in Europe," but which could not be distinguished from an ordinary stock of the old Brown Globe. From Mr. Dell, gr., Stoke Rochford, came a fruit of Dell's Hybrid Melon, cut from the same plant as the fruit which gained a First-class Certificate on July 2. It is a green-fleshed variety, and the fruit cut on this occasion was quite equal in flavour to the first one. Mr. Iggulden, gr. to R. B. W. Baker, Esq., Orsett Hall, Romford, sent examples of a seedling Globe Artichoke, which, however, showed no improvement on existing varieties.

Messrs. James Carter & Co. offered prizes for the best dishes of Vick's Criterion Tomato, a new American variety, and in a good competition the awards went to Captain Jackson, The Deodars, Meopham, Kent (Mr. Phillips, gr.); C. Eyre, Esq., Welford Park, Newbury (Mr. C. Ross, gr.), and Mr. W. Scott, gr., Pembroke College, Cambridge. Messrs. Hooper & Co. also offered two prizes for the best examples of Acme, also an American variety; and these were awarded to Mr. A. Hopkins and J. J. Friend, Esq., Northdown, Margate (Mr. F. Miller, gr.).

Brentwood Horticultural: *Sept.* 12. — The Brentwood Horticultural Society held their autumn show in the delightful grounds of the Countess Tasker, on Thursday, September 12. An excellent display of flowers, fruits, and vegetables was staged, but more especially the latter. In the chief class for plants there were but two exhibitors, each of whom staged neat selections. D. Macintosh, Esq., Havering (gr., Mr. Bones), took the 1st prize, having in his collection an admirably bloomed Stephanotis for this particular season, Bougainvillea glabra, Croton variegatus, &c.; O. E. Coope, Esq., M.P. (gr., Mr. Bradley), being an excellent 2d. Zonal Pelargoniums were well shown by Messrs. Mann & Meadmore, nurserymen; cut Roses by Messrs. Atkinson, Quennell, and Soder. The mixed collections of cut blooms of stove and greenhouse plants staged by Mr. Bones and Messrs. Saltmarsh, of Chelmsford, were also good.

In the open class for Dahlias there was an excellent and very spirited competition, the 1st, 2d, and 3d prizes in competition for twenty-fours being very close. Ultimately, however, the judges decided in favour of Mr. Rawlings, Romford, for 1st prize, Messrs. Saltmarsh & Sons 2d, and Mr. Smith, Edmonton, 3d. Mr. Smith's blooms were the largest, but they were not so even or uniform in merit throughout as were the two former.

Dahlias in competition by "amateurs of Essex" were well staged, the prizes going to Messrs. J. Hill, J. C. Quennell, and Mr. E. Mitchell, gr. to — Harrington, Esq. Asters were very excellent, especially those staged by Messrs. Saltmarsh.

The table decorations are generally a feature at this show, and some very chaste designs were staged. Mr. Burley, nurseryman, Brentwood, was 1st; Mrs. Bailey, Brentwood, being an admirable 2d; whilst in the minor class of single vases Miss Soder was 1st, Mr. Burley 2d, and Miss Haws 3d. The prizes offered to "lady amateurs" for single bouquets was won by Miss Soder—H. Burley, Master Meadmore, and Miss Haws carrying off the other prizes.

With collections of fruit, six dishes, Mr. Bones was 1st, W. R. Preston, gr. to — Pope, Esq., 2d; and Captain Tyrrell (gr., S. Ford), 3d. Excellent Grapes were staged by Messrs. Ford, Carver, Bones, Walker, Worthing, and others; Peaches by Mr. Clark and Mr. Ford; Plums, Mr. Bishop, Mr. Parker, and Mr. Finch; Filberts, Mr. Meadmore; Apples, Messrs. Iggulden and Bones; and Pears by Mr. Smith. Some splendid vegetables were shown by Mr. Iggulden, Bishop, Harrington, Walker, Carver, and Dr. Quennell, &c.; a large dish of Improved Conqueror Tomato, from Mr. Farrance, Chadwell, &c. There was an agricultural, or corn and root crop exhibition, held in connection, which seemed to attract many of the farming interest, the roots being exceptionally large and fine. We trust the great exertions of the committee were not entirely neutralised by the heavy storm which prevailed during the afternoon. *W. E.*

Northampton Floral and Horticultural Fete: *Sept.* 12 *and* 13.—This exhibition was held on the racecourse on the above date, side by side with the Northamptonshire Agricultural Society's annual show. Altogether eight or nine tents were filled with plants. Three of these were filled by Northampton nurserymen—Messrs. Thomas Perkins & Sons filling one, Messrs. John Perkins & Son another, and Messrs. Ball & Son a third. These three tents formed a show in themselves, for they were filled with collections of miscellaneous plants, both foliage and flowering; all in excellent condition, and being in each case tastefully grouped, gave great pleasure to visitors. In addition to plants Messrs. Thos. Perkins & Sons had cut Roses, spikes of Gladioli, collections of Apples and Pears, Potatos, &c. Messrs. J. Perkins & Son had Potatos and other things, and both nursery firms had on the show ground collections of coniferous plants of a very interesting character. Messrs. Ball & Son had cut flowers of Zinnias, Phloxes, &c.

Certain classes in the schedule of prizes, open to all England, brought a good competition. The class for twelve stove and greenhouse plants, in or out of bloom, brought groups from Mr. James Cypher, Queen's Road Nursery, Cheltenham; Mr. J. Parker, Victoria Nursery, Rugby; and Mr. John House, Eastgate Nursery, Peterborough; the prizes being awarded in the order of the names given. Mr. Cypher staged good examples of Allamanda Hendersoni, A. nobilis, Ixora sanguinea, Vinca oculata rosea, Ixora Williamsii, Bougainvillea glabra, Cycas revoluta, Latania borbonica, Croton variegatus, C. undulatus, and Cycas Normanbyana. Mr. Cypher also had the best eight exotic Ferns, staging good examples of Adiantum farleyense, A. cardiochlæna, A. trapeziforme, Cibotium regale, Gleichenia Mendelii, Davallia Mooreana, Gleichenia rupestris, and Dicksonia antarctica densifolia. 2d, Mr. John Holland, gr. to P. Phipps, Esq., M.P., Northampton, with a very fine example of Goniophlebium glaucum growing in a suspended basket, and in admirable condition; Adiantum formosum, Gymnogramma chrysophylla, Alsophila excelsa, &c.

There was a good competition in the class for eight fine-foliaged plants, Mr. J. House being 1st with Croton interruptus, C. pictus, Dasylirion gracile, Cycas revoluta, Areca Verschaffeltii, Phormium Veitchii, &c. Mr. Fair was 2d with smaller plants of very good character, including Caladium violaceum, Cissus discolor, Croton variegatus, C. interruptus, Phœnix reclinata, &c. In the class for eight Coleus some very good plants were staged, those having the best growth coming from Messrs. T. Perkins & Sons. Messrs. John Perkins & Sons came in 2d with well-grown plants admirably coloured, but done so at the expense of growth, the leaves being quite small. Other open classes included Fuchsias, Begonias, in which varieties of the type of B. weltoniensis were mixed with examples of the handsome-leaved stove section; Petunias, Pelargoniums of various sections, &c.

In the class for eight stove and greenhouse plants, open to gentlemen's gardeners, Mr. H. Ward was placed 1st, with some examples, mainly of foliage plants, including Pandanus Veitchii, Maranta zebrina, Cycas revoluta, Croton variegatus, Yucca quadricolor, Latania borbonica, &c. Mr. J. Day was 2d,

with Clerodendron Balfourianum, Eucharis amazonica, Cycas circinalis, Allamanda Hendersoni, &c.

Mr. Ward also had the best six Ferns, the group having well grown examples of Lygodium scandens, Lomaria gibba, Thamnopteris Nidus, Cibotium princeps, Adiantum farleyense, &c. The class for six Coleus comprised good plants of Beauty of St. John's Wood, Queen Victoria, Lady Burrell, Prince of Wales, and Baroness Rothschild.

The class for the best arranged table decoration was one that awakened much interest in the neighbourhood, and brought a spirited competition between Mr. James Cypher, Cheltenham; Mr. Haskins, The Gardens, Stowe, Buckingham; and Mr. J. Parker, Rugby. Mr. Cypher was far ahead for lightness, elegance, and tasteful arrangement; the others following in the order of their names. Mr. Haskins' arrangement was as meagre in some respects as Mr. Parker's was overdone; but it had the advantage in point of taste. Baskets of flowers arranged for effect, bouquets, &c., were all fairly well represented in their division. Model gardens were, as usual, represented by highly coloured designs of impossible execution that, as is usual, set all laws of geometrical arrangement and perspective at defiance.

Cut flowers were represented by Dahlias, Gladiolus, Roses—some good flowers cut from the seedling Brier coming from Julius Hadden, Esq., Chipping Norton, Asters, Stocks, &c. Small stands of Dahlias had to be disqualified through exhibitors mixing up show and fancy flowers. So long as these distinctions are retained in schedules they should be regarded; and any catalogue of Dahlias gives separate lists of fancy and show flowers.

The best collection of fruit in the open class came from Mr. J. Chater, gr. to Sir C. Isham, Bart., and consisted of Black Hamburgh and White Muscat Grapes, Peaches, Nectarines, Plums, Figs, Pears, &c.; Mr. John Day, Damsby, being 2d. Black and white Grapes shown in two bunches of each were fairly well represented. In the class for six dishes of Apples, three culinary and three dessert varieties, a large quantity of fine fruit was shown; and in the class for single dishes of Apples and Pears a capital show resulted.

While all vegetables were largely and exceedingly well shown, Potatos were very good indeed. The best collection of twelve dishes came from W. Emerton, Esq., Cold Ashley Hall, Welford, Rugby, who had very fine examples of Red Emperor, Trophy, Buck Fluke, Beauty of Hebron, Septennial, Farquhar's Favourite, Heather Bell, Snowflake, Countess, &c.; 2d, Messrs. W. Ball & Co., Northampton. In the class for six dishes, Mr. Eads, gr. to J. Beck, Esq., Northampton, was 1st with fine examples of International Kidney, Snowflake, Porter's Excelsior, Model, Sutton's King, and Schoolmaster; 2d, W. Emerton, Esq., with Magnum Bonum, Duninisk, Lapstone, Grampian, &c. In all other classes good tubers were produced.

Stevenage Horticultural : *Sept.* 13.—This was the autumn exhibition of this Society, and, as usual, took place in the public hall. The principal exhibitors were J. B. Denton, Esq.; Col. Metcalfe, C.B.; Col. Wilkinson, Rev. J. E. Pryor, G. Salmon, Esq.; J. W. Smith, Esq.; Rev. C. F. G. Jenyns, Rev. J. O. Seager, Esq.. &c. The plants staged comprised Coleus, Ferns and Lycopods, Fuchsias, and other plants in season just now. The best six specimens came from J. B. Denton, Esq., Col. Wilkinson being 2d. Captain Fellowes had the best four Fuchsias, the Rev. J. O. Seager being 2d. In the amateurs' class for Fuchsias, Mr. T. W. Franklin was 1st, and Mr. H. May 2d; and the former had the best four plants of any class.

In the cottagers' classes for plants, Vallota purpurea, Fuchsias, Solanums, Cockscombs, and Hydrangeas were well shown, and their fruit and vegetables were as usual remarkably good.

The best basket of fruit came from the Rev. J. E. Pryor; this included Grapes, Peaches, Nectarines, Plums, &c.; Col. Wilkinson being 2d. Peaches and Plums were very good, and Pears particularly so—Bon Chrétien being very fine. Dessert and culinary Apples were numerous and fine, Lord Suffield being very large and handsome.

In the vegetable classes Potatos were very good, a dish of Snowflake from Colonel Wilkinson taking the lead. Carrots were specially good—Long Surrey, James' Intermediate, and Early Horn being well represented. The best basket of vegetables came from the Rev. J. O. Seager, Captain Fellowes being 2d—both very good.

The collections of wild flowers, shown by cottagers' wives or daughters, and showing taste in the arrangement, were very meritorious; the best came from Martha Gilliams, Elizabeth Pigott being 2d. In the open class for cut flowers George Salmon, Esq., and J. B. Denton, Esq., took 1st prize for beauty and value and for effect in arrangement.

The best super of honey came from the Rev. C. F. G. Jenyns, weighing 22½ lb., while another fine super weighed 19½ lb.

It is universally acknowledged that the establishment of the Stevenage shows has done much to improve gardening among the cottagers in Stevenage, Aston, Little Wymondley, Graveley, Bennington, and Weston, while the awarding of prizes to the best cultivated cottage gardens has proved very successful. Unfortunately, through deaths and removals, the subscription list has materially declined, and it is feared one of the two exhibitions in each year will have to be abandoned.



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, SEPT. 18, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Mean of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for the Day.	Departure of Mean from Average of 60 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
Sept	In.	In.	°	°	°	°	°				In.
12	29.92	+0.01	68	53	15	58.0	+0.4	51.6	85	WSW. NNW	0.02
13	29.91	+0.03	67	54	13	60.2	−2.0	46.8	73	NNE.	0.00
14	29.83	−0.05	68	0	46	0.2	0.0	56.2	—	1.0	51.9	80	NNW. N	0.00
15	29.53	−0.34	67.6	54.2	13.4	59.1	+2.0	53.8	83	S.S.W.	0.14
16	29.73	−0.13	61.3	48.1	13.2	55.0	−1.9	43.2	65	WNW. W. WSW	0.00
17	29.78	−0.07	66.4	49.8	16.8	57.7	+1.1	53.7	86	S.W.	0.00
18	29.55	−0.29	62.4	49.5	12.9	55.8	−1.6	53.6	96	WSW. WNW	0.25
Mean	29.75	−0.11	66.3	49.6	16.7	59.6	−0.4	50.6	82	Variable.	Sum 0.41

Sept. 12.—Fine to 11 A.M. Dull and cloudy to 3 P.M. Fine after 3 P.M. Cloudless at night. Sudden squalls of wind, with smart showers of rain from 1.30 to 2 P.M.

— 13.—A very fine day. Light clouds till evening, then cloudless. Cool.

— 14.—A very fine bright day. Clear till 8 P.M., overcast after.

— 15.—Dull, stormy day. Strong gusts of wind. Rain commenced to fall at 7.30 P.M.; and fell heavily at 9.30 P.M.

— 16.—A fine bright day. Rough and windy. Cool.

— 17.—Dull and cloudy, fine at times. Overcast after 4 P.M. Few drops of rain at 4.45 P.M.

— 18.—Dull, miserable, and frequently showery till 3 P.M. Fine after. Cloudless at night. Windy. Cool.

LONDON : *Barometer.*—During the week ending Saturday, September 14, in the suburbs of London the reading of the barometer at the level of the sea decreased from 30.09 inches at the beginning of the week to 30.02 inches by noon on the 8th, increased to 30.30 inches the morning of the 11th, decreased to 30.07 inches by the afternoon of the 12th, increased to 30.15 inches by the evening of the same day, decreased to 30.01 inches by the afternoon of the 14th, and was 30.02 inches at the end of the week. The mean reading for the week at sea level was 30.12 inches, being 0.03 inch below that of the preceding week, and 0.04 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 76⅔° on the 8th and 76½° on the 11th, to 67½° on the 13th; the mean value for the week was 70½°. The lowest temperatures of the air observed by night varied from 46° on the 14th, and 46½° on the 11th, to 57° on the 8th; the mean for the week was 51°. The mean daily range of temperature in the week was 19⅔°, the greatest range in the day was 30° on the 11th, and the least 12⅔° on the 9th.

The mean daily temperatures of the air and the departures from their respective averages were as follows: — 8th, 62°.6, + 4°.3; 9th, 61°.2 + 3°.9; 10th, 58°.6, + 0°.6; 11th, 59°.1, + 1°.3; 12th, 58°, + 0°.4; 13th, 55°.4, — 2°; 14th, 56°.2, — 1°. The mean temperature of the air for the week was 58°.7, being 1°.1 above the average of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 146° on the 8th, 147° on the 11th, and 134° on the 14th; on the 9th the reading did not rise above 105°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 38½° on the 14th, and 38⅔° on the 13th; the lowest reading on the 8th was 49½. The mean of the seven low readings was 42⅔°.

Wind.—The direction of the wind was variable, and its strength gentle.

The weather during the week was fine, warm, and dry.

Rain.—A little rain fell on the 8th and 12th; the amount measured was 0.04 inch.

ENGLAND : *Temperature.*—The highest temperatures of the air observed by day were 79° at Sunderland, 76½° at Blackheath, 75½° at Eccles, and 74° both at Bristol and Cambridge; the highest temperature of the air at Liverpool was 64°, and at Wolverhampton was 69°; the mean value from all stations was 72½°. The lowest temperatures of the air observed by night were 38½° at Nottingham, 38⅔° at Eccles, and 40⅔° at Bristol; the lowest temperature of the air at Sunderland was 49°, and at Liverpool was 49½°; the mean from all stations was 44½. The range of temperature in the week was the greatest at Eccles, 37°, and the least at Liverpool, 14½°; the mean range from all stations was 27¾°.

The mean of the seven high day temperatures was 71¼° at Cambridge, 70⅜° at Blackheath and Sunderland, and 70½° at Bristol, and the lowest at Liverpool, 63¼°, and Wolverhampton, 64½°; the general mean from all stations was 68°. The mean of the seven low night temperatures was the lowest at Eccles, 45⅔°, Nottingham 46¼°, and Bristol, 47⅔, and the highest at Liverpool, 53½°, and Norwich 53°; the mean value from all stations was 50¼°. The mean daily temperatures of the air was the least at Liverpool, 58°, and the greatest at Bristol and Cambridge, both 22⅔°; the mean daily range from all stations was 17⅔°.

The mean temperature of the air for the week from all stations was 57⅔°, being 1° higher than the value for the corresponding week in 1877. The highest were 60½° at Sunderland, 59½° at Truro, and 59¼° at Norwich; and the lowest were 55° at both Wolverhampton and Eccles, and 56° at Nottingham.

Rain.—The heaviest falls of rain were 0.91 inch at Wolverhampton (0.78 inch of which fell on the 8th), and 0.69 inch at Plymouth (0.68 inch of which fell on the 8th), at Sheffield and Leeds 0.03 inch only was measured, and at Brighton and Truro no rain fell; the average fall over the country was 0.20 inch.

The weather during the week was fine, bright, and warm.

Thunderstorms occurred at many places on the 8th. On the 12th at Brighton there was a singular squall and whirlwind at 2.35 P.M.; the temperature fell from 67°.3 at 2 P.M. to 57°.8 at 2.50 P.M.

SCOTLAND : *Temperature.*—The highest temperatures of the air varied from 71° at Dundee to 65° at Paisley; the mean from all stations was 68½°. The lowest temperatures of the air varied from 45° at Perth to 50½° at Glasgow; the mean from all stations was 48½°; the mean range of temperature from all stations was 20°.

The mean temperature of the air for the week from all stations was 58½°, being 4° higher than the value for the corresponding week in 1877. The highest was 59½°, at Glasgow, and the lowest 57°, at Aberdeen.

Rain.—The falls of rain varied from 1.86 inch at Greenock, to 0.14 inch at Leith; at Paisley no rain was measured; the average fall over the country was half an inch.

DUBLIN.—The highest temperature of the air was 72½°, the lowest 42½°, the range 30½°, the mean 59¾, and the fall of rain 0.23 inch.

JAMES GLAISHER.

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

BOOKS : *J. Z.* Kemp's *How to Lay Out a Garden* is an excellent work of its class; and there is a book of *Designs for Flower Beds*, published at 171, Fleet Street. The two may be had for about a sovereign.—*M. D.* Your question is very indefinite. What class of information do you specially require?

COMPOST FOR VINE BORDER : *A.* To six cartloads of your medium loam add one cartload of lime rubbish. To every yard of this compost add one bushel of charcoal and half a bushel of inch bones in preference to half-inch.

DAHLIA IMPERIALIS : *M. D.* It can be grown out-of-doors, in a large pot or tub, during the summer months, but it must be taken into the greenhouse in the autumn to flower. It is a very tall-growing plant, but majestic when in flower.

DAIRY SHOW : *C. Osman.* Write to the Secretary of the Agricultural Hall Company, Islington.

FUCHSIA : *E. S.* Your seedling closely resembles some of Mr. Lye's type of varieties, also Bull's Monarch, and does not appear to be any improvement upon some of the forms of this useful, vigorous-growing race already in cultivation, the characteristics of which are their large straight-sepaled flowers.

FUNGI : *Camjee.* The name of the fungus on the Colts-foot is Puccinia compositarum; on the Poplar, Melampsora populina. There is no connection between the two parasites. The cause of the attack we cannot explain further than by saying that it is the nature of

the fungi to attack, and the common fate of the two plants mentioned to be assailed.

FIGS: *H. C.* Keep the tree drier at the roots if you can, and root-prune it by digging a trench about 4 feet from the stem any time during the autumn.

HYBRID: *B. Wilson.* When the flowers of one species are set or fertilised by the pollen of another species, the offspring, if any, is a hybrid. When two varieties of one species are intercrossed the result is not a hybrid, properly speaking, but a "cross."

INSECTS: *T. Simpson.* The insect sent is the common rove beetle, Staphylinus murinas, which feeds on worms, &c. The "eggs" attached to its body are parasitic mites.—*T. Taylor.* The white insects are the common Aleyrodes vaporariorum (illustrated long ago in this journal); an insect closely allied to the scale coccidæ. Repeated fumigation and destruction of badly infested plants are the only remedies. *I. O. W.*

MULBERRY TREE: *X. B.* You can do no good by grafting. Doubtless the tree will come into bearing in due time.

NAMES OF FRUIT: *Geo. Bunyard. Apples:* 1, Devonshire Buckland; 2, Manks Codling, a fine specimen. —*Ivy Green.* We cannot name with certainty any of the Apples you have sent. They are a strange lot—many probably local seedlings—and some are cider varieties which we know not.

NAMES OF PLANTS: *J. S. C.* The leaf and fruit of Medicago echinus, as you will at once recognise by the



FIG. 69.—LEAF OF MEDICAGO ECHINUS.

accompanying illustrations (figs. 69, 70), reproduced from p. 1148, 1873. It is a native of the Levant, and is considered symbolic of the passion of our Lord. On its leaves may be seen the signs of the wounds,

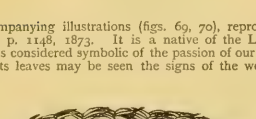


FIG. 70.—FRUIT OF MEDICAGO ECHINUS.

while the curved and spiny thorn symbolises the crown of thorns.—*J. Mechi.* Rather too young for identification, but apparently Adiantum hispidulum. —*T. P., Porthgwidden.* 1, Melaleuca hypericifolia; 2, send again when in flower.—*W. B., Rugby.* 1, Polygonum cuspidatum; 2, Cuphea virgata; 3, specimen insufficient; 4, Erica retorta.—*J. L.* Pittosporum undulatum.—*W. Marshall.* Both names are quite correct.—*S.* 1, seems to be Abelia spathulata. Will you please send us a good specimen for the herbarium?; 2, we cannot undertake to name without flowers.—*T. F.* 1, Lychnis flos-cuculi; 2, Calceolaria glutinosa; 3, probably Mesembryanthemum formosum, specimen insufficient; 4, an Aster, but the scrap is too miserable to name.—*S. S.* Cornus mas, the Cornelian Cherry. — *W. Earley.* Polygonum cuspidatum. — *Florence Court.* 1, Carpinus Betulus incisa; 2, Acer campestre; 3, Fraxinus heterophylla; 4, Quercus rubra.

SALISBURIA ADIANTIFOLIA: *H. E. R. T.* Keep them in a cold greenhouse for a winter or two.

SEMPERVIVUMS: *H. E. R. T.* Pull off the outer leaves and plant them like cuttings in sand. They will strike root and eventually throw up a young shoot.

SLUGS AND SNAILS: *G. Harding.* Your best plan will be to dust the top of the wall with limedust or soot in the early morning.

CATALOGUES RECEIVED.—The New Plant and Bulb Company (Lion Walk, Colchester), a Retail List of Japanese and other Lilies, Orchids, Bulbs, &c.—Daniels Brothers (Norwich), Illustrated Descriptive Catalogue of Dutch Flower Roots, Fruit Trees, Roses, &c.—M. Saunders & Sons (Friar's Walk Nurseries, Cork), Descriptive Catalogue of Dutch Bulbs, Gladioli and other Flower Roots; Greenhouse, Stove, and Hardy Plants, &c.—John Scott (Yeovil), Catalogue of Dutch Flower Roots.—J. Linden (Ghent, Belgium), Special Catalogue of Stove, Greenhouse and Hardy Plants.—Wood & Ingram (Huntingdon), Catalogue of Dutch Bulbs, &c., Carnations, Picotees, Pinks, and Strawberries, &c.—Hogg & Robertson (22, Mary Street, Dublin), Catalogue of Dutch Flower Roots.—Samuel Gates (16 and 18, Old Millgate, Manchester), Illustrated Catalogue of Dutch, French, and German Flowering Bulbs.—A. Godwin & Sons (Ashbourne), Select and Abridged Catalogue of Roses.—James Yates (Royal Oak Mills, Stockport), Illustrated Catalogue of Dutch, French, and German Flowering Bulbs. —G. Cooper & Co. (Chiswick Seed Warehouse, Derby), Select List of Dutch Bulbs, Gladioli, &c.—E. G. Henderson & Son [(Pine-apple Nursery, Maida Vale, W.), Catalogue of Dutch Bulbs and other Flower Roots.—T. Carden (3, Union Street, Leicester). List of Hyacinths and other Dutch Flower Roots.—Ellwanger & Barry (Mount Hope Nurseries, Rochester, New York), Descriptive Catalogue of Fruits.

ERRATA.—In the communication on Judging Melons, p. 347, in last line, for "little" read "better." In the article on Asparagus Culture, on p. 312, col. *b*, line 42, for "mounding" read "dismounding." *D. T. Fish.*

COMMUNICATIONS RECEIVED.—J. McI.—W. J.—S. J.—C. & R.—T. T.—R. W. A., Uitenhage (many thanks, we shall be glad to hear from you again).—A. Taylor.—S. C. B.—C. Y. M.—W. P.—P. N. F.—J. S.—G. E. F.—T. M.—M. D.—Tydia.—J. Le Cornu.—H. C.—W. J. M.—J. R.—M. McL.—J. D.—T. W.

Obituary.

A CORRESPONDENT informs us of the death, on the 9th inst., at Crowton, Delamere, Cheshire, in his ninety-third year, of MR. JAMES BROWN, for many years gardener in the service of the late Duke of Buckingham, and of Lord Southampton. Our correspondent mentions that about the year 1822 Mr. Brown grew one of the largest Pines that has ever been obtained in this country, and which was presented by the Duke of Buckingham to his Majesty George IV.

Markets.

COVENT GARDEN, September 19.

Grapes still remain at the same prices, owing to large quantities now arriving from Hamburgh. The supply of Peaches and Nectarines has very much decreased within the last week, the quantity arriving not being equal to the demand. Trade still remains in a very quiet state. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.

	s. d.	s. d.
Abutilon, 12 blooms	0 6–	1 0
Asters, 12 bunches	3 0–	9 0
Bouvardias, per bun.	1 0–	4 0
Calceolaria, 12 bun.	6 0–12	0
Carnations, 12 bunch.	4 0–12	0
Cornflower, 12 bun.	2 0–	6 0
Dahlias, 12 bunch	3 0–	9 0
Delphinium, 12 bun.	6 0–12	0
Eucharis, per doz.	4 0–12	0
Gardenias, 12 blms	3 0–	9 0
Gladioli, various, 12 spikes	1 0–	4 0
Heliotropes, 12 sp.	0 6–	1 0
Jasmine, 12 bunches	6 0–12	0
Mignonette, 12 bun.	2 0–	6 0
Myosotis, 12 bun.	3 0–	6 0
Pelargoniums, 12 spr.	0 9–	1 6
— zonal, 12 sprays	0 4–	1 0
Phlox, 12 bunches	6 0–12	0
Primula, double, per bunch	1 0–	2 0
Pyrethrum, 12 bun.	3 0–	6 0
Roses (indoor), doz.	1 6–12	0
— (outdoor), 12 bun.	3 0–12	0
Spiræa, 12 sprays	1 6–	4 0
Stephanotis, 12 sp.	3 0–	9 0
Sweet Peas, 12 bun.	2 0–	6 0
Sweet Sultan, 12 bun.	6 0–	9 0
Tropæolum, 12 bun.	1 0–	3 0

PLANTS IN POTS.

	s. d.	s. d.
Asters, per doz.	4 0–12	0
Begonias, per doz.	4 0–12	0
Bouvardias, do	9 0–24	0
Calceolarias, p. doz.	6 0–12	0
Chrysanth., per doz.	6 0–	9 0
Coleus, per dozen	3 0–	9 0
Cyperus, do.	2 0–12	0
Dracæna terminalis	30 0–60	0
— viridis, per doz.	18 0–24	0
Euonymus, various, per dozen	4 0–18	0
Ferns, in variety, per dozen	4 0–18	0
Ficus elastica, each	2 6–15	0
Foliage Plants, various, each	2 0–10	6
Fuchsias, per dozen	3 0–12	0
Mignonette, per doz.	3 0–	9 0
Musk, per dozen	2 0–	6 0
Myrtles, per doz.	4 0–12	0
Palms in variety, each	2 6–21	0
Pelargoniums, scarlets, zonal doz	2 6–	6 0
Petunias, per dozen	4 0–12	0
— Fairy, per doz.	0 0–12	0
Vallota, per doz.	0 0–24	0

VEGETABLES.

	s. d.	s. d.
Artichokes, English Globe, doz.	2 0–	4 0
Beans, French, lb.	0 4–	0 6
— runners, p. bush.	4 0–	6 0
Beet, per doz.	1 0–	2 0
Cabbages, per doz.	1 0–	2 0
Carrots, per bunch	0 4–	0 6
Cauliflowers, per doz.	2 0–	3 0
Celery, per bundle	1 6–	2 0
Chilis, per 100	5 0–	..
Cucumbers, each	0 4–	1 6
Custard Mar., doz.	3 0–	..
Endive, Batav. dozen	1 6–	..
Garlic, per lb.	0 6–	..
Herbs, per bunch	0 0–	0 4
Horse Radish, p bun.	4 0–	..
Lettuces, Cos, Eng., per score	1 6–	2 6
Mint, green bunch	0 4–	0 6
Onions, young, bun.	0 0–	0 6
Parsley, per bunch	0 4–	..
Peas, green, per qr.	1 6–	2 0
Radishes, per bunch	0 1–	0 3
— Spanish, doz.	1 0–	..
— New Jersey, doz.	2 0–	..
Shallots, per lb	0 6–	..
Spinach, per bushel	2 0–	3 0
Tomatos, per dozen	2 6–	3 0
Turnips, new, p. bun.	0 6–	..
Vegt. Marrows, doz.	2 0–	..

The Potato trade is dull, and prices remain the same:—Myatt's, 120*s.* to 160*s.*; Regents, 100*s.* to 130*s.*; Early Rose, 110*s.* to 120*s.* per ton.

FRUIT.

	s. d.	s. d.
Apples, ½-sieve	1 6–	4 0
Figs, per dozen	0 6–	2 0
Filberts, per lb.	0 0–	0 0
Grapes, per lb.	0 6–	4 0
Lemons, per 100	10 0–18	0
Melons, each	1 0–	3 0
Peaches, per dozen	6 0–15	0
Pears, per doz.	1 0–	3 0
Pine-apples, per lb.	2 0–	6 0
Plums, ½-sieve	2 0–	5 0

SEEDS.

LONDON: *Sept.* 18.—Our market this week has been thinly attended, and a quiet feeling generally has characterised the trade for farm seeds. In the Western States of America the new crop of red Clover seed is now being marketed; but merchants here are loath to operate unless at very moderate rates. The abundant surplus which it is believed that the States and also Canada will have to send us naturally acts as a hindrance to any speculative forward buying; and, of course, diminishes the importance which would otherwise be attached to the reported short yield this season of the Bordeaux seed. A few more small parcels of yearling Clover have just been shipped to France; but the total quantity lately exported there from London is comparatively insignificant. Thanks to the recent favourable weather there will, it is said, be a good crop of English seed: some fine samples of Cow-grass, well adapted for colonial orders, have already been shown on Mark Lane. Several choice parcels of Alsike and white Clover are now offering at very reasonable prices. In Trefoil there is no fresh movement, but values are extremely firm. Trifolium meets a quiet sale on former terms. Of winter Tares the supply is liberal; many lots which offer prove in bad condition. Rape seed must be quoted 1*s.* to 2*s.* per qr. dearer. Much of the new white Mustard comes to hand soft and damp. The Canary seed market exhibits increasing strength; the late substantial advance is said to be justified by the lessened production this year, and also by the low range of prices out of which the start upward took its rise. Good blue Peas are scarce, and command full rates. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade was very dull at Mark Lane on Monday. Wheat was 2*s.* per quarter lower on the week, and there was little disposition to buy at the reduction. Barley was slow of sale, but there was some inquiry for good malting produce at full prices. Grinding Barley was slightly cheaper. Malt was steady on former terms. Oats were in limited demand, and in the value of inferior corn there was a small reduction. Maize was not well supported, the inquiry being restricted. Beans and Peas were held for previous rates. Flour was about 1*s.* cheaper.—On Wednesday prices for English Wheat were much the same as on Monday. Foreign was plentiful, and where sales were forced some further reduction had to be submitted to. Malting Barley was firm, with an improving tendency, but grinding qualities continued weak. Oats and Maize, Beans, Peas, and flour were in limited request, and the market altogether presented a dull and weak appearance.—Average prices of corn for the week ending September 14:—Wheat, 45*s.*; Barley, 41*s.* 11*d.*; Oats, 24*s.* 4*d.* For the corresponding period last year:—Wheat, 59*s.*; Barley, 40*s.* 1*d.*; Oats, 27*s.* 2*d.*

CATTLE.

At the Metropolitan market on Monday the average prices for beasts scarcely altered; the weather being good, a fair clearance was made. For sheep the demand was good, and there was little reduction in this department. The lamb season may be considered closed, only very few are now saleable. Calves were rather lower. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* to 7*s.*; pigs, 4*s.* to 5*s.* 4*d.* — Trade on Thursday ruled quiet but steady. Prime breeds were in request, otherwise the market was quiet. Sheep were rather scarce, and were dearer. Calves sold at about late rates.

HAY.

At Whitechapel, on Tuesday, there was a steady demand, and prices ruled firm. The supply was moderate. Prime old Clover, 120*s.* to 140*s.*; new, 100*s.* to 120*s.*; inferior, 80*s.* to 90*s.*; prime old meadow hay, 90*s.* to 98*s.*; new, 80*s.* to 90*s.*; inferior, 50*s.* to 70*s.*; and straw, 43*s.* to 52*s.* per load.—On Thursday there was a moderate supply on offer. A fair demand prevailed, but prices were rather easier for Clover. — Cumberland Market quotations:—Superior meadow hay, 92*s.* to 100*s.*; inferior, 70*s.* to 82*s.*; superior Clover, 126*s.* to 135*s.*; inferior, 90*s.* to 105*s.*; and straw, 50*s.* to 55*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that supplies have been limited, and with disease still very prevalent, the better kinds are worth about 10*s.* per ton more than a week back. Kent Regents 125*s.* to 140*s.* per ton; Essex ditto, 85*s.* to 110*s.*; Early Rose, 120*s.* to 140*s.*; kidneys, 110*s.* to 150*s.*; shaws, 55*s.* to 90*s.*—The imports into London last week amounted to 5657 bags, of which 3257 bags were received from Hamburg, 1169 Antwerp, 1024 Bremen, 107 Dunkirk, and 100 Boulogne.

COALS.

A good demand was experienced on Monday for house coals, and "seconds" advanced 6*d.* per ton. Wednesday's trade was dull, at the following quotations:—East Wylam, 16*s.* 6*d.*; Springwell West Hartley, 14*s.* 9*d.*; Walls End—Hetton, 18*s.* 6*d.*; Hawthorns, 17*s.* 3*d.*; Lambton, 18*s.*; Original Hartlepool, 18*s.* 6*d.*; Wear, 16*s.* 6*d.*; Tunstall, 17*s.* 3*d.*

WHOLESALE RUSSIA MAT MERCHANTS.
NEW ARCHANGEL MATS.
ST. PETERSBURG MATS.
RAFFIA FIBRE, NETTING, CANVAS, &c.
MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

TO ENHANCE THE VALUE OF
SEED,
IT SHOULD BE PUT INTO
BAGS
AND
SACKS,
SELECTED FROM OUR BEST MAKES,
WITH
SPECIAL SEWING.
SAMPLES AND PRICES POST FREE.

STARKEY, SONS & CO.,
CORN EXCHANGE, LONDON.

PARIS EXHIBITION.
FOR PORTMANTEAUS, TRUNKS, *BAGS and HAT CASES*,
GO TO
RILEY & CO., 283, Strand (opposite Norfolk Street).
Also the TOURIST COMPANION. Store Prices.

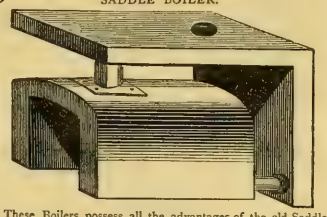
SADDLE BOILER (18-inch, Wrought Iron) and Greenhouse STEP LADDERS to dispose of cheap.
J. R., 8, Elizabeth Street, Eaton Square, S.W.

COALS FOR HOTHOUSE PURPOSES.

WOOD AND CO.'S
STAR ANTHRACITE SMOKELESS STEAM COAL
is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.
WOOD AND CO. deliver in truck-loads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).
WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.
Tottenham Nursery, London, N., Dec. 28, 1877.
To Messrs. Wood & Co.
Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,
(Signed) G. BECKWITH & SONS.
WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.
WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

AGRICULTURAL LOCOMOTIVES,
STEAM PLOUGHING MACHINERY,
ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES, STEAM ROAD ROLLERS.
For Prices, Description, and Reports of Working, apply to the Manufacturers,
AVELING & PORTER,
ROCHESTER, KENT; 72, CANNON ST., LONDON, E.C.; and 9, AVENUE MONTAIGNE, PARIS.
AVELING & PORTER'S ENGINES have gained the highest Prizes at every important International Exhibition. The two Medals for Progress and Merit were awarded them at Vienna for their STEAM ROLLERS and ROAD LOCOMOTIVES; and at the last trials of the Royal Agricultural Society of England their AGRICULTURAL LOCOMOTIVES gained the First Prize after exhaustive trials, when one of their 10-horse power Engines, fitted with single slide and ordinary link-motion, indicated 35-horse power, with a consumption of *three and one-fifth pounds of coal* per horse-power per hour.

JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space set back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	18 in.	18 in.	300	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1000	16 0 0
24 ,,	24 ,,	48 ,,	1400	20 0 0
28 ,,	28 ,,	60 ,,	1800	25 0 0

Larger sizes if required.
From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May* 29, 1873.
"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."
PRICE LISTS of HOT-WATER PIPES and CONNECTIONS, with Boilers, of all sizes and shapes; or ESTIMATES for HOT-WATER APPARATUS, erected complete, will be sent on application.
J. JONES AND SONS, Iron Merchants, 6, Bankside, Southwark, London, S.E.
When ordering Boilers please refer to the above advertisement

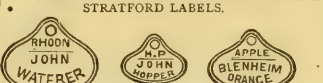
ROSSER & RUSSELL
HORTICULTURAL ENGINEERS
WARMING VENTILATING & SANITARY



NEW CATALOGUE
Of CONSERVATORIES and GREENHOUSES in Wood and Iron, architecturally treated and designed expressly for this work. Post-free 15.
OFFICES & SHOWROOMS, 46 CHARING CROSS.
WORKS QUEEN'S WHARF HAMMERSMITH.

Indestructible Terra-Cotta Plant Markers.
MAW AND CO.'S PATENT.—Prices, Printed Patterns, and Specimens, sent post-free on application; also Patterns of Ornamental Tile Pavements for Conservatories, Entrance Halls, &c.
MAW AND CO., Benthall Works, Broseley.

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.



WOOD TRAINING STICKS and TALLIES, commended by Royal Horticultural Society; BAMBOO CANES, RAFFIA for tying, VIRGIN CORK, ARCHANGEL and other MATS, PACKING MATS, &c. Wholesale prices on application to
C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
T. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade

THE GARDEN POTTERY, Old Down, Shepton Mallet.
We try to be first, and we mean to be always first,
FOR COLOUR, MANUFACTURE, AND WEATHER QUALITIES.
"I think your Flower Pots far better than any I have had from other potteries."—Mr. DART, *Gardener to the Right Hon. the Lady Waldegrave, Jan.* 25, 1878.—HYACINTH POTS.

Oil Paint No Longer Necessary.



(*Registered Trade Mark*)
HILL AND SMITH'S BLACK VARNISH for Preserving Ironwork, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.
UNSOLICITED TESTIMONIAL RECEIVED MAY 3, 1877.
"*The Ryleys, Alderley Edge, Manchester.*—Messrs. Hill & Smith.—Sirs,—For some 20 years I have used your 'Black Varnish,' and shall be glad if you will forward me another cask, *as I consider it the best thing known for the preservation of all outdoor work, either wood or iron*, that requires to be painted.—Yours respectfully, ALFRED LOWE, J.P."
Apply to HILL AND SMITH, Brierly Hill Ironworks, near Dudley; 118, Queen Victoria Street, London, E.C.; and 180, Buchanan Street, Glasgow, from whom only it can be obtained.
CAUTION.—It having lately come to the knowledge of HILL & SMITH that spurious imitations of this Varnish are being offered by unprincipled dealers at a slight reduction in price, they would especially draw attention to the fact that every cask of their varnish is legibly marked with their name and address, without which none is genuine.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.
The fasteners are brass or copper. The peculiar arrangement of the glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.
The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.
Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.
Extract from *Building News*.
"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."
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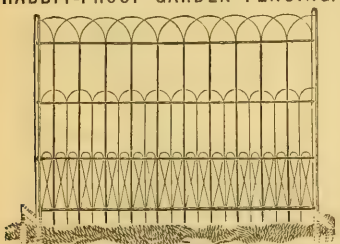
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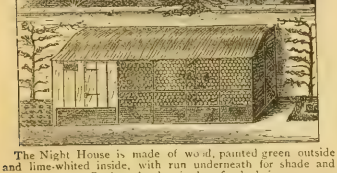
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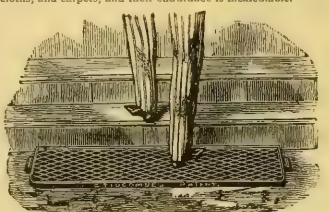
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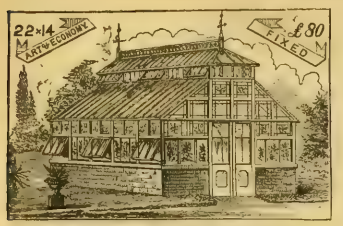
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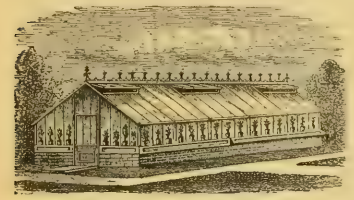
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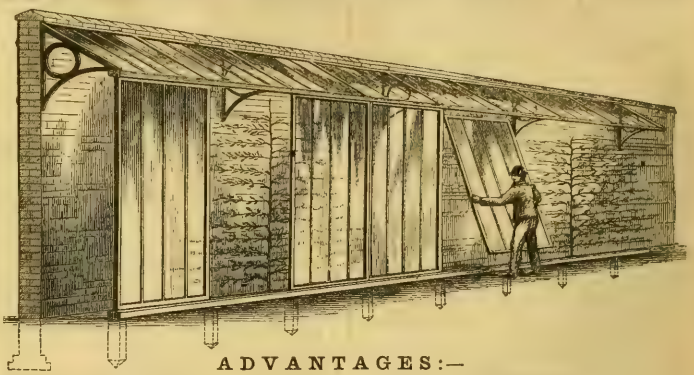
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

THE PELARGONIUM SOCIETY.—The EXHIBITION of this Society for 1879 will take place in the Garden of the Royal Horticultural Society, on JUNE 24, in conjunction with the Rose Show and Meeting of that date.

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Tooting, S.W.

Re WM. ROLLISSON and SONS.—IN LIQUIDATION. Without reserve.—On TUESDAY, October 1, at 11 o'Clock punctually, there being nearly of 800 Lots.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, on the Premises, The Nurseries, Tooting, S.W., one mile from Balham Station, the whole of the immense stock of WINTER FLOWERING HEATHS, in 32, 48, 54, and 60 pots, including 3400 Hyemalis, 13,700 graciliis, 1950 Wilmoreana, 2200 caffra, 700 melanthera, 180 grandinosa, 100 Cerinthoides, 250 mammosa, 450 scabriuscula, and 200 hybrida; 4300 EPACRIS in 48 and 54 pots; 700 ACACIA ARMATA in 48's; 7900 GENISTA FRAGRANS, 1300 BOUVARDIAS, in 48's; 3500 SOLANUMS, in 48's; 200 GREVILLEA ROBUSTA, in 48's; BORONIA MEGASTIGMA and ELATIOR PULTENIA ROSEA, AZALEAS, CAMELLIAS; 650 Maréchal Niel ROSES in 32's and 54's, a large quantity of ORNAMENTAL FOLIAGE PLANTS for Table and Conservatory Decoration, &c.

May now be viewed, and Catalogues had on the Premises; of G. WHIFFEN, Esq., the Trustee, 8, Old Jewry, E.C.; of Messrs. LEWIS, MUNNS AND LUCKEN, 8, Old Jewry, E.C.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Upper Tooting, S.W.

IMPORTANT SALE of THRIVING YOUNG NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. C. Young to SELL by AUCTION, without reserve, on the Premises, the Upper Tooting Park Nursery, Surrey, S.W., on TUESDAY and WEDNESDAY, October 8 and 9, at 11 for 12 o'Clock precisely each day, a large quantity of VALUABLE NURSERY STOCK, remarkably well-grown, and in excellent condition for removal, comprising thousands of Border Shrubs, consisting of the choicest Evergreens and Conifers, in great variety; Ornamental Trees, in fine assortment; some very well-grown Fruit Trees, Hardy Climbers. Also a quantity of STOVE and GREENHOUSE PLANTS, including large Camellias and Azaleas, Ferns, Palms, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex.

SPECIAL TRADE SALE, commencing punctually at 11 o'Clock, in consequence of the great number of lots to be offered.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION as above, on THURSDAY, October 10, at 11 o'Clock to the minute, several thousands of WINTER-BLOOMING HEATHS, remarkably well grown and full of flower-buds, including large quantities of Hyemalis, graciliis, Wilmoreana, grandinosa, Cavendishii, ventricosa, and other excellent varieties; also EPACRIS of the choicest kinds; CYCLAMEN PERSICUM, GENISTA FRAGRANS, BOUVARDIAS and GARDENIAS, of sorts; LAPAGERIAS, AZALEA INDICA, Tea-scented and other ROSES, SOLANUM CAPSICASTRUM in berry, TREE CARNATIONS, ADIANTUMS, and a quantity of miscellaneous GREENHOUSE PLANTS, remarkably strong flowering Chrysanthemums, also a few thousands of healthy young Erica hyemalis and others, and Epacris in small pots for growing on.

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Sion House, Lewisham, S.E.

CLEARANCE SALE of CHOICE STOVE and GREENHOUSE PLANTS, GREENHOUSES, HOT-WATER PIPING, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executrix to SELL by AUCTION, without reserve, on the Premises, on FRIDAY, October 11, at 11 for 12 o'Clock precisely, the whole of the valuable Collection of CHOICE STOVE and GREENHOUSE PLANTS, including some fine Specimens, and a large quantity of attractive young STOCK, together with four GREENHOUSES, a quantity of 4-inch hot-water PIPING, BRICKWORK, &c.

Full particulars will appear next week. Catalogues of the Auctioneers.

Tottenham.

IMPORTANT ANNUAL SALE of VALUABLE and WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, adjoining the Station, on TUESDAY, October 15, at 11 for 12 o'Clock precisely, by order of T. S. Ware, a large quantity of well-grown NURSERY STOCK in splendid condition for removal, comprising 400 Lombardy and other Poplars, Planes, 600 Standard Limes, stright stems; 200 double crimson Thorns; a quantity of Ornamental and Border Shrubs, including 600 Laurustinus, 2 to 3 feet; 800 Aucuba japonica, 2 to 3 feet; 1500 common and other Hollies, 600 Rhododendron ponticum, and a fine assortment of Evergreens and Coniferæ; 1200 clean-grown Standard, Dwarf-trained and Pyramid Fruit Trees; 2500 Standard and Half-Standard Roses; quantities of climbing Plants in variety; 500 double Pæony officinatis; 2000 Pinks; Helleborus niger, Miscellaneous Bulbs, Autumn and Spring flowering Perennials, and other useful Stock.

On view one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Potter's Bar, Middlesex.

To FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

A Valuable FREEHOLD PROPERTY, comprising the Holly Bank Nursery, Potter's Bar, about 1 mile from the Railway Station. It contains 3 acres, and the buildings comprise a capital Dwelling-house, Two Cottages, Stabling, Sheds, and Eighteen Greenhouses, including Vineries, Peach-houses, Cucumber and Melon-houses, &c., varying in length from 40 feet to 200 feet, the whole having been arranged and planted within the last few years by Mr. Munro, the well-known Fruit-grower. Immediate Possession.

MESSRS. WILKINSON AND HORNE are instructed to SELL by AUCTION, at the Mart, on FRIDAY, October 11, at 12 for 1 o'Clock, by order of the Trustees of the Estate of John Munro, the above very valuable FREEHOLD PROPERTY.

Particulars may be had of Messrs. WENHAM, ANGUS AND CO., Accountants, 43, Finsbury Circus, E.C.; of F. CAPE, Esq., Accountant, 61, Cheapside, E.C.; of J. E. COXWELL, Esq., Solicitor, 6, Martin's Lane, Cannon Street, E.C.; and of the Auctioneers, 7, Poultry, London, E.C.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Stations on the South-Western Railway.

IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey, to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

Preliminary Notice of

FORTHCOMING SALES by PROTHEROE AND MORRIS, HORTICULTURAL VALUERS AND AUCTIONEERS.

EVERY MONDAY.—Sales of first-class Dutch Bulbs, at the Auction Mart, Tokenhouse Yard, City, E.C.

OCTOBER 16 and 17.—The NURSERY, Brixton. By order of Messrs. Ponsford & Son. General Nursery Stock, Greenhouse Plants and Orchids.

OCTOBER 17.—The NURSERY, Church End, Finchley, N. By order of W. Whiteley, Esq. Clearance Sale of General Nursery Stock.

OCTOBER 18.—BARROWFIELD NURSERY, Lower Edmonton. By order of Mr. C. Adams. General Nursery Stock.

OCTOBER 21 to 25.—HARE HILL NURSERY, Addlestone, Surrey. Five days' Sale of Nursery Stock. By order of Mr. A. Gray.

OCTOBER 28 and 29.—EXOTIC NURSERY, Tooting. By order of Mr. R. Parker. Annual Sale of General Nursery Stock.

OCTOBER 31.—The NURSERY, West Wickham. By order of Mr. Kirkcaldy. General Nursery Stock.

Date not yet fixed.—SALE NURSERIES, Loughton. Six days' Sale of Nursery Stock. By order of Messrs. William Paul & Son.

Date not yet fixed.—OXTON HILL NURSERY, Birkenhead. By order of Mr. W. Henderson. Two days' Sale of General Nursery Stock.

NOVEMBER 5, 6, 7, and 8.—AMERICAN NURSERIES, Leytonstone. Two days' Sale of Nursery Stock. Also two days' Sale at the NURSERIES, Wanstead.

Catalogues may be obtained of the above, when ready, at the Auctioneers' Offices, 98, Gracechurch Street, E.C., and Leytonstone, E.

Gentlemen desirous of Purchasing Nursery Stock this season can, by sending their names and addresses to Messrs. P. & M., have Catalogues forwarded from time to time.

N.B.—The NEXT SALES of Properties take place at the Auction Mart on WEDNESDAY, October 30; also on MONDAY, November 11.

PRELIMINARY NOTICE.—A most important SALE of CHOICE and VALUABLE NURSERY STOCK, to take place about the MIDDLE of OCTOBER, of which due Notice will be given.

The Royal Nurseries, Merriott, Somerset.

TO BE LET, and may be entered upon at Ladyday next or before if required, a good COTTAGE, with Vinery and Cucumber-house, and good Garden, suitable for a Jobbing Gardener. Also a good Seed and Plant Business. For further particulars apply to

Mrs. M. BONSER, Clipstone.

To Market Gardeners and Nurserymen.

TO BE LET, from Michaelmas next, a NURSERY, of 3½ acres in extent, on the Reigate and Sutton Turnpike Road. Ground rent £14 per annum. Planted with Shrubs, Fruit Trees, and Market Garden Produce. For further particulars address,

F., Mr. Allingham, Market Place, Reigate.

NEW GIANT FRENCH ANEMONES.—Superior to the Dutch varieties, producing an abundance of brilliant flowers of immense size.

NEW GIANT FRENCH ANEMONES.—Finest mixed double, 6*d.* per dozen, 40*s.* per 100; finest mixed single, 1*s.* 6*d.* per dozen, 10*s.* per 100.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Gloire de Nantes" (blue-violet), 4*d.* each, 3*s.* per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "La Brillante" (bright crimson-red), 6*d.* each, 5*s.* per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Mauve Clair" (beautiful pale mauve), 6*d.* each, 5*s.* per dozen.

Prices and full particulars of other Flower Roots, post-free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18*s.*, 24*s.*, and 30*s.*

BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

To the Trade.

SEEDLING LARCH, extra fine, 1-yr. and 2-yr.

SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr.

The above are offered in quantity, and are especially fine.

LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

To the Trade.

RICHMOND and MORTLAKE NURSERIES, SURREY. Established 1802.

G. AND W. STEELL, of the above Nurseries, most respectfully invite the Trade to inspect their Stock, which they will find very extensive and uncommonly fine this season, and in excellent condition for moving. Early orders are respectfully solicited.

To Gentlemen, Contractors, and Others.

G. AND W. STEELL also solicit the attention of all those who are making large plantations, and beg to inform them that they will feel great pleasure in giving special prices to large buyers, which they can quote extremely low, having a very large Stock on hand.

SURPLUS STOCK of INDIAN AZALEAS.

Bushy plants, 10 to 12 inches, without flower-buds, 9*s.* per doz.
Good flowering plants, 15*s.* per dozen.
Good flowering plants, extra large, 24*s.* per dozen.
In twelve good varieties. Descriptive LIST on application.
Also could spare about 2000 DAPHNE INDICA RUBRA, healthy plants, 9 to 18 inches, 9*s.* to 18*s.* per dozen.
ISAAC DAVIES, Nurseryman, Ormskirk.

T. J. HICKES' POTTERY at Shepton Mallet Flower Show.—The First Prize for Fuchsias, and Second for Roses, were awarded for plants grown in our pots.
The Pottery (the Works are little more than twelve months old) is already famed for growing healthy plants.
T. J. HICKES, The Garden Pottery, Old Down, Shepton Mallet.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.
Highgate, London, N., and Barnet, Herts.

For Immediate Disposal.

SPECIMEN STOVE and GREENHOUSE PLANTS.

WM. MILES has for disposal some splendid Specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Tree and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to
WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

STRAWBERRY PLANTS.—Moffat's Duke of Edinburgh, fine strong plants at 7*s.* 6*d.* per 100. Trade supplied on moderate terms.
Awarded special prize at Edinburgh, July, 1878.
GEORGE SINCLAIR, Phantassie Orchard, Prestonkirk, N.B.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narciss, 10*s.* per bushel, 6*s.* per half-bushel, 3*s.* 6*d.* per peck. Likewise Bulbs of LILIUM BULBIFERUM, 15*s.* per 100, 2*s.* 6*d.* per dozen. Terms cash with order. Package free. Post-office Orders payable at Vauxhall Cross.
Mrs. ALDERSON, Langley Lane, South Lambeth, Surrey.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

Miles' New Hybrid Spiral Mignonette.

EXTRA SELECTED from the ORIGINAL STOCK.

WM. MILES has to offer new SEED of the above splendid variety, carefully saved from the finest spikes, at 1*s.* per packet. The usual allowance to the Trade.
The West Brighton Nurseries, Cliftonville, Sussex.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow and reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

CLEMATIS.—Jackmanni, rubra violacea, Miss Bateman, Lucy Lemoine, Gem, and others, very strong, 50*s.* per 100, £20 per 1000.
RICHARD MASON,
Windlesham Nursery, Bagshot, Surrey.

Cabbage Plants—Cabbage Plants.

W. VIRGO, Wonersh Nursery, Guildford, can now supply in any quantity the following good, strong, healthy, autumn grown PLANTS:—Early Battersea, Early Enfield Market, Early Dwarf Nonpariel, and Robinson's Drumhead, at 3*s.* per 1000; Red Pickling, 5*s.* per 1000.
Reference required from unknown correspondents.

EUONYMUS JAPONICUS, 12 to 15 inches, 25*s.* per 100, £10 per 1000.
" " MEDIO PICTA, 9 to 12 inches, in pots, 35*s.* per 100.
" " AUREA MARGINATA, 9 to 12 inches, 35*s.* per 100, £12 per 1000.
" " DUC D'ANJOU, 9 to 15 inches, 35*s.* per 100.
" " MACROPHYLLA, 6 inches, 30*s.* per 100.
" " MICROPHYLLA, 6 inches, 25*s.* per 100.
IVIES, named varieties, in pots, 30*s.* per 100.
STANSFIELD BROTHERS, Southport.

SPECIAL OFFER.—Manetti Stocks, good, 18*s.* per 1000. Standard Roses, 80*s.* per 100, Dwarf on Manetti, 40*s.* per 100. Acer Negundo variegata, dwarf maidens, 30*s.* per 100; nice feathered do., pyramids, 12*s.* per dozen, 75*s.* per 100; standards, 9*s.* to 18*s.* per dozen. Platanus occidentalis, 2 to 2½ feet, 50*s.* per 1000; 2½ to 3 feet, 70*s.* per 100; 3 to 4 feet, 20*s.* per 100; 4 to 5 feet, 30*s.*; 5 to 6 feet, 40*s.*; 7 to 8 feet, 60*s.*; 8 to 9 feet, 80*s.*; 10 to 12 feet, 18*s.* to 24*s.* per dozen. Gooseberries, strong Crown Bobs, 12*s.* 6*d.* per 100. Black Currants, 8*s.* per 100, 75*s.* per 1000. Spiræa japonica, fine, 15*s.* per 100.
EDMUND BLYTON, The Nurseries, Woodhall Spa, Horncastle.

NEW AND RARE LILIES.

LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. 7s. 6d.
LILIUM COLUMBIANUM, extremely rare, 7s. 6d.
LILIUM BATEMANÆ, quite new, 7s. 6d.
LILIUM JAPONICUM KRAMERI, 5s.
Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30s., 42s. and 60s. per dozen.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

GEORGE COOPER, The County Seed Establishment, Hertford, begs to announce that he has received his annual importation of FLOWERING ROOTS, and that his Illustrated and Descriptive CATALOGUE is now ready, and may be had post-free on application. The best sorts in every kind from the most careful growers.
SEEDS for the Garden and Farm, for Autumn Sowing
For early forcing—Early White Roman HYACINTHS, SPIRÆA JAPONICA and PALMATA, LILY OF THE VALLEY. The best value given.

FERNS, PALMS, DRACÆNAS, &c.—Having a large surplus stock of the following, we can offer them unusually cheap, to make room.
DRACÆNAS.—Congesta, terminalis, stricta, and Guilfoylei, in 3 and 6-inch pots. Also a few fine specimens of amabilis in 10-inch pots.
PALMS.—Latania borbonica, 15 inches, in 6-inch pots.
FERNS.—Adiantum cuneatum, Lomaria gibba, extra strong; Pteris tremula, cretica, cretica albo-lineata; Cyrtomium falcatum, in 3 and 6-inch pots. Also specimens of cuneatum.
Price per dozen, 100, or 1000 on application. Samples of Six varieties of mixed FERNS, in 3-inch pots, 3s. 6d. per dozen,
PELARGONIUMS in eight leading Market varieties, well established in 3-inch pots, 6s. per dozen. Price per 100 or 1000 on application.
CROTON PICTA VARIEGATA, in 6-inch pots. Cuttings of HYDRANGEA JAPONICA, very strong, 5s. per 100.
POUNCE AND SONS, F.R.H.S., Nurserymen, Hendon, Middlesex, N.W.

To the Trade.

C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices:—
100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.
100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
1000 SPIRÆA JAPONICA, colossal clumps, at £6.
A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

CHOICE ORCHIDS.—Many thousands of good plants to select from. Mr. WILLIAM BULL is constantly receiving large importations from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago, and can offer many of the rarest and most beautiful kinds at extremely low prices. Customers can choose their plants from eleven large houses full of Orchids. An inspection is invited.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

STRONG CLUMPS for FORCING.

	p. 100	p. 1000	p. 10,000
DIELYTRA SPECTABILIS ..	£1 5	£10 17	...
HOTEIA (Spiræa) JAPONICA	0 14	5 17	£56
SPIRÆA PALMATA	4 4	37 10	..

Orders to the amount of £2 free throughout Great Britain.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Notice to the Trade.

W. G. CALDWELL AND SONS are now sending out their well-known AZALEA AMŒNA CALDWELLI, strong plants, 18s. per dozen; larger size, 24s.
Also splendid plants of GLEICHENIA DICHOTOMA, at 3s. 6d. and 5s. each, 36s. and 50s. per dozen.
The Nurseries, Knutsford, Cheshire.

TO LARGE PLANTERS,
CEMETERY CONTRACTORS, &c.
YEWS, English, 2 to 3, 3 to 4, and 4 to 5 feet.
LAURELS, common, 2, 2 to 3, 3 to 4, and 4 to 5 feet.
LIMES, fine grown, 3 to 4, 5 to 6, and 8 to 10 feet.
CHESTNUT, Horse, 8 to 10 feet.
Special quotations on application, and sample dozen sent to any part of Great Britain.
GODWIN AND SON, Ashbourne, Derby.

HEATHERSIDE NURSERIES, near Bagshot.
The large and varied stock of CONIFERS, Hardy EVERGREEN and FLOWERING SHRUBS, Pyramid FRUIT TREES, FOREST and ORNAMENTAL TREES and SHRUBS, Hardy CLEMATIS and IVIES in pots, now offered at very moderate and tempting prices. Priced CATALOGUES sent post-free on application, to
HENRY SHEPHERD, Heatherside Nurseries, Bagshot, Surrey.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
,, PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS,
Booked for autumn, 12s. per dozen, 75s. per 100.
CHARLES NOBLE, Bagshot.



WEBB'S
CHOICE COLLECTIONS
OF
HYACINTHS,
CROCUS, TULIPS, LILIES, &c.



Contain a
SUPERB ASSORTMENT
of the
BEST VARIETIES.

FOR
Growing in Vases, Glasses, Pots, &c.
10s. 6d., 21s., 42s., and 63s. each.

FOR
Outdoor Cultivation.
10s. 6d., 12s. 6d., 21s., and 42s. each.

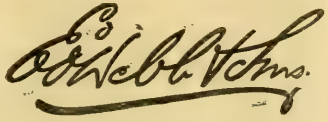
FOR
Greenhouse or Window Boxes.
10s. 6d., 12s. 6d., 21s., and 42s. each.

Five per Cent. Discount for Cash.
ORDERS OF 26s. VALUE CARRIAGE FREE.

FOR FULL PARTICULARS SEE

WEBB'S
AUTUMN CATALOGUE
OF
DUTCH FLOWER ROOTS,
&c.,

Which is profusely Illustrated, and contains original and complete Instructions for the successful Cultivation of
HYACINTHS, CROCUS, TULIPS,
NARCISSUS, LILIES, &c.
GRATIS AND POST-FREE ON APPLICATION.



THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE.

HENRY WALTON, Edge End Nursery, Brierfield, near Burnley, Lancashire, begs to offer the undermentioned, in good strong plants, at the following cheap rates:—
12 CAMELLIAS, very choice English-grown, 21s. to 42s.
12 AZALEAS, very choice English-grown, 18s. to 36s.
12 FLOWERING STOVE PLANTS, very choice, 12s. to 18s.
12 ORNAMENTAL STOVE PLANTS, very choice, 12s. to 18s.
12 GREENHOUSE PLANTS, very choice, 12s. to 18s.
12 EXOTIC FERNS, very choice, 12s. to 18s.
12 EPACRIS or ERICAS, for winter blooming, very choice, 12s. to 18s.
12 TEA and NOISETTE ROSES, on own roots, 12s. to 18s.
12 H.P. ROSES, on own roots, new sorts, 1876 and 1877, 12s. to 18s.
12 BOUVARDIAS, fine plants, just coming into flower, 12s. to 18s.
12 CHRYSANTHEMUMS, strong blooming plants, 9s.
12 CINERARIAS, fine named sorts, fit to pot on, 6s.
Half of any of the above sorts may be taken.
All of the above are H. W.'s selection.
H. W. also begs to offer the following New Plants, all free by post:—
COLEUS, splendid new sorts, including Kentish Fire, Lord Falmouth, George Bunyard, Exquisite, Fascination, Royalty, Novelty, Garnet, and Favourite, 1s. each, the set for 8s.
GERANIUMS, Zonal, New Life and Salmon Vesuvius, 1s. each.
,, Zonal, Dr. Denny and White Vesuvius, 1s. 6d. each.
,, Zonal, twelve of Pearson's new set for 1878, 1s. each.
,, Zonal, six of Williams' new set for 1878, 1s. each.
H. W. is at present sending out a Basket, containing twelve choice WINTER BLOOMING PLANTS, composed of Camellias, Azaleas, Bouvardias, Epacris and Ericas, all warranted to bloom, for 21s.
A fine lot of three-year-old well ripened FRUITING VINES, will fruit well next season. Prices on application.
P. O. O. payable at Brierfield. CATALOGUES on application.

Pinks—Pinks—Pinks.

WOOD AND INGRAM have a large Collection of the best Exhibition Varieties in strong, well-rooted plants. This is the best season for planting.
Price 4s. per dozen.
For Names and Descriptions see their new CATALOGUE of imported and other Bulbs, Carnations, Picotees, &c., which is now ready, and will be forwarded free on application.
The Nurseries, Huntingdon.

THIRTY THOUSAND CAMELLIAS, alba plena and other best sorts, all home-grown, well set with bud and very forward. Also many thousand AZALEA INDICA, best sorts, well set for bloom; and hard-wooded HEATHS, half and quarter specimens, fine healthy and well-formed plants. For price and particulars, see *Gardeners' Chronicle* of September 21, 1878.
B. WHITHAM, The Nurseries, Reddish, near Stockport, has the above unequalled collection on Sale.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

CAMELLIA ALBA PLENA, with buds, £8 per 100.
,, many varieties, with buds, £9 per 100.
,, alba plena and other varieties, without buds, £4 15s. per 100.
,, Admiral Campbell, with buds, £4 per 100.
,, ,, without buds, £2 15s. per 100.
AZALEA INDICA, with buds, many fine varieties, £7 per 100; very strong, £4 per 100.
All plants are well formed, healthy and bushy. Package low. Carriage free to Hamburg. Three months' credit against good references.
C. W. MIETZSCH, 36, Berg Strasse, Dresden, Germany.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 9s. per dozen.
POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz.; smaller plants, 6s. per doz.
BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.
ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.
PRIMULA, ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 9s. and 10s. per dozen.
ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s per dozen, £4 per 100; smaller plants, in 2½-inch pots per 100.
MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen—offered to make room for smaller stuff.
PTERIS SCABERULA, good plants, 12s. per dozen.
ADIANTUM FARLEYENSE, 1000 fine plants, in 4-inch pots, 24s. per dozen; ditto, in 3-inch, 18s. per dozen.
PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.
CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.
GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.
CYCLAMEN PERSICUM, fine strain, 12s. per dozen.
GENISTAS, splendid stuff, 5½ inch pots, 50s. per 100; ditto, in 4-inch pots, 30s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

Vines—Vines—Vines.

W. G. CALDWELL AND SONS beg to inform their Friends and Customers that their stock of the above is unusually fine this season. Samples have been exhibited at various Shows in the North of England, and they have been highly commended for their excellent quality.
Orders are now being booked from the following varieties:—

Black Hamburgh	Foster's Seedling
Black Alicante	Lady Downe's
Buckland Sweetwater	Madresfield Court
Duke of Buccleuch	Muscat of Alexandria.

Strong Planting Canes, 5s. to 7s. 6d. each.
Extra Fruiting Canes, 7s. 6d. to 10s. 6d. each.
The Nurseries, Knutsford, Cheshire.

AMERICAN BULBS and PLANTS.

American-grown double Tuberose Bulbs delivered in lots of 1000 and over, free of cost for freight and packing, in Liverpool, at the lowest market rates.

All the finest native species of American FERNS, ORCHIDS, AQUATICS, FLOWERING PLANTS, FRUITS, SEEDLINGS, &c., collected and carefully packed for transmission abroad.

We take pleasure in referring to the leading florists in England and the Continent, with whom we have had business relations.

Priced LISTS furnished free to all applicants.

HOOPES, BRO. & THOMAS,
CHERRY HILL NURSERIES, WEST CHESTER, PA., U.S.A.

DUTCH FLOWER ROOTS,
CARRIAGE FREE.

DANIELS BROTHERS'
SELECT
LIST FOR AUTUMN, 1878.

We annually visit the Dutch Bulb Farms, and our selection of choice FLOWER ROOTS will be found unique for size and quality of Bulb, and excellence of variety.

	Per dozen.—*s. d.*
HYACINTHS, superb exhibition varieties	12*s.* to 18 0
,, choice named varieties, for pots or glasses	9 0
,, good	6 0
,, mixed, red, white, or blue	3 0
,, miniature, with names	3 6
,, white Roman, for forcing	3 0
CROCUS, large Dutch, blue, white, striped, or yellow,	each, per 100 2 0
,, superb named varieties, blue, purple, pure white, golden-yellow, pencilled, &c.	each, per 100 3 6
,, choice mixed, all colours	1 4
SNOWDROPS, large single	per 100 2 6
,, large double	per 100 2 9
TULIPS, Van Thol, scarlet	1 6
,, Pottebakker, white	1 6
,, Tournesol, double	1 6
,, Rex Rubrorum, double	1 9
,, La Candeur, double	1 3
,, choice mixed, double	per 100, 5*s.* 6*d.* 0 9
,, choice mixed, single	per 100, 5*s.* 6*d.* 0 9
ANEMONES, splendid double varieties, named, in ten choice sorts	per 100 10 6
,, double scarlet, fine	per 100 7 6
,, double, finest mixed	per 100 4 0
,, single, finest mixed	per 100 4 0
LILY OF THE VALLEY, strong clumps for forcing,	each, 1*s.* 10 6
POLYANTHUS NARCISSUS, choice mixed	2 0
SCILLA AMŒNA, beautiful blue dwarf	1 0
JONQUILS, single, sweet scented	100, 5*s.* 6*d.* 0 9
LILIUM AURATUM	each, 1*s.* 10 6
,, CANDIDUM, the old pure white	4 6
,, choice named varieties	6*s.*, 9*s.* and 12 0

All Orders of 10s. and upwards carriage free.

OUR GUINEA COLLECTION

Of choice FLOWER ROOTS for Open Ground, &c., contains the following liberal assortment :—

25 Hyacinths, choice mixed	100 Snowdrops
18 Polyanthus Narcissus, mixed	12 Tulips, Van Thol, scarlet
12 Narcissus Poeticus	12 ,, Cottage Maid
12 ,, double white	12 ,, Yellow Prince
6 Campernelle Jonquils	25 ,, double, mixed
25 Anemones, fine, double	12 ,, Rex Rubrorum
25 ,, fine, single	12 late, mixed
50 Persian Ranunculi, mixed	4 Scilla amœna
50 Turban Ranunculi, in four varieties	4 Lilies, of sorts
	12 Spanish Iris
	12 Primroses, beautiful varieties, mixed
150 Crocus, in six varieties	

With full cultural directions. Double quantity, 40*s.* ; half ditto, 12*s.* 6*d.* ; quarter ditto, 6*s.* 6*d.*

Illustrated CATALOGUE Free on application.

DANIELS BROTHERS,
THE ROYAL NORFOLK SEED ESTABLISHMENT,
NORWICH.

APPLE—WHITE MELROSE.

"A valuable and fine looking Apple, first-rate quality, suitable either for culinary or dessert purposes. In use from October to January."—*Vide* Hogg's *Fruit Manual*, Fourth Edition.

ORMISTON AND RENWICK beg to announce that they will send out (first time), in November, the above celebrated Apple. Price 10*s. 6d.*

The Stock being limited, early Orders (which will be forwarded according to priority of receipt) are respectfully solicited. The Nurseries, Melrose, N.B.

BULBS AT GROWERS' PRICES.

TULIPS, fine, mixed, single early, 5*s.* per 100.

HYACINTHS, fine, mixed, double, 18*s.* per 100, 2*s. 6d.* per dozen.

CROCUS, fine, mixed, 7*s. 6d.* p. 1000, 1*s.* p. 100.

If over 10s. value packing and carriage free.

C. R. FREEMAN,
ECONOMIC SEEDSMAN, NORWICH.

BROCKWORTH PARK PEAR.

The fruit of this remarkable Pear is very large and handsome, the flesh is juicy, melting, and of fine flavour, ripening about the end of September or beginning of October. The colour is yellow, richly dotted, slightly crimson next the sun. It has been awarded a First-class Certificate of Merit by the Royal Horticultural Society.

Fine Pyramids .. .. .. 2*s. 6d. each.*
Dwarf-trained (for walls) .. 3*s. 6d. each.*

We can supply one dozen choice Pyramid Pear Trees of the most delicious sorts, our selection, including Brockwork Park, for 18*s.*

J. C. WHEELER & SON,
KINGSHOLM NURSERY, GLOUCESTER.

B. S. WILLIAMS'
NEW AND CHOICE
CYCLAMEN SEED
FOR IMMEDIATE SOWING.



CYCLAMEN PERSICUM, Williams' Superb Strain, per packet, 5*s.*, 3*s. 6d.*, 2*s. 6d.*, and 1*s. 6d.*

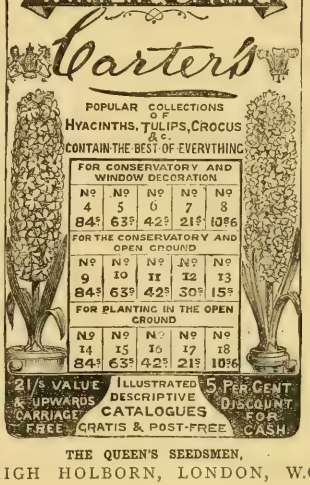
From Mr. G. BONE, *Gardener, Hingham, January* 2, 1878.
"Sir,—The Cyclamen seed supplied by you have turned out splendid. They have been admired by all that have seen them."

CYCLAMEN PERSICUM GIGANTEUM.—The flowers of this splendid new giant variety measure from 2 to 2½ inches in length, colour pure white, with a fine bold violet-purple eye. Per packet, 5*s.* and 2*s. 6d.*

New Plant and Bulb Catalogues
Now ready, post-free.

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

DUTCH BULBS
AT
GROWERS' PRICES.



THE QUEEN'S SEEDSMEN,
HIGH HOLBORN, LONDON, W.C.



WM. PAUL & SON,
(Successors to the late A. Paul & Son, Established 1806.)



ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
HERTS.
Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.
Priced Descriptive Catalogues free by post.

GEO. JACKMAN & SON,
(ESTABLISHED 1810,)



Cultivators of
FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

SIMPLY AN ANNOUNCEMENT.

BULBS.—BULBS.

H. CANNELL (F.R.H.S.) begs to announce that his LIST of the above is ready, and the fact of his having tested the whole family of Dutch Bulbs, and devoting two 100-feet houses last season entirely to their culture, enables him to offer the briefest, best, and cheapest List of Hyacinths and Tulips ever sent out, and the same with Bedding and Forcing kinds. These, together with his Stock (largest in England) of Winter and Spring Bedding Plants, offer unusual advantages to purchasers to attain success. Sent post-free.
Home for Flowers, Swanley, Kent.

Strawberries.

FROM the fact of my being located in the midst of hundreds of acres of all the best and most profitable kinds I am enabled to offer unusually fine Plants, and perfectly true to name. All those who wish to grow for gain should have the Kentish well-known varieties. Having them from a distance, together with change of soil, is the very secret of success.
CATALOGUE with valuable information post-free.
H. CANNELL, Swanley, Kent.

GOOD THINGS.

NEW COLEUS, totally distinct from all others ever yet sent out, and will add an additional charm to every Greenhouse. Their many colours are very vivid and attractive.
G. BUNYARD,
KENTISH FIRE,
LORD FALMOUTH.
Post-free, 1*s.* each ; the three for 2*s. 6d.*

THE FINEST NEW ZONALS OF THE SEASON.—WHITE VESUVIUS, by far the best white for winter, 2*s.* each, 18*s.* per dozen.
SALMON ditto, splendid both winter and summer, 1*s. 6d.* each, 12*s.* per dozen.
STRIPED ditto (New Life), the most saleable all the year, always in bloom, 1*s. 6d.* each, 12*s.* per dozen.
DR. J. DENNY, positively blue, 2*s.* each, 18*s.* per dozen.
GUINEA, splendid colour, totally eclipsing Jealousy, decidedly yellow ; this and Dr. Denny, grand pot plants both summer and winter, 4*s.* each.
Good plants of all the above, five for 10*s.*, package free ; Cuttings half price, post-free.

H. CANNELL'S named Collection of CINERARIAS now just ready for shifting into 5-inch pots (see Guide) : will send twelve splendid kinds for 7*s.* This would add a superior feature to any conservatory throughout the spring.

The Finest Winter-blooming Zonal Pelargoniums in CULTIVATION.

H. CANNELL will send the best twenty-four varieties in cultivation for 18*s.*, twelve for 10*s.*, package free. They should be potted-up at once to give a blaze of bloom for Christmas. Cuttings at half above price, post free.

WINTER-FLOWERING TROPÆOLUMS.—Perhaps there is nothing so cheap to purchase and to grow and to give such an abundance of flowers all the winter as the above six best for 4*s.* ; small, by post, 3*s. 6d.*, free.

H. CANNELL has now a great quantity of the following in fine condition, which will be sure to give satisfaction :—PRIMULAS, CINERARIAS, and CALCEOLARIAS, 2*s.* per dozen ; CYCLAMEN, 3*s.*, 4*s.*, and 5*s.* per dozen. Splendid Bulbs, showing flower. All post-free Fine Plants of each of the above in pots, 1*s.* per dozen extra.

H. CANNELL, F.R.H.S.,
Home for Flowers,
SWANLEY, KENT.

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9-inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

CRANSTON & CO.,
NURSERIES, KING'S ACRE, HEREFORD.

CUCUMBER—EMPRESS of INDIA.

J. C. WHEELER & SON

Introduced this fine variety last spring. It has proved itself to be one of the best flavoured and handsomest in cultivation, and good for winter work.

Price 2s. 6d. per packet.

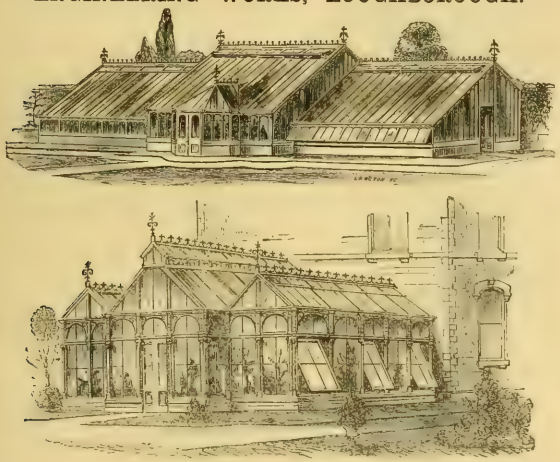
J. C. WHEELER & SON,
SEED GROWERS, GLOUCESTER.

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.

Descriptive and Priced Catalogues for 1878 now ready.

Address— **CRANSTON & CO.,**
KING'S ACRE, near HEREFORD.

MESSENGER & COMPANY,
MIDLAND HORTICULTURAL BUILDING & HOT-WATER
ENGINEERING WORKS, LOUGHBOROUGH.



Horticultural Buildings erected on Messenger & Co.'s Patent Method of Construction are very strong, *most durable, light, elegant, amply ventilated, perfect efficiency* for intended purpose is *guaranteed*, are economical *in cost and maintenance;* combine the peculiar advantages of Wooden and of Iron Houses, without their disadvantages.

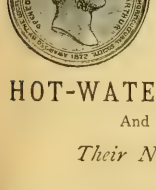
MESSENGER AND CO., from their long experience, and having large Works exclusively devoted to the Construction and Heating of Horticultural Buildings, are in a position to execute with despatch, in the best manner, the Orders with which they are entrusted. Only thoroughly well seasoned timber used.

The Plans of Landscape Gardeners, Architects, and Others carried out.

Plans and Estimates forwarded free on receipt of Particulars by Post. Estimates sent free of charge. Ladies and Gentlemen waited upon.

Illustrated CATALOGUES of GREENHOUSES, VINERIES, HEATING APPARATUS, &c., sent free on application. Richly Illustrated CATALOGUE of HORTICULTURAL BUILDINGS and HEATING APPARATUS (the Designs taken from Works executed by M. & Co.), post-free for thirty-three stamps. Gentlemen consulting this Catalogue have the advantage of inspecting designs whose efficiency has been tested by actual experience.

THE THAMES BANK IRON COMPANY



OLD BARGE WHARF,
UPPER GROUND STREET,
LONDON, S.E.,

Have the largest and most complete stock in the Trade; upwards of £20,000 worth to choose from.



HOT-WATER BOILERS, PIPES, and CONNECTIONS,
And all CASTINGS for HORTICULTURAL PURPOSES.

Their New Illustrated Catalogue, 8th Edition, now ready
(price Sixpence).

Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

SUTTON'S PRIZE CYCLAMEN,
GIGANTEUM ROSEUM SUPERBUM.

This very large and beautiful variety was awarded a First-class Certificate by the Royal Horticultural Society. The bulbs are in the finest possible condition for flowering.

Fine bulbs 5s. and 7s. 6d. each.

GIGANTEUM ROSEUM—Sutton's New Variety of 1877.

Fine bulbs 3s. 6d. and 5s. each.

Persicum album, pure white, 1s. 6d to 2s. 6d. each.
Persicum marginatum, rosy white with red base, 1s. 6d. to 2s. 6d. each.
Persicum roseum, rose with carmine base, 1s. 6d. to 2s. 6d. each.
Persicum rubrum, bright crimson, 1s. 6d. to 2s. 6d. each.
Persicum purpureum, purple, 1s. 6d. to 2s. 6d. each.
Persicum roseum album, white with red base, 1s. 6d. to 2s. 6d. each.

N. B. — Cyclamen bulbs can be sent, free by post, for an extra 3d. on the price of each bulb.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

WILLIAM POTTEN can now supply:—
EUCHARIS AMAZONICA, strong, in 32's, 1s.
DRACÆNA COOPERI, strong, in 48's, 1s. 6d.
GESNERA EXONIENSIS, in 60's, 1s.
" ZEBRINA, in 60's, 1s.
ECHEVERIA SECUNDA GLAUCA, 1s. per dozen, 7s. 6d. per 100.
STRAWBERRY, "President," from single pots, strong, 5s. per 100.
GERANIUMS, Zonal, twelve vars., good, 2s. post-free.
" twelve very select, 5s. post-free.
CYCLAMEN PERSICUM, mixed, good plants, 4s. per dozen, post-free.
PHLOXES, twelve vars., good, 4s., post-free.
PRIMULAS, choice mixed, 2s. per dozen, post-free.
W. POTTEN'S CATALOGUE of ROSES, FRUIT TREES, BULBS, &c., will be sent free to all applicants.
Camden Nursery, Sissinghurst, Staplehurst, Kent.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5s. 6d.; 5 bags, 25s.; 12 bags, 50s.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

PEAT, Brown Fibrous, superior quality for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16s. per ton, or £4 10s. per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.
Mr. W. TARRY, Bailiff, Bagshot, Surrey.

PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Christchurch, Hants.—Brown, Fibrous, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turves and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s.; five bags, 21s.; 12 bags, 40s. Some also, of good quality, at 13s. 6d. per four tons and upwards.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3d. per bushel, 100 bushels (33 bags) 20s Truck-load (loose) 30s., put free on rail; 7s. for One-horse Van-load, if fetched from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

COCOA-NUT FIBRE REFUSE.—Reduced Price:—In 4 bushel bags, bags included, at 1s., or truckload of about 250 bushels, 25s. (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 5s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists. Strongly recommended in the *Gardener*, and by many first-class Gardeners. Has an established reputation for efficacy.
Prepared by JOHN KILNER, Wortley, near Sheffield.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water; and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 2s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

RUSSIA MATS, RUSSIA MATS, from 30s. to 70s. per 100; ARCHANGELS, 110s. to 120s., good for packing, from 20s. RAFFIA for Tying. GUNNY BAGS, &c. Delivered to any station in London on receipt of cash.
SUTHERLAND, SON AND CO., 11, Fenchurch Buildings, Fenchurch Street, London, E.C.

WHOLESALE RUSSIA MAT MERCHANTS.
NEW ARCHANGEL MATS.
ST PETERSBURG MATS.
RAFFIA FIBRE, NETTING, CANVAS, &c
MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

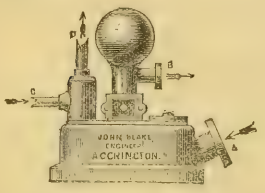
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on October 12.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wrucham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July* 16, 1878.

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug.* 22, 1878.

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq., *Emmott Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.



PINE-APPLE NURSERY, MAIDA VALE, LONDON, W.

E. G. HENDERSON & SON

Beg to announce that they have still a few extra fine roots of the *rose-coloured variety* of the large, hardy, WHITE WATER LILY to dispose of. It is the Nymphæa alba var. rosea of Hartmann (*Journal of Botany*, 1872, p. 329). "Differs from the well-known White Water Lily only in its beautiful rose-coloured flowers."

Price on application.

Special Offer of large quantities of the following, in strong plants:—

48-size pots.

EPACRIS, choice variety, 12*s.* and 18*s.* per doz.

ACACIA DRUMMONDII and others, 18*s.* to 30*s.* per dozen.

BOUVARDIAS, in sorts, 18*s.* per dozen.

EPIPHYLLUM TRUNCATUM, fine collection, 21*s.* and 30*s.* per dozen.

TREE CARNATIONS, 18*s.*, 24*s.*, and 30*s.* per dozen.

ERICAS, hard and soft-wooded, 12*s.* and 18*s.* per dozen.

GREENHOUSE PLANTS in variety, such as ERIOSTEMONS, BORONIAS, APHELEXIS, NERIUMS, LEUCOPOGONS, HOVEAS, GREVILLEAS, DIOSMA, CORREAS, CHOROZEMAS, BRACHYSEMAS, TREMANDRAS, PIMELEAS, &c., 100*s.* and 150*s.* per 100.

N.B.—The usual Discount to the Trade.

E. G. HENDERSON & SON'S New Illustrated Bulb CATALOGUE is now ready.

JEAN VERSCHAFFELT'S NURSERIES

(*THE OLDEST FIRM IN GHENT*).

CAMELLIAS.—AZALEA INDICA.

The Stock of these is immense this Season, and in the finest health and condition.

The Prices are as low as possible for a really good article, viz.:—

CAMELLIAS, with buds, fine healthy plants, 1 to 1½ foot high, £7 per 100.
CAMELLIAS, with buds, larger and better, £10 to £12 per 100.
CAMELLIAS, extra sized plants, 5*s.*, 10*s.* to 20*s.* each and upwards.

AZALEA INDICA, fine stuff, £5 per 100.
AZALEA INDICA, larger plants, £6, £8, £10 to £12 per 100 and upwards.
AZALEA INDICA, extra size, 5*s.*, 10*s.* to 20*s.* each and upwards.

NONE BUT REALLY FIRST-CLASS VARIETIES ARE GROWN AND SUPPLIED.

Many thousands are on hand now, and early orders are solicited by

JEAN NUYTENS VERSCHAFFELT,
134, FAUBOURG DE BRUXELLES, GHENT, BELGIUM.

IMPORTANT CLEARANCE SALE

OF

GREENHOUSE and STOVE PLANTS,
ORNAMENTAL TREES AND SHRUBS, &c.,
on Tuesday and Wednesday, October 8 *and* 9, *at*
GOLDEN ACRE NURSERY, INVERLEITH ROW, EDINBURGH.

As the Ground is disposed of for Building Purposes the IMMEDIATE REMOVAL of the Plant Houses and consequent disposal of the valuable contents is rendered imperative.

THE LAWSON SEED AND NURSERY COMPANY (LIMITED)

HAVE INSTRUCTED
Messrs. LYON & TURNBULL, Auctioneers,
TO SELL, AS ABOVE.

Particulars in CATALOGUES now preparing, and will be ready a few days before the Sale.

DAVID SYME, Manager.

MUSHROOM SPAWN.

WE HAVE FOR MANY YEARS made the above one of our specialities, and from the continued Letters we receive in praise of it, and from our own trials, we believe it cannot be excelled in quality. The following Testimonials, lately received, will show the satisfaction it has given. Some are extracts from Letters received at different times, and others are answers to inquiries as to the quality of the Spawn :—

"Ragely Hall Gardens, Alcester.

"Dear Sirs,—In reply to your inquiry respecting the Mushroom Spawn supplied by your firm, I beg to inform you that for nearly twenty years I have used it almost exclusively, and always found it to be first-class, the quality of the Mushrooms being far superior to those of other makers.

"I am, yours faithfully,
"A. HASSOCK,
"Gardener to the Most Noble the Marquis of Hertford."

"Ickworth Park, Bury St. Edmunds.

"I have great pleasure in bearing testimony to the excellence of your Mushroom Spawn, as I have used no other for nearly twenty years. I have never had a failure in all that time, and I grow a constant supply of Mushrooms for ten months in the year. This year your Spawn has been particularly good, if possible better than I ever had before. I always feel great confidence in recommending it to my friends.

"Mr. SQUIBBS,
"Gardener to the Most Noble the Marquis of Bristol."

"Henham Gardens, Wangford, Suffolk.

"Gentlemen,—I have great pleasure in bearing testimony to the general excellence of your Mushroom Spawn as supplied to us during the late and previous seasons. During the whole of last winter we have never missed a day of gathering an abundant supply, satisfactory both in quantity and quality.

"I remain, gentlemen, yours faithfully,
"JAMES GROOM,
"Gardener to the Right Hon. the Earl of Stradbroke."

"Gunton Park, Norwich.

"Gentlemen,—Your Mushroom Spawn is excellent. I have used it for several years, and it has never failed to give me abundant crops. It has always been fresh and new, and from the time of spawning I can cut in five weeks. From the bricks being so thoroughly impregnated with spawn I find it necessary not to place it in the beds too thickly, otherwise the Mushrooms come so crowded that there is not room for them to grow.

"I am gentlemen, yours truly,
"WM. ALLEN,
"Gardener to the Right Hon. Lord Suffield."

"Sherborne Park, North Leach, Gloucestershire."

"Your Mushroom Spawn is the best I ever had. My beds are quite white with Mushrooms. "Mr. SCOTT.
"Gardener to the Right Hon. Lord Sherborne."

Beckett Hall, Shrivenham.

"I cannot speak too highly of your Mushroom Spawn.
"Mr. MEADS,
"Gardener to the Right Hon. Lord Barrington."

"The Gardens, Rossie Priory, Inchture, N.B.

"Gentlemen,—I have much satisfaction in bearing testimony to the excellent quality of the Mushroom Spawn with which you have supplied me for the last eleven years. It has never failed in producing a continual supply of Mushrooms of excellent quality.

"I am, gentlemen, yours truly, "D. DOIG,
"Gardener to the Right Hon. Lord Kinnaird."

"Bletchington Park, Oxford.

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"Mr. McINTYRE,
"Gardener to the Right Hon. Lord Valentia."

"Garswood, Newton-le-Willows

"Gentlemen,—Having used your Mushroom Spawn for many years, and always found it in every way very satisfactory, I can with every confidence recommend it to Mushroom growers.

"I am gentlemen, yours faithfully, "J. SKENE,
"Gardener to the Right Hon. Lord Gerard."

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12 Hyacinths, in 12 choice sorts	0 9 0
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The order should specify whether they are intended to be grown in water or earth, as all kinds are not equally suited to both purposes. It should also be stated whether single or double-blossomed sorts are preferred. The single varieties generally thrive best in water, but their merits are never apparent until the flowers are fully expanded.

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SATURDAY, SEPTEMBER 28, 1878.

ARUNDEL CASTLE.

THE Castle is the life and soul of Arundel—if a town can have a soul—and has been for a thousand years. Quite recently the town of Arundel stood close against the Castle, till the Duke of Norfolk swept it away and rebuilt it further off. No disrespect to Arundel was implied by its removal, and the same thing has been done elsewhere. In the Middle Ages the habitations round a Castle generally huddled up close to its walls for protection, and in those eminently uncomfortable times, when a garden was a rare adornment to a dwelling, there was no recognised incongruity in the juxtaposition of back slums with the best front of a splendid residence.

At present Arundel occupies the steep between the Castle and the river, and the most prodigious stone wall ever seen outside Sebastopol divides it from the Castle grounds. If the drawing-room windows had been opened at one of the great festivals on the occasion of the Duke's marriage, the company, aided by ladders or a flight of steps, might have descended to a narrow terrace protected by a parapet, and thence to an exquisite shrubbery, where a portion of the town stood previous to the great improvements. The lawn among the shrubs is faultless, except at one spot, where a slight hollow betokens that there was once a well here, and all around it slums, abominations, and fever nests.

The history of ancient Arundel and its historic earldom may be found in works on Sussex. At the Conquest the earldom—conferred on Roger de Montgomeri, Earl Marshal of England—included 58,000 acres, two rapes (Arundel and Chichester), three mesne lordships (Halnaker, Petworth, and Midhurst), ten hundreds, eighteen parks, and twenty-five manors. In the midst of his possessions, on the site of a former building of the same kind, on a spur of the downs and above the river-way which it protected, Roger built his castle. What sort of prospect he obtained from the keep people are fond of ascertaining during two days in the week, when the old tower is open to the public. His successors enjoy the same wide landscape, seen in comfort and in safety through plate-glass; and renowned as Arundel Castle was from a military point of view, it still remains the *beau ideal* of a noble residence, placed high, bathed in the ether (I don't mean heather) of the South Downs, laved at the foot by the beauteous Arun, and looking over cornfields, farms, and villages, and across wide meadows to the sea. The park of 1200 acres covers the hill behind the Castle, and most of the Duke of Norfolk's land lies in that direction; but there is a narrow strip of the estate before the Castle windows, running from Arundel to the sea, and including that capital watering-place for juveniles—Littlehampton, with its sandy beach. And here the long view ends delightfully on a shore devoted through the summer to the little folk.

Roger was dispossessed, and died; and Henry I. settled the earldom on his second consort Alice, of Loraine, who lived here in her widowhood, and also when re-married to William de Albini. The fifth Earl of this house died in 1243, and then occurred an accident which has split up so many great estates and

prevented all England from agglomerating into the possession of a single Blue Beard. William de Albini left four daughters or sisters. I think Mr. M. A. Lower says they were his sisters, but all that concerns us here is that they were ladies, and that in the absence—by great good luck—of a male heir, they inherited the 58,000 acres, and divided the estate into four parts. I hope this may not sound flippant, or unfeeling. It is sad, no doubt, to be a landed proprietor afflicted with 58,000 acres, four daughters, and not the slightest prospect of heirs male.

What occurred in consequence of the Earl's great misfortune was this. Fitz-Alan married his daughter Isabel, and took the Earldom of Arundel and a fourth of the rapes of Arundel and Chichester, and he became the ancestor of seven Earls of Arundel in direct line of succession. In 1579 another accident happened, the son of Earl Henry died a minor, and his sister Mary married Thomas Howard, Duke of Norfolk, from whom the present owner of Arundel Castle is descended.

On the highest ground opposite the upper end of the ducal wall the present Duke has built an imposing church on a site so conspicuous that the church appears larger than the Castle. In reality it is perhaps one-fourth as large. I was told that the doors in the wall here would admit me to the kitchen garden, so I tried the effect of a thundering knock, and the portal was soon opened by a youth employed in the gardens, and living in a lodge which he called the "bothy." Mr. Wilson, troubled as he must be by visitors to whom he cannot possibly devote an hour, kindly took me through the grounds. There are about 18 acres of kitchen garden, and 60 acres altogether of "kept ground" immediately about the Castle. Mr. Wilson's staff is composed of thirty men and some boys. In passing quickly through the gardens I observed many hundreds of most promising pots of Strawberries in the open air, and innumerable pits and frames and houses, all at work supplying the present and preparing for the future demand for cut flowers; and I looked into promising pineries, where the fruit will be ripe at Christmas; graperies where the bunches now hang ripe, and orchard-houses and Peach-houses that have already done their duty. Near the bothy is a Hickory tree full of fruit, and within the next enclosure is a great standard Fig tree which ripens its fruit. The great expanse of wall in this useful department of the grounds is covered with fruit trees in good condition, some in fruit, others recently relieved of their crops, but all productive even in this barren year. We passed through orchards loaded with Apples and Pears, and we passed quickly, for my companion is naturally rapid, and I felt myself fired by his ardour.

Entering the shrubberies, we strode on through a number of commemorative trees, and I got a glimpse at the labels, especially when Mr. Wilson spied a favourite sheep with a twisted tether and paused a moment to adjust matters, and say "Poor thing!" While he was talking to the sheep and putting the rope right, I took a glance at the labels. Two thriving Oaks were planted by the Queen and the Prince Consort in 1846, and many other trees by illustrious persons—one of them by Cardinal Wiseman. Bishop Wilberforce, a neighbour and occasional guest, who used to ride across the hill from Lavington, may have planted another, though time and speed did not permit of my discovering it. One might, at more leisure, ascertain whether the plantations of rival churches exhibit any difference in the growth on ground that is of the same quality.

The ancient fortress on the north side was protected by a deep *fosse*, now shaded by vegetation of all sorts, from the planted tree to the self-sown Ivy. A thick growth of Hart's-tongue Fern springs naturally on the sides of this deep *fosse*. At one part a smooth grass terrace runs parallel with the Castle ditch, and on a lawn below it there are two specimens of the Cupressus macrocarpa planted at the date of introduction, and which could not easily be surpassed for size and beauty. It is right that Sussex should possess the two best specimens of a tree that came here as a rare and dear potling, and has now made itself at home upon the Sussex seaboard as one of the hardiest and fastest growing evergreens.

From the eastern walls and slopes there are charming peeps through the foliage into the river valley, and across to Peppering and other farms among the trees in the hill country. From the high ground of the park behind Turner drew his picture of the river and Castle which is now in the national collection. Immediately under the slopes are several of the lions of Arundel which tourists must delight in. The Swinbourne Lake supplies this historic hill with water which bubbles cold out of the chalk rock, and in the same little gorge is a gem of a cottage which is said to have cost £2000, and if the Chinese Privet and other surrounding shrubs were included in the price, it cannot be dear at the money. The Priory Garden is below, nearer the town, with Quince trees centuries old. Quitting the slopes and walls we entered the paradise of Arundel Castle. Visitors to the keep were looking down with longing eyes into this delightful garden. It is completely surrounded by the Fitz-Alan walls and ramparts. Portugal Laurels, trimmed to a formal head and planted in rows, give it the aspect of a Continental garden, and the plants which flourish here are many of them those of a warmer clime, which grow only in England in a dry warm soil, admirably protected.

The Loquat is a large tree here, as well as the Syphora japonica pendula. The Minorca Box is a tree of great ornament, and the Funkia grandiflora a herbaceous plant with a gorgeous blossom. Roses are cut here till Christmas from a long alley completely draped with climbing Roses and creepers. I think there never was a garden more curious and more beautiful and stuffed with a greater number of plants—some single as specimens, some in groups, some as bedders in parterres, some on the bloom, some off. If the old Earls, the Fitz-Alans, could return and see this garden, there is one thing they would certainly desire to do—to stay in it a little longer than I did: speed was the order of the day—it suited my guide and it suited me. And now, in trying to recall the parts and particulars of this oblong piece of walled-in earth, which art has done so much for, the clump of Pampas-grass growing above the level of the eye on one of the Fitz-Alan ramparts, seems to me most beautiful and striking. I believe a list of interesting plants in these gardens was given in a description of the gardens by Mr. Baines a few years since [1875, vol iv., pp. 10, 39]. I do not know whether he mentions the Phytolacca decandra, which is attracting attention here for its handsome spikes of purple berries. It grows on the ornamental walled-in piece of ground where the old town stood. *H. E.*

New Garden Plants.

MORMODES LUXATUM, *Lindl.; Bot. Reg.* 1842; *Misc.* 66, 1843, tab. 33.

A majestic peduncle, nearly 3 feet long, bearing twenty-five grand flowers, was lately sent me by Sir Trevor Lawrence from his celebrated collection. At some little distance you might imagine you saw the flowers of a Yucca or of a Fourcroya. The plant itself mimics a small Grammatophyllum speciosum with broad leaves. The flowers are very eccentric products. Sepals broad, oblong-acuminate. Petals much broader. Lip transverse conchiform, very unequally three-lobed at its anterior border, with cuspidate middle, and blunt retuse lateral parts. It is greenish white, or yellowish at first, and gets lighter with age. There is a broad, dark brown, purplish line from the base to the centre. One petal and two sepals are bent on one side, twisted inwards; the other petal and sepal are bent outwards, and the lip is turned against the three connivent organs, when the column is twisted over it.

I was quite delighted at the sight of this beauty. I had only once before seen it in the hands of Messrs. Backhouse. There is indeed a certain Orchid love required for the appreciation of this plant, for Mormodes are not in fashion. It was originally discovered by Mr. Ross, the traveller for Mr. G. Barker, and when it was first described (1842) Dr. Lindley stated, "It is worthy to be associated with even Sobralia macrantha in the choicest of all collections of those plants." And now I am afraid the appreciation of a very few things is the result of the last act of Orchid collecting. *H. G. Rchb. f.*

"I cannot altogether agree with the learned Professor that it requires a special 'Orchid love' to like Mormodes luxatum. It is really a grand plant—stately in flower and foliage, delicate in its pure ivory tint and in its scent, and quaint in its twisted shell-shaped lip. To my eyes it possesses many varied beauties, enough of them to captivate all tastes. *T. L.*"

CHLOROPHYTUM POLYRHIZON, *Baker, n. sp.**

This is a curious little white-flowered Anthericoid plant, sent by Dr. Kirk from Zanzibar at the same time as Drimiopsis perfoliata, and which also flowered for the first time in the Kew collection in the month of July of this year. The flowers are just those of the Himalayan C. nepalense, but the habit is much dwarfer; the leaves are very different, and it is remarkable for the persistence of its old corms below the new ones. In the specimen dug up for the purpose of making this descriptiou, there were five of them superposed like great beads on a necklace, and only the lowest of the five was materially shunk from its original dimensions.

Rootstock of several subglobose, rather discoid, fleshy white corms, under ½ inch in diameter, with root-fibres produced from the lower edge of the top one. Leaves 4—5, cotemporary with the flowers in July, oblong, acute, subereet, crowded, and clasping the base of the stem by their short petioles, thin in texture, bright green on both surfaces, with distinct curving main veins, ¼—⅓ inch apart. Stem 3—4 inches long, naked, slender, terete. Raceme laxly 5—6 flowered. Pedicels shorter than the flowers, white and much thickened (like those of Arthropodium cirrhatum), articulated at the top, all solitary, bracts linear, longer than the pedicels. Perianth pure white, 1 inch in diameter when expanded. Segments ½ inch long, outer oblong, inner narrower. Genitalia half as long as the perianth-segments. Filaments very short. Anthers yellow, linear. Style rather declinate, reaching to the tip of the anthers. Stigma capitate. *J. G. Baker.*

SCHOMBURGKIA LYONSII, *Lindl.; Gardeners' Chronicle*, Sept. 2, 1853, p. 615; *Bot. Mag.* 1860, 5172; Van Houtte, *Flore des Serres*, xx., 2130, p. 127 (*icon perfecte eadem*); *S. carinata*, Griseb., *Flora Brit. West Ind.* 621.

It is now twenty-five years since this plant, the prettiest of the genus, as Dr. Lindley stated, appeared with Mr. Lyons, of Ladiston. It was gathered in 1848, in Jamaica, by Mr. Purdie, who remarked that it was a "most beautiful plant." Mr. Wright collected it "in Cuba, in bunches on the ground, but fallen probably from some tree." I saw in 1856 at Dr. Lindley's a specimen belonging to and collected by Dr. Alexander-Prior, and most probably the following memorandum belongs to this, that is made by Dr. Lindley: "Attached to the trunk of a tree brought down as timber from the hills, Jamaica." The plant figured in the *Botanical Magazine* was a very inferior variety, with small spots on the flower and yellow ovaries.

I was exceedingly pleased to get for the first time in my life a beautiful fresh inflorescence of this rarity, through Sir Trevor Lawrence's kindness. It was obtained from Mr. R. Barclay, Bury Hill, Dorking, grown by Mr. Pitts, having been brought home by a member of the Barclay family.

Imagine a long Schomburgkia raceme, with very long narrow bracts, flowers equalling those of Schomburgkia rosea, ovaries dark purplish, sepals and petals white, wonderfully covered with seriate rows of Hebrew letter-like dark purplish stripes. The lip has a brown margin, keels in the middle, and transverse purplish spots. The small white purplish column has an acute

* *Chlorophytum polyrhizon*, Baker, n. sp. — Rhizomate e cormis subglobosis pluribus efformato; foliis 4—5 subradicalibus foblongis acutis synanthiis breviter petiolatis caule nudo æquilongis; racemo laxo 5—6 floro; pedicellis solitariis incrassatis flore brevioribus, apice articulatis; bracteis linearibus; perianthii albi rotati segmentis oblongis; genitalibus perianthio duplo brevioribus; filamentis brevissimis, antheris linearibus.

process on each side of the two-horned anther. For those who do admit Schomburgkia, it is decidedly a great beauty, yet I am quite aware that Schomburgkias are not in fashion—happy plants, which therefore will not be killed in hecatombs.

The quotation of *Gardeners' Chronicle* is copied from *Botanical Magazine*, and should most probably be "September 22," not "September 2." *H. G. Rchb. f.* [The correct reference is September 24, p. 615. EDS.]

THUIA STANDISHII.*

IN the late Prof. Parlatore's monograph of the Coniferæ in De Candolle's *Prodromus*, the plant above named is referred to T. gigantea of Nuttall, and this has been looked on as affording additional evidence as to the relationship of the North American and the Japanese floras. But without entering into this point it may suffice here to question the propriety of Prof. Parlatore's views, and to show that Gordon held more correct opinions as to its proper position. The plant was introduced originally from Japan in 1861 and was named by Gordon Thuiopsis? Standishii, and afterwards Thuia Standishii. Subsequently Maximowicz described the same plant under the name of T. japonica. Neither Fortune nor Maximowicz appear to have met with it in a wild state, cultivated plants only being known.

From the American T. gigantea the Japanese plant is readily distinguishable by its branches, which are more rounded and not so flattened as in gigantea, in which they are even concave on the under surface, by its leaves, which are oblong obtuse, not broadly ovate, and sharply acuminate, and moreover marked with a conspicuous gland; the cones are more nearly globose than in the American plant, in which they are oblong. The scales of the cone in the two species follow nearly the same rule as the leaves. Lastly, the wing of the seed is nearly entire in T. Standishii, while in T. gigantea it is deeply notched. For these reasons, then, we consider Gordon quite justified in considering the species as distinct. Both T. Standishii and T. gigantea have, as was pointed out to me by Mr. Syme, three seeds to the cone, the usual number in the genus being two only. However, the number of the seeds by itself can hardly be looked on as a good character. Of the identity of T. Standishii with Maximowicz's plant there can be no doubt after a comparison with the specimens gathered by the Russian botanist preserved in the Kew herbarium. As the Japanese plant is only known in a cultivated state, it has been surmised that it may have been introduced from North America, or it may be considered, as before said, to have migrated from America in ages long gone by to Japan, and to have assumed different characteristics in the latter country. But while there is evidence to show the probability of such a migration in other plants, we do not think there is at present sufficient evidence in the case of the plant now before us. In any case it is a distinct and handsome plant for English gardens. *M. T. M.*

* Thuia Standishii, Gordon, *Pinetum*, ed. 2, p. 428 (1875; Thuiopsis? Standishii, Gordon, *Suppl.*, p. 100 (1862); Thuia japonica, Maximowicz, in *Diagnos. Plant. Jap.*, Decas. 1ma. (1866), in *Mélanges Biolog.*, St. Petersburg, t. vi., p. 26 (*haud* T. japonica, hort.); Thuia gigantea var. Parlatore, in *D.C. Prod.* (*haud* Nuttall); Thuja gigantea, Nutt., var. japonica, Franchet and Savatier, *Enum. Pl. Japon.*, p. 469.

A NEW PEZIZA.

DEAD and decaying herbaceous stems, branches of trees, and leaves, are beset by a variety of small fungi which help the process of decay, clearing our woods and forests of vegetable matter which otherwise would become a nuisance, while at the same time they provide suitable food for a vast number of minute living things. Many of these fungi although very small are remarkably pretty objects, and well worthy of a closer study than is generally bestowed on them. The fact that a microscope is necessary for their examination and a little patience requisite for the work will account for their being generally neglected. A species has just come under my notice, which does not appear to have been previously described, and may be of interest to some of your readers. It belongs to the genus Peziza, and has, in all probability, been included under the well-known species of Peziza virginia or Peziza nivea. The character by which it may be readily distinguished from all its congeners is that the hairs with which the exterior is clothed are surmounted with minute bodies, somewhat resembling the Maltese Cross. The accompanying figure (fig. 71) will convey a better idea than any words, but it may be described as follows:—

PEZIZA (DASY. STIP.) CRUCIFERA, *n. s.*

Minute, gregarious, stipitate, white, cups at first globose, then expanded, clothed with short septate white hairs, with clavate summits crowned with cruciform crystals; stem rather long, villous to the base; asci cylindrato-clavate; sporidia eight, cylindrical or narrowly fusiform, straight, .006—8 × .001 mm.; paraphyses as broad but longer than the asci, acutely pointed.

This differs from P. echinulata, Aud., in having a longer stipes, being persistently white when dry, and having the curious cruciform bodies on the summits of the hairs. The whole plant is about .5 mm. high. On dead stems of Myrica gale. Capel Curig, North Wales. June, 1878. Since found in Scotland by the Rev. J. Keith, and in Norfolk by Mr. C. B. Plowright.

The following note is from the Rev. M. J. Berkeley:

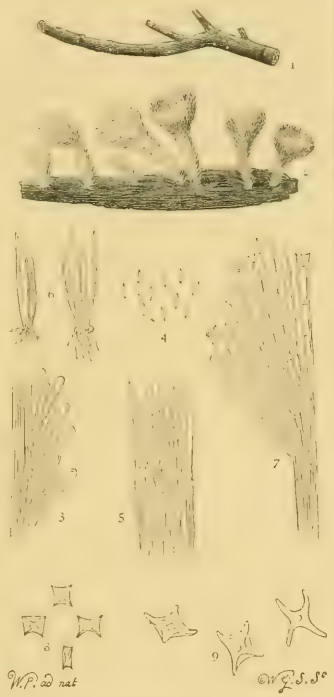


FIG. 71.—PEZIZA CRUCIFERA, NAT. SIZE; DETAILS MAGNIFIED.

—"I have with great pleasure examined your Peziza. I find that the crosses fall off, and I suspect that they are crystals; but if so the matter is not less curious. They are something like crystals of carbonate of lime, and nearly resemble some forms of crystals of oxalate of lime. The subject is worthy of further consideration. I have little doubt they are crystals."

Though perfectly satisfied that this view was the correct one, I obtained the assistance of my friend, Mr. T. P. Blunt, a very able analytical chemist of this town (Shrewsbury), who satisfied himself by such chemical means as were possible with such minute objects that they consisted of oxalate of lime.

Description of fig. 71:—1, a group of plants on a fragment of Myrica gale, the natural size; 2, a group magnified about twenty times; 3 and 7, portions of the hymenium, showing the asci and paraphyses more highly magnified (about 400 times); 4, the sporidia, under the same power; 5, a group of hairs from the cup, magnified same as last; 6, hairs from the stem; 8, the crosses detached from the hairs, seen under the same power; 9, the crosses still more highly magnified. *William Phillips.*

[It is well known that oxalate of lime and binoxalate of potash occur not unfrequently in fungi, but we have never seen crystals of the former in such a curious position as in a minute white Peziza, lately sent by Mr. W. Phillips, one of the most indefatigable and accurate observers of minute Fungi. Every hair with which the cup is clothed is terminated by a single crystal of a most beautiful and well-defined form, giving the whole under the microscope a most interesting appearance. The matter is at first very puzzling, but the moment the crystals drop off their true nature is at once abundantly clear. *M. J. B.*]

THE RENOVATION OF OLD TREES IN THE PARKS.

IT is surprising that in the remarks of your correspondents on this subject no reference is made to three of the best means of renewing the youth of old trees and restoring the failing energies of exhausted ones. [It had been done previously. EDS.] You are doubtless quite right in assuming that poverty of soil and stagnant water at the roots are, in many cases, the chief causes of premature age and exhaustion. Fortunately antidotes for both are available without destroying the trees. A few deep drains skilfully laid will tap the land of its stagnant water, and these may generally be formed without the destruction of any trees. Almost the fewer drains the better, but these few should be deep and so adapted to soil, subsoil, nature and incline of the surface and lower strata as to keep the water that may rise from below or fall on the land from above in motion. There is seldom in the neighbourhood of London any absolute excess of water to deal with. The distribution may be faulty, though the quantity may be barely sufficient. An excess of water at the wrong time that cannot be quickly circulated and moved on or through rather than off the land may chill or decompose the best roots. Vital checks or paralysis follow, succeeded by weakness that opens every avenue of vegetable life wide for the entrance of disease and the attacks of destructive insects or fungi.

The rainfall generally reaches its maximum in the autumn; most rain, in fact, seems often to fall when it is least needed by the trees. When their using power sinks to zero the water supply not seldom reaches the highest point. Could such copious supplies of water be moved on, they would exert most useful cleaning and enriching influences on the earth, forming new, larger, better, richer root-runs for the succeeding year's roots. But let it either run off or remain on the land and it equally impoverishes it. Run it off the surface or in shallow drains and it robs the earth of its most soluble and feeding properties. Allow it to stagnate in the soil and the whole mass of earth is quickly transformed from plant food into root poison. Keep the water slowly in motion by a few deep drains and all would be well with the soil and the trees. New roots would spring forth, and in a few years send streams of new life and fresh vigour through every twig, branch, bough, trunk, and the old trees would once more become young again, for trees possess a recuperative power that might be termed miraculous by those unfamiliar with the resuscitating force of fresh and more favourable conditions.

Our second means of restriction is equally simple and potent. The soil is exhausted, it cannot be deepened nor enriched in the mass without destroying the trees growing upon and over it. But it can easily be added to and enriched in detail by top-dressing. Starved trees respond with amazing alacrity to a good spread of rich compost spread over the surface. It is wonderful this instinct, may we not term it, of roots to find the larder. Where the soil is of uniform quality the growth of roots is tolerably uniform, diverging to about equal distances in all directions from the boles. It seems also natural to many roots to descend at a certain angle from the surface, but spread something good within range of root cognisance and they are up after it as surely though not quite so swiftly as a hound after a fox or a hare. Trees seem never too old to be amenable to this handy means of surface feeding. Many of the most marvellous renovations have been effected by the surface dressing of old trees. Of course all the old surface should be removed, the solid firm earth over the roots slightly broken up, and the dressing—from 3 to 9 inches is a good depth—applied. No fear need be entertained but that the roots will find and feed upon it.

Of course the process is somewhat expensive, but this can hardly be urged against its adoption in the national parks and pleasure grounds of a nation so wealthy and so prodigal in spending as England. And, besides, as the best of all top-dressings for trees is maiden loam, and as this country abounds with this, the cost of top-dressing consists chiefly in transit and labour, and the price of a single ironclad devoted to this purpose would probably save most of the trees in our public parks and pleasure grounds from premature decay and lingering disease or death.

Our last recuperative force is water. In our climate, and especially in the neighbourhood of London, drought kills far more trees than an excess of water. This may seem inconsistent with our first statement, but it is really not so; what is needed is, not less water, but more in the growing season, and a more natural distribution. The word "natural" is used advisedly. The rainfall of London, say, is not natural to the majority of trees grown in our parks and pleasure grounds. Within the range of Great Britain alone we have the rainfall ranging as widely as from 25 to 60 inches; taking a wider geographical range the rainfall varies yet more widely, and yet trees and shrubs from all parts of the world are expected to thrive and be satisfied with the rainfall of, say, Kew and the parks around London.

With deep drainage to keep the water moving many of the trees and shrubs would thrive infinitely better with a double and treble allowance of water. This is one of those things they assuredly do better in France than in England. One soon ceases to wonder at the health and vigour of the trees in the Champs Elysées, and the chief boulevards and streets of Paris, when they note the admirable arrangements made to supply the roots with food, water and air. Planted in good soil, with iron gratings over the roots to permit the air to preserve it sweet and good, and the whole mass of earth frequently deluged with water during the growing season, the trees have a freshness and vigour and luxuriance all too seldom met with in the most favourable positions at home. The perspiration from a wide-spreading tree on a hot summer's day must be, is indeed proved by direct experiment to be, enormous. As long as the roots can restore the waste as freely as it is expended it is well for the tree. The energy of evaporation may to a great extent be accepted as the measure of growth. But let waste gain on supply, the tree at once suffers, and goes on suffering till the balance is readjusted, slightly in favour of supply.

Heat on top, drought at bottom, kills its thousands of trees, especially Conifers, though deciduous trees, such as Beeches, with their enormous spread of foliage and surface roots, are among the first to succumb to dryness at the roots. If found on a thin soil and a dry bottom it is quite possible that many of the Kew Beeches might be watered back to new life and vigour. The experiment is at least well worth trying. The water would do more than feed thirsty roots—it might drown out the mycelium or fungus threads that follow and fasten on enfeebled roots like beasts of prey on their exhausted victims, and this hastens and extends the destruction of the trees.

The lineal planting of choice trees should, as a rule, be avoided. If avenues are wanted, let them be formed of trees that grow well and live long in the district, and be merely planted for shade and effect. All choice trees should be massed in groups on some such principles as those you have indicated—tallest in the centre, the smaller members of families at the sides, &c. This brings me to my last point, which is perhaps the most important of all—that is, to plant as much as possible on uneven ground. This would break up flatness in the arboretum, insure sufficient depth of soil for the largest and longest-lived trees, provide an infinite variety of sunny, shady, sheltered, exposed, and all degrees of intermediate sites, and add immensely to the immediate effect, and future picturesqueness, dignity, and grandeur of the arboretum. By planting in groups and on miniature mountains, or bold and infinitely serried mounds, the shrubs and trees would not only grow better and faster, but look infinitely better while growing, and even afterwards. *D. T. Fish.*

THE VINE DISEASE IN MADEIRA.

At a time when the attention of all more or less interested in the cultivation of the Vine is being directed to the subject of the Phylloxera, it may perhaps interest some of your readers to learn what success has attended my humble efforts to solve the problem presented to Vine-growers. It may be as well to state at once that a radical cure can hardly be hoped for. We must be satisfied if at a moderate cost this scourge can be so far held in check as to enable the Vine to maintain a healthy growth and to bring its fruit to perfection. The chief difficulty in the way has been to discover an agent potent enough to destroy the pest underground without at the same time injuring the Vine.

After trying in vain various suggested remedies I was led, in consequence of observing the effect produced by Canada balsam and turpentine in mounting specimens of the Phylloxera for the microscope, to treat with a somewhat similar preparation my sick Vines. The result cannot but be considered satisfactory, inasmuch as, instead of a rapidly diminishing crop for the last two years, there has been a considerable increase in the amount of wine produced by these Vines. My treatment is simply as follows:—In the autumn and winter I cause the underground stem and principal roots of the Vines which are to be treated to be laid bare of earth as far as can be conveniently and safely done, removing and causing to be burnt or plunged into boiling water the loose bark, which is generally teeming with insects. I then apply with a brush a coating of turpentine in which sufficient resin has been dissolved to render it decidedly sticky. The proportion is about 3½ oz. of finely powdered resin to a quart bottle of turpentine. Solution to be assisted by heat.

I take this opportunity to manure the Vines, so that one removal of the earth shall suffice for both operations. The roots when tolerably dry are covered with earth. The mixture kills all it comes in contact with, and, in whatever other way it may act, continues to present, in consequence of its being unaffected by water, an impassable barrier to the passage of the insect to the upper world. Several thousand Vines have been treated by me in this way in the course of the last two or three years, and although at the time of treatment they were teeming with Phylloxera, they have thrown out strong shoots, produced good crops, and have preserved the dark green colour of their foliage through the past trying season. The cost of the mixture is trifling, and, as far as I have seen, the operation need not be repeated oftener than once in two or three years. *Thomas S. Leacock, Madeira, Sept. 12, in the "Times."*

A HOLIDAY IN CARDIGANSHIRE.

(*Continued from p. 360.*)

On Thursday, August 22, the archæologists went in separate sections. One party (including the writer), termed the "old stone men" (and who insisted upon having no "tea-and-toast men" with them), went direct to Treganon to see some ancient stones in the churchyard. On reaching the place all the stones had vanished, and no one knew anything about them, although Professor Westwood, the father of the party, had previously seen them. In disgust the party then drove in a vile elongated vehicle for Llanwenna, passing on the way an immense teal-infested peat-bog, six miles long and three miles wide. This bog of Tre-garon (probably it should be Tre-Charon, from its Styx-like aspect) is clearly a botanical paradise, but as other interesting bogs were in prospect the botanical treasures of this position were passed by for the nonce. At Llanpennal there is nothing to be seen. On reaching Lledrod a fine crop of Mushrooms was discovered growing in the neglected bell-tower of the church on a stratum of humus which had accumulated to the depth of a foot. At this village Ornithogalum longibractetum was seen tied up with bandages, as figured in last year's *Gardeners' Chronicle*. [Vol. viii., p. 232.] This was a most fortunate occurrence, as one of the Cambrian Professors had just before said that the writer "must have had sharp eyes" to have seen such an object in Carnarvon last year.

On approaching Llanwonno a stoppage was made to examine and sketch an immense block of white spar named MAEN GWYN, or "white stone," placed in its present position in prehistoric times. The block now forms part of a boundary wall, and is 4 feet 6 inches wide and 4 feet 8 inches above the ground-line. On removing some of the loose earth at the base the writer found at the depth of a foot a fine crystal of quartz 2 inches in length. From the Maen Gwyn to Llanwonno Church the district is decidedly boggy; the Cotton-grass is abundant, so is the greasy slush in which the long-lost bell of the church was recently dug out by a peat digger. In the churchyard of this place there is an upright stone, 3 feet 3½ inches high, dating from the ninth to the eleventh century: it bears a cross and inscription in Anglo-Saxon characters, and the whole stone is so defaced and discoloured by lichens, &c., that it might be readily passed by as a mere piece of unworked stone. In colour it looks like a large slice of very rich Christmas plum-pudding. As an example of the difficulty of reading some of these uncouth, almost worn-out inscriptions, the reading is here appended, the decipherment being mainly if not entirely due to Professor Westwood. The inscription is in three lines, and a full stop indicates the end of each line or sentence: EXPLI · CAVIT · HNC · DEIE · LEL · BENDNL · MPROVNT · MAIHROID · HEREUS · CARO · TINN. The R's are like N's, the I's like J's, the Q is like O, and the E and T are in one letter. When the missing letters are supplied, and the stops are put in the proper places, the legend runs QUI · CUNQUE · EXPLICAVERIT · H(OC) · NOMEN · DEI · BENE · DIXERIT · PROANIMA · HIROIDI · FILIUS · CAROTINN. "He who will explain this name (or this sign, *i.e.*, the Cross) let him give a benediction for the soul of Hiroidi, the son of Carotinn." As time was getting short, and as the "old stone-men" wished, if possible, to have *one* dinner at Lampeter, the party drove off rapidly to Tregaron on the way to Llan-dewi-brefi, to see and draw the inscribed stones and sketch the silver chalice. The latter was done, and then the three ancient stones, belonging to the ninth or tenth century, in the churchyard, were carefully drawn. One bears the inscription CENLISINIBEDS, which means CENLISINI · BENEDICAT · DEUS. "May God bless Cenlisinus." The most interesting stone at this place has been broken up and built into the church wall, and the greater portion has vanished. The original stone is said to have commemorated some one who met his death during a "loot" of St. David's Cathedral. The original inscription is partly known, and, when read incomplete, stands as follows—the letters in brackets being now all gone:—[HIC IACIT ID] HERT FILIUS IA [COBI QUI] OCCISV [S.E.] VII PROPTIS PR [AEDAM SANCTI —]. This stone was some time since broken into five pieces: three are missing, two are built into the wall at the west end of the church; one has six letters only left, the other has twenty-four letters, but this latter stone has been bedded upside down. As we one after the other got up the insecure ladders to secure rubbings of and sketch these stones, it was explained to us that the former clergyman knew the value of the original stone, and requested the masons to preserve it, but that the masons broke it up one day whilst the clergyman *was at dinner*. This explanation reminded the archæologists of the familiar distich—

> "It may have been right to dissemble your love,
> But why did you kick me down stairs?"

Why were three stones demolished, two pieces built into the wall out of reach, and the more perfect piece bedded upside down? The Rev. D. R. Thomas, of Meifod, Welshpool, discovered another dubiously inscribed fragment inside the church, but it had been treated to so many coats of whitewash that nothing could be made of it.

On Friday the "old stone men" drove to Criban to see the "Monk's Stone" (Maesymynach), belonging to a period ranging from the 8th to the 10th century. The huge stone, enriched with Anglo-Saxon enlacement, is now prostrate under a Sycamore tree in a farmyard, and owing to copious showers of rain which had just fallen, Professor Westwood had to blow the water out of the interstices of the ornaments with a pair of bellows before copies could be taken. Then the party drove through the village of Capel St. Silli, on their way to Llanllyr House. At Capel St. Silli special note was taken of the terribly dilapidated, small and ruinous structures occupied by the villagers. These and similar dwellings on the property of Lord Lisburne are said to be the worst specimens of dwellings for human beings in the whole of Wales. A stoppage was made to make careful drawings of these human-sties, as some of them may one day be swept away, and it is well to have some record extant. A stoppage was made to drink water at a sulphur spring on the way to the inscribed stone near Llanllyr House; rubbings of this stone were taken, and a careful drawing made. No amount of work would, however, give a satisfactory reading on the spot, all that could be made out was that the stone was in memory of some one with a long affix, and who was the son of some one else. The stone was prostrate by the side of a large plot of Potatos on which there was a strong and very interesting growth of Peronospora infestans. Luncheon had been kindly provided here by Colonel Lawes, and the weary "stone men" had they known of

it would have been only too glad of it. Although the servants were about all the time they said nothing about luncheon, so the archaeologists went off without calling at the house. This they afterwards had reason to regret, as it came to their knowledge that a missing slice of the Anglo-Saxon stone was built into the residence. On driving through Abermewrig, close by, however, the "stone men" were invited to an excellent repast by Mrs. Rogers and Miss Lewis, at the residence of J. E. Rogers, Esq. They then learnt that the other section had lunched here before, and at Llanllyr as well. The old Roman position of Loventium was next visited, where stones with Roman inscriptions are to be seen built into the farm-building now covering the spot; tiles, bricks, and cement of Roman date are strewed all over the place, the mortar even now adhering to the bricks so firmly that it is impossible to remove one without breaking the other.

The ancient Romans clearly differed from the modern London jerry builders who make bricks of mud and foundations of straw mattresses and rotten Potatos, the whole coming down with the first high wind or shower of rain, as detailed by the writer a few weeks ago in the *Gardeners' Chronicle*. There was yet one other church to visit, viz., that of Silian, where a long-ost Anglo-Saxon stone was refound, and a very brief inscription from a stone, now embedded in the church wall, was copied. The legend is uncommonly short and to the point: it only reads, BANDVSIACIT—Here lies Bandus. He was probably suspected of being no good, for some early Christian carver has incised a deep and large cross through the letter B in Bandus, probably with a view to some defeat of the machinations of the Evil One. A magnificent crop of Marasmius Oreades (Champignon) grew in the churchyard, but the clergyman would not be persuaded to eat the specimens. Near this spot the Birch trees were covered with "Witch's Besoms," and a very large and similar growth was observed on the apex of a Fir.

This was the last day of the excursion proper, and every day the magnificent Ash and Beech trees were noted. The Mountain Ash, too, was everywhere abundant and well grown. The Houseleek was on every roof, the Teazel appeared to be grown as an ornament in every garden. Linaria vulgaris made every hedgerow yellow. Eupatorium cannabinum and Spiræa Ulmaria were the two commonest plants of the road-side. Other plants will be mentioned later on, together with some of the fungi: the latter plants were everywhere abundant, and offered unusual opportunities for a species-maker—had one been present. The women reaping in the cornfields and the farmer's wives and daughters on horseback—frequently two women on one horse—were noted, and the smell of burning peat from chimneys of wicker-work pervaded the atmosphere near every village. Although no end of antiquities and plants were noted, yet Platycerium alcicorne was nowhere. The writer, however, met with Asplenium septentrionale.

In the evening the meeting for next year was appointed for Welshpool. In the Museum there were many objects of great interest; one, a large solid piece of woodwork found in a peat-bog at Nant-yr-Ash, puzzled every one. No one could give a clue to its purpose. The "Nanteos Healing Cup" was examined with interest: the Bishop explained that it was even then under a "course of healing," and that its powers were said to be superior to any medicine. It was stated to be "probably a very early chalice," which seemed very improbable, and that it was "popularly believed to be part of the true cross." The Bishop said that the healing powers were supposed to be more potent when a little piece was nibbled off the edge and swallowed: so much had been already nibbled and swallowed that not more than one-third of the wooden bowl was left. Unless the popular belief changes, it is to be feared that this valuable cup will soon pass away. Mrs. Lloyd, of Peterwell, sent a stone, said to prevent any ill-effects from the bite of a mad dog. Some Nantgara china was exhibited by "— Jones, Esq.," a somewhat indefinite appellation for a resident in South Wales; a large number of British antiquities and early coins were exhibited, together with a considerable number of New Zealand paddles, spears, skull-crackers, &c.; these latter objects might be dispensed with at future exhibitions, as they have but little local interest. Some very good old china was exhibited. During all the excursions most valuable aid was given by Mr. Geo. E. Robinson, architect, of Cardiff. *W. G. Smith.*

(*To be continued.*)

TRANSPLANTING.

Of the many vexed questions relating to gardening matters that crop up from time to time, that of the proper season for transplanting evergreens is the one most undecided, many being of opinion that it is best done during the autumn months, while others are just as strongly is favour of spring for carrying out the operation. The real fact, however, is that there can be no hard and fast line drawn, as much depends on the state of the weather prevalent when the plants are lifted, the course of preparation they have previously received, and consequently the condition they are then in, but what tells more for or against those moved in autumn is the mildness or otherwise of the winter that follows, for when cold and bleak with intervals of scathing frosts, a plant that has lost its principal feeders stands but little chance of passing the trying ordeal in safety. Shorn of its principal support it is like a half-starved animal turned adrift in the cold, with its blood coursing slowly and languidly through its veins from lack of the propelling force that access to a well stored larder gives; and in just the same manner if the vital energies of a plant are brought to a low ebb through an insufficiency of sap being pumped up to meet the demand made on it, it must perforce give way and succumb, as the leaves are left without a particle of moisture in them and the branches become dry sticks. Even if they survive, the bark is generally so contracted from the emptiness of the sap vessels, that the passages for this life-giving fluid are closed, and thus the future means of circulation are almost entirely cut off.

I have seen trees and shrubs in this state drag out a miserable existence without making any progress, till they formed fresh shoots from below, after which they started away and grew with great rapidity, thus showing clearly where the mischief lay, although to any one at all acquainted with vegetable physiology the cause of their non-success was patent enough. Not only has the mildness or otherwise of the winter immediately following autumn transplanting much to do with the growth of trees and shrubs, but the situation too has to be considered, for although it might be perfectly safe to carry out such work in certain localities, to do so in others would only court failure. Such would be the case near most parts of the sea coast, or in exposed positions where they would get but little shelter to break the force of the winds, which besides taking the sap out of them keeps them in such motion that it is next to impossible for fresh roots to form, unless extraordinary means be used to maintain the plants in a rigid position. This immovable state is at all times a very great aid to success, and is one of the most important matters connected with transplanting at any time, but excepting with the more experienced its utility is generally overlooked.

Besides unfavourable winters, exposed situations, &c., there are other things to be considered as affecting the general success of transplanting evergreens, one of the chief of which is the kinds to be operated on, as there are some that may be moved at almost any season of the year, while there are others that autumn planting would be almost sure to kill. I should not hesitate to move such things as Aucubas, Box, and Rhododendrons, at any time when most convenient, except when they had soft young growth on them, but I should not think of interfering with Hollies, Berberis, and Arbutus till the spring—a time when, if handled carefully, they rarely fail. The thing with these is to get rid of the March winds and catch them just as the buds are beginning to burst and the genial showers come to their assistance, and if this is done no one need hesitate about the removal of any choice specimen they may have, or fear the result.

It is necessary, however, with large plants to keep them well looked after by plying water from the garden engine over them both morning and evening till they get a fair start, as by doing this the bark and leaves are kept fresh and plump and the buds are enticed to unfold. This formation of the young foliage is the prelude to an active root action taking place, as they immediately respond, and send out feeders, corresponding in numbers to the progress the top makes, there being a remarkable reciprocity between the two, and this is one of the reasons why I am in favour of the spring for the general transplanting of evergreens. At that season the soil is daily getting warmer, and everything is waking up into renewed life, whereas in autumn the reverse of this is the case, and, unless the work can be done at latest by the middle of October, there is therefore every reason why it should be deferred till April or May. Coniferæ and all choice things of that kind may then be treated with perfect safety, but where these are of extra large size it is always advisable to prepare them a little beforehand by digging a deep trench around them that any of the large main roots that have to be severed may have time to heal and form fresh fibres. In no case should this trench be nearer than a yard from the base of the tree to be operated on, but the distance must in a great measure be decided by the height of the plant and the spread of its branches, and if some leaf-mould or other light soil is used when filling in, young feeders will be induced and greatly encouraged thereby.

A frequent cause of failure when moving large trees or shrubs is from not washing the soil in properly, as in no other way can the cavities that always occur under and around the ball be so well filled as by using water in quantity and applied with some force, so as to carry the soil in a semi-liquid state with it, when after a time the whole settles down in a solid body together. It is altogether impossible to attain this degree of solidity by treading or any other means, and soil so thoroughly saturated retains its moisture for a considerable period if finally covered in after with some that is dry and then mulched over so as to exclude the sun and air from the surface. A plant so cared for will be almost independent of the weather or after assistance, as evaporation from the soil immediately around it is in a great measure cut off; and not only this, but the earth is maintained at a more equable temperature, which is much in favour of a rapid formation of roots. Some planters advocate the summer months for removing large trees and shrubs, but such work is only practicable by the aid of machinery made for the purpose, and as these lift large bodies of soil with the plant without any disturbance it can scarcely be called transplanting at all, as it is a mere transference from one place to another, and there are few who care to embark in such a costly undertaking unless the occasion is very special and some choice specimen is concerned.

As regards deciduous plants, most are agreed that the autumn and winter months are the proper seasons for transplanting them, and in all cases where they are of large size and of any particular value the sooner it takes place after the fall of the leaf the better, and the greater will the success be. It is a great help to standards of any kinds that have much length of stem exposed, to bind them up closely with thick haybands, as these ward off the winds and keep the bark plump, thus allowing free course for the circulation of sap to nourish the exposed branches and buds. If this simple protection were more generally afforded and the trees kept perfectly steady, the check they sustain in removal would be scarcely felt. *J. S.*

DUKE OF BUCCLEUCH GRAPE.

This is a very thin-skinned Grape, but I hope that the skin of its raiser is a very thick one, for, if it be not, I do not envy him the honour of having raised so fine a Grape.

Experience differs, and differs widely, in reference to the growing qualities or constitution of this Vine; but I think most practical men will agree that it is one of the most delicious and refreshing Grapes that we know of. Indeed, when we take into consideration its enormous and almost stoneless berry, its pleasant, dissolving skin as well as flesh, its brisk and pleasing flavour, as well as its charmingly bright amber colour, I know of no Grape equal to it, except perhaps a well-swelled Canon Hall Muscat, which one rarely sees.

The Vine is evidently not what may be termed a general well-doer in the same sense as a Black Hamburgh Vine, or a Keen's Seedling Strawberry, but it has such unusually fine qualities in its fruit that it is deserving of special study and special culture by the gardener who has to cater for a fruit-appreciating family.

I have no great hope of help in this matter from that popular mesmerising wonder "science," but I have much more hope from comparing notes of experience with practical and observing men, and I believe if gardeners who have succeeded or failed in growing the Grape would relate their practice and experience simply (not in the dog-in-a-manger tone, which is too often adopted), [but in an intelligent manner], some crumbs of safe practice might be gathered up for the benefit of many of us.

For myself I did not purchase the Vine until nearly two years after it had been distributed, and I then inarched it upon a Black Hamburgh in a vinery that usually ripened Grapes about the end of July. Last year I had four beautiful bunches of the Duke upon the Vine. The berries swelled evenly, and to a large size, and were quite free from blemish, and the Vine made good wood. For the present year it was necessary that we should have Grapes ripe in the same house six weeks earlier than they were last year. The Black Hamburgh showed well, and finished a beautiful crop of fine Grapes; but, alas for the "Duke!" his Grace made excellent promise, but the performance was miserable. It is only fair to say that not the least special attention was given to the Duke. Our soil is of the new red sandstone formation, and suits the Hamburgh very well.

Quite recently I determined to have a little trot to the "Land o' Cakes," and at Drumlanrig Gardens I saw some of the grandest samples of the "Duke" Grape that I ever looked upon, and I made up my mind to extend the culture of this Grape at once. In my further wanderings I saw Clovenford Vineyard, the home of the raiser of the Duke. I confess that I never before saw such an astonishing sight of Grapes as is to be seen there at the present time. One large house is devoted almost exclusively to the Duke, and there were still hanging a quantity of magnificent bunches, large in berry, clean and spotless in colour, and altogether to me the most fascinating of all the magnificent Grapes that are to be seen there.

Unlike the North Country Pelargonium grower, with "seven ingredients in his soil, four of which he would tell to any one, but the remaining three to no man," Mr. Thompson has no professional secrets, but his best knowledge of fruit culture is always at the service of those who seek information, whether personal friends or strangers. He says that "the Duke must be ripened in July to have it in the greatest perfection; that as soon as the second swelling commences, the atmosphere of the house must be kept much dryer than is usual for other Grapes, as well as the border." For myself I am abundantly satisfied, that if we fail in growing this Grape successfully, it is the want of skill rather than the fault of constitution in the Vine. *Z. Stevens, Trentham.* [We have a good bunch of the "Duke" before us, which quite bears out Mr. Stevens' observations with reference to its noble appearance and fine table qualities. EDS.]

ABOUT OLD FUCHSIAS.

IT certainly must be gratifying to the lovers of elegance and beauty as developed in flowers to see that the Fuchsia is attracting attention in the pages of the *Gardeners' Chronicle*. For some time past this favourite appears to have declined from that pride of place it once so worthily occupied when specimens formed a prominent feature in exhibitions, and new varieties were announced and sought after with as much avidity as the new Roses are looked for at the present day. It may be admitted that the Fuchsia is still extensively grown and sold, but this is chiefly as a market plant, and it owes its distribution rather to the hawker's basket and barrow than to its being pushed as a subject of high culture at the great nurseries, or encouraged as a special subject at shows. There are many reasons for this apparent falling off in popularity. Fashion, perhaps, has something to do with it. Another may be found in its easy cultivation, a disparagement in the eyes of some, though to produce the large pyramidal specimens 6 or 7 feet high and as many through, covered with flowers, that were wont to be exhibited required no mean amount of cultural skill. But a greater reason than these might be found in a deterioration in the quality of modern kinds, and a departure from that symmetry of form, and purity and brilliancy of colour, which constituted two of the most attractive properties of some of the older kinds. I believe that little, if any, real improvement has taken place since the year in which Souvenir de Chiswick, Bo Peep, Tristram Shandy, and others about that date, were brought out. Indeed it is much to be feared that for a knowledge of the real gems of the tribe we must go back to a comparatively remote period, at the rate flowers rise and fall in repute in the present day. However heterodox the opinion may seem, I have little doubt but that the Fuchsia has been on the high road to deterioration ever since the introduction of La Crinoline, and the discovery of the double corolla. The first gave rise to a race of abortions, in which the sections of the corolla stood out almost at right angles with the tube, giving the flower a bizarre aspect, resembling that of a crushed dragon-fly, or some entomological specimen. The other resulted in the production of a crumpled-up mass, which, with the unnaturally thin tube common to all of this type, made up a flower which I once heard very justly characterised as "blobby." Both styles animadverted upon utterly departed from that beautiful, even, barrel-like, or elongated cup form which, issuing from the well-curved sepals, gave such a charming and distinct character to the flower. In another point modern Fuchsias have grievously deteriorated from the types above-named. The sepals have become larger and broader, but their under-surfaces have become coarser—granulated in fact; nor are the tubes so wax-like as formerly, neither are their constitutions so hardy as those of older varieties. Let us take Banks' Glory, for instance. What a splendid subject for culture in any form in or out-of-doors. I once had a plant of it trained fountain-wise against an outdoor wall, which was 6 feet high, and about the same across. Some ashes round the roots, and a mat over it in severe weather, kept it in condition for several years till I left the spot. Prince Albert, General Williams, and several of similar style also, I had trained as standards, planted alternately in a border with standard Rose trees, with excellent effect. They were taken up in winter, and kept in the house and replanted in the following year. Again, what an admirable basket plant, and for similar uses, was Nil Desperandum, and Riccartoni as a climber for conservatory pillars—the flowers small, it is true, but brilliant and smooth as coral. The list might be amplified almost to an indefinite extent had I my notes taken at the time at hand to refer to. Wonderful, a strong growing variety, with sepals of ultra reflection, was a noble kind. So also was Clapton Hero for an ample spreading bush, the foliage being particularly large and handsome. The flower is deficient in the "properties," it is true, yet of choice beauty nevertheless. This kind is still to be seen in country gardens. During my holiday rambles last summer I met with several examples of it at Sheerness and neighbourhood in luxuriant condition not 200 yards from the beach—surely a point in its favour worthy of special notice.

Of the lighter kinds Venus de Medici was a great improvement in all respects on Venus Victrix, upon which some of your correspondents have remarked. For a huge specimen the variety is capable of being grown to Titanic dimensions—I am almost afraid to say the size to which I have seen it attain. Used as an outdoor plant, however, it loses some of the delicacy of its exquisite mixture of tones. Rose of Castile is another robust-growing variety, in colour somewhat like Venus de Medici, but the corolla of a more purple tint. There are very few modern white varieties which surpass for all purposes the old Duchess of Lancaster, or England's Glory. Though Mrs. Marshall is a good market plant, useful and hardy, it can scarcely be said to surpass the two previously named.

The red varieties with white corollas are not to be recommended for outdoor use. The red becomes dull, and the foliage sombre and dark. Besides, they are mostly tender in constitution. Foliage of a character like that of Souvenir de Chiswick, from which I believe most of the golden-leaved Fuchsias have originated, withstands exposure in the open air better than most others. If any readers of the *Gardeners' Chronicle* who are admirers of the Fuchsia will procure samples of some of the good old kinds, whose name is almost legion, they will find them the most manageable of plants indoors or out, in town or country, and Fuchsia culture will receive that impetus which seems to have flagged somewhat of late. *W. D. Prior.*

SOLANUM HYBRIDUM EMPRESS.

FEW ornamental plants are more useful in autumn than the various compact-growing, berry-bearing Solanums, of which the older S. Pseudo-Capsicum and S. Capsicastrum, and the more modern forms, known as Hendersoni and Weatherall's Hybrid, are familiar examples. The plant, of which a woodcut (fig. 72) is annexed, is allied to these latter, and may in fact be regarded as a good selection of Weatherall's strain. Mr. Williams, by whom it is being sent out, says that it is "one of the finest forms of recent introduction." The plant is singularly compact and short-jointed in habit, and is completely laden with the large bright coral-red berries, which are more or less clustered. As these berries take on colour they are said to thrust themselves beyond the leaves, as it were, so as to become fully exposed to view. This dwarf compact habit, and the profusion in which the highly-coloured fruits are produced, will make it an invaluable decorative plant. Our figure represents a branch of the natural size.

PEACH CULTURE.*

UNLESS, perhaps, in the South of England and other favoured localities, the crop from Peach trees grown on the open wall in this country is a most precarious and uncertain one, and in almost every district of Scotland at least one good crop in four or five years is all that can be looked for. This is owing to the variable nature of our climate. The late spring frosts and cutting east winds, which are so injurious to every description of our hardy fruits, are especially so to the Peach, destroying the fertility of its blossom, and causing the disease known as "blister," which is so fatal to the constitution of the tree. This again may be followed by a cold sunless autumn, preventing the proper ripening of the wood, and of course by this means destroying the prospects of a good crop of fruit the following year. No doubt a great deal can be done in the way of protecting the blossoms in spring by fixing up a temporary coping to project some distance over the wall, covering them up with netting or with thin canvas; but all these somewhat troublesome contrivances will avail but little against a searching east wind, and I am decidedly of opinion that Peach culture on the open wall in this country is a most vexatious and unprofitable undertaking.

Many are of opinion that the fruit grown on the open wall is superior both in colour and flavour to that grown under glass. Well, no doubt when grown under favourable circumstances the quality will be excellent, but with careful and judicious management Peaches can be had of as good quality from under glass in June, as any that can be gathered from the open wall in September.

Another way of growing the Peach which has been rather extensively practised of late years is that of erecting large unheated glass structures, known as cool Peach-houses or Peach-cases. In the southern and other favoured districts of England such structures may be all that is wanted to ensure a good crop of Peaches in autumn, but in our northern climate something more than a mere covering of glass is necessary in order to secure a good crop of Peaches annually.

One objection to this mode of cultivating the Peach is that the trees, being protected by the glass covering during the winter months, will come into bloom very early in spring, and are therefore liable to be destroyed by severe frosts. If the winter has been a mild one, it not unfrequently happens that the trees will be in full bloom by the end of February or the beginning of March, a period when 8° to 10° or even 12° of frost is by no means an uncommon occurrence. When this happens, the gardener in charge of the "cool" house will certainly feel that his prospects of a good crop of fruit would be very much brighter if he only had a flow and return hot-water pipe in the house.

How many degrees of frost the expanded blossom of the Peach will stand without injury I am not in a position to state. No doubt much will depend on the state of the atmosphere, but under any circumstances I think there is great danger if the trees when in full bloom are exposed to more than 5° of frost. Another great obstacle to the successful cultivation of the Peach in the cool-house is the frequent occurrence of cold dull weather during the autumn months, in consequence of which it is impossible to get the young wood to that thorough state of ripeness which is one of the most essential conditions for the production of a fine crop of fruit. I am satisfied, from my own experience, that cool Peach-houses and Peach-cases, so far as productiveness is concerned, are but a very slight improvement on the open wall, and there is not one in Scotland but which would be rendered much more productive, and therefore much more profitable, and give far less trouble and annoyance to those in charge by being heated with hot-water pipes.

The best form of house for growing either early or late Peaches is the ordinary lean-to. For forcing, the houses should not be less than 15 feet wide, 16 feet

* Read before the Scottish Horticultural Association, September 3, by Mr. Alexander McKinnon, gr., Melville Castle.

nigh at the back, and 3 feet high in front, with a length of 35 to 40 feet. This will give a convenient and nicely proportioned house, in which may be planted four trees, two in front and two on the back wall. For an early house of the above dimensions there should be at least four rows of 4-inch hot-water pipes fixed along the front and round each end. In fitting up new houses no greater mistake can be committed than that of underheating them. Although it may save some outlay at the time, still it will have the effect in the long run of adding considerably to the coming in contact with the tender foliage of the trees. This is, I think, a most important matter in connection with the early forcing of fruits. Ample ventilation should be provided both for early and late Peach-houses.

Soil.

The kind of soil best adapted for the culture of the Peach is a good rich yellow loam. When the soil is naturally rich, no manure should be mixed with it, except, perhaps, a few broken bones. All other manure for enriching Peach borders should be applied water. In wet localities, and where the subsoil is of a cold, adhesive nature, it will be well to have the bottom of the border concreted before the drainage is put in. This will prevent the roots getting down into the cold ungenial substratum, which is a thing to be very much guarded against, for once they get there the formation of coarse unfruitful wood will be the result.

In making up the borders, good fresh turfy loam that has been cut from an old pasture should be used: 22 to 24 inches will be a sufficient depth.



Fig. 72.—Solanum hybridum, Empress. (see p. 400.)

yearly "coal bill," which is a most important item in the expenditure of most gardens. For mid-season and late houses less heating power is required, three or even two 4-inch pipes being sufficient.

In houses for forcing early Peaches, or, in fact, any other kind of fruit, it is important that the hot-water pipes, instead of being fitted up halfway between the pathway and the front wall of the house—as very often they are—should be placed as near to the front ventilators as it is possible to get them. If they are so placed the cold air which rushes into the house when the ventilators are opened will, by passing over the heated surface of the pipes, become warmed up to the same temperature as the air within the house before either as a top-dressing to the surface, or in a liquid state. When the natural soil of the borders where the trees are to be planted consists of a good deep loam, resting on a dry open subsoil, all that is needed to ensure success is to trench it and add some fresh turfy loam and a liberal sprinkling of broken bones. If, on the other hand, the natural soil is found to be unsuitable, and the subsoil of a cold, adhesive nature, draining and artificial border-making, with all the trouble and expense attending them, will have to be resorted to. In the formation of borders for the culture of the Peach care should be taken to have them thoroughly well drained, so that by no possibility can the roots come in contact with stagnant

The best time for planting Peaches is in the end of autumn, or immediately after they have shed their leaves. Trees with clean, strong, well-ripened shoots should be selected, avoiding those that have been long in the nursery and have been frequently cut down. Those with five shoots, all about the same strength, are to be preferred, for if one side is much stronger than the other, the chances are the trees will never possess that well-balanced form which is so desirable.

Pruning.

The Peach tree may be said to undergo a process of pruning and training from the time it starts into growth in spring till the final pruning takes place in

winter. As the fruit is always produced on the shoot of the previous year, the grand object of the pruner must be to keep a constant succession of young wood throughout every part of the tree, and to maintain an equality of vigour amongst its branches. The first rule to be laid down as a basis for all the rest, is to shorten every shoot in proportion to its strength, and to prune to where the wood is firm and well ripened. By this means all the pithy and unripe wood will be removed. Trees that have arrived at a bearing state should have their strongest shoots shortened to 12 or 14 inches, those next in strength to 8 or 10 inches, and the weaker ones to 4 or 6 inches. Each shoot should be pruned to a triple bud; or if that cannot be found, they must be pruned to a wood-bud alone. A triple bud generally consists of two fruit-buds, with a wood-bud between them. A wood-bud is always known by its sharp conical point. In tying the trees the shoots should be all trained neatly, and nearly parallel with each other, and by all means avoid crowding them.

The disbudding and summer pruning is another important matter in their management. If all the young shoots were allowed to grow, it is evident they would soon become excessively crowded, and soft unripe wood would be the result. It is therefore necessary that all shoots should be removed, except those that are required for next year's bearing. In commencing to disbud all strong foreright shoots, as well as those on the back, should be removed first. In a day or two afterwards a portion of those on the sides of the bearing shoots should be taken off, always leaving the one which proceeds from the lowermost bud and the leading one. Disbudding should be performed by degrees till no more shoots are left than can be fully exposed to the light and air. Care should be taken not to remove those young shoots having fruit at their base. These should be pinched back to two or three leaves. When any of the successsion shoots show too great a vigour, their tops should be pinched off about 15 to 18 inches from their base. When this is done it often has the effect of making them throw out a quantity of laterals. These should be cut away, but if sufficient space can be found one or two of the lowermost ones may be tied in, as, being less vigorous than the main shoot, they generally ripen and bear well. In disbudding and summer pruning the principal object should be to arrange and balance the parts of the tree with the view of promoting an equal distribution of the sap, so that no part attains undue luxuriance or becomes, on the other hand, too much exhausted.

The spur system of pruning the Peach is largely practised by the French growers. This system is one of which I have no experience. It seems, however, to succeed well in the sunny climate of France, but is not likely ever to be much practised in this country.

DISEASES, &c.

Gumming and mildew are the principle diseases to which the Peach tree is subject when grown under glass. The first is observed to occur most frequently in trees that are grown in too rich a compost, and in consequence make strong coarse growths, which have to be frequently cut back. It is also often caused by careless pruning and tying, and in disbudding great care should always be taken not to tear off a portion of the bark along with the young shoot. If this is done gumming is sure to ensue. Although much may be done to prevent it there is no cure that I know of, and if once a tree gets badly affected it had better be taken out and destroyed, as it will never regain perfect health and make a profitable tree. Mildew can be effectually got rid of by dusting the trees over with flowers of sulphur, which should be applied whenever the fungus makes its appearance.

The Peach tree, like almost every other occupant of our gardens, is subject to the attacks of hosts of insects, such as greenfly, red-spider, thrips, weevils, &c. Amongst these its greatest enemies are the greenfly and red-spider. For both these pests the timely application of the syringe and frequent fumigation with tobacco are effectual remedies. Another deadly disease which Peach trees are often subject to is that of "over cropping." Where this is found to exist the best remedy that I know of is a mixture, consisting of "forethought" and "decision of character," to which may be added a little "self-denial." This is to be applied yearly, just after the stoning period. Should this remedy fail, however, the next best thing to do is to call in the assistance of a neighbouring gardener, and explain to him the nature of the disease, then go and lock yourself into your bedroom for the next two hours, during which a thorough cure will be effected.

BOUQUET DAHLIAS.

WALKING through Covent Garden Market the other day I made one flower a special study, not the best flower for bouquet-making either, but one nevertheless that was used in considerable quantities at all the bouquet-shops, and by the hawkers who hang about on the pavement near the church at the west end of the market, ready to surround and push their bouquets into the face of any stranger likely or unlikely to be a purchaser.

The flower to which I allude was the Dahlia, and I asked myself the question—Why could not the women with their baskets have as good Dahlias in their bouquets as Mr. Dickson, Mr. Buck, or any of the other bouquet-makers in the centre row. In Mr. Buck's shop I saw some very pretty bouquet Dahlias made up with the other flowers—a pure white variety, which I took to be White Aster, was made up into the best bouquets. None of the hawkers had these bouquet Dahlias, nor did I see them at the cheap stalls. They all had the large-flowered show sorts. Surely flowers of bouquet Dahlias could be produced cheaper than these lumpish flowers, most of which were but third-rate.

Bouquet Dahlias are infinitely superior to any of the other sections to use for room-decorations and for bouquets; some of the pure white sorts are quite charming. They are very easily cultivated, equally so with the other sorts, and the large number of flowers produced on a single plant is remarkable. I was much interested looking over Mr. Turner's collection at Slough. Several exceedingly fine varieties have been raised there, and it seems that the natural tendency of seedlings raised from the bouquet varieties is to revert to the large flowers. Of course all that have this tendency are rejected, and only the diminutive, well-shaped flowers are saved, and such as are distinct and of decided colours. Some of the varieties have a tendency to grow rather tall, others are not more than 18 inches high. Raisers of new varieties ought not to save seeds from these tall sorts, but should get into a dwarf strain, as the tall sorts are not nearly so useful as border plants.

The soil should not be rich, like that generally recommended for the large-flowered section. A border of light soil that has been well worked but not manured answers well for them.

The following is a list of the best sorts in cultivation at present :—

Lady Blanche. Pure white; one of the most perfect shaped flowers, which are freely produced. This is the best white.

White Aster.—A variety with singularly quilled petals and a most abundant bloomer. A useful pure white sort.

Dove.—A charming flower, a perfect model as regards form; the colour is creamy-white tipped with light purple.

John Sandy. — Produces orange-buff well-shaped flowers on a tall plant.

Burning Coal. —Scarlet and orange, dwarf, free flowering.

German Favourite.—Crimson, shading off to a paler colour at the base of the petals; very distinct.

Laura Rodani.—Shaded deep lilac.

Little Beauty.—Dull red tipped with white, a very free blooming variety.

Little Arthur.—Orange scarlet; an abundant bloomer.

Mademoiselle Valentine Faconet.—Blush striped, and mottled with purple.

Triumph.—Very dwarf plant, with orange-scarlet flowers, free bloomer.

Amelie Barbiere.—Blush, tipped purple.

Lightning.—A handsome plant with scarlet flowers.

J. Douglas.

Natural History.

ARE SQUIRRELS CARNIVOROUS? — Some months ago I observed a squirrel at the foot of a tree, gnawing something, and on my approaching it ran up the tree, carrying with it the object it had been eating, but which in its hurry was dropped, and proved to be the head of a recently killed rabbit. *John Fleming.* [The squirrel is not over-particular either as to fruit or flesh. EDS.]

Garden Operations.

FLOWER GARDEN, ETC.

Upon the careful attention to the necessary operations of the present and part of the next month the beauty of the spring display will greatly depend; it is, in fact, somewhat analogous to the busy time of March and April in regard to the summer display. In the first place the Pelargonium cuttings put in on the open border will be quite ready for potting, and should be put in hand at once. After potting the plants should be placed in the pits in which they are to be kept through the winter, and for a week or two it will be advisable to put on a little heat and keep the lights on to help the rooting process, but at the same time a close and stagnant atmosphere must be avoided, or many will damp off, and as soon as possible a free exposure during the day will be necessary to ensure a hardy and stocky growth to stand the winter.

If propagation has been fairly well attended to and successful there will be no need to break up the display of bedding plants until the advent of frost of sufficient severity to render them unsightly, but if it is necessary to pot any varieties for stock purposes the sooner it is done the better; they should be carefully lifted with plenty of roots, the heads be reduced by the removal of gross shoots, and the plants be potted either singly or in pairs in a size of pot just sufficient to contain the roots. The drainage must be good, and the soil light, consisting principally of leaf-mould, say two thirds, the other third of sand and loam; they will not winter well in large pots nor heavy soil, but with light soil and sufficient drainage any number may be successfully kept through the winter with little trouble if there are proper conveniences, and in spring will afford an unlimited supply of cuttings. After potting the plants should be subjected to the same routine as above recommended for the potted cuttings. It may be desirable also to lift and pot many of the tenderer occupants of the mixed borders requiring to be kept in store-pots through the winter to furnish cuttings in spring, and many of them, if carefully potted, kept close, and shaded for a week, will continue flowering under glass, and form useful accessories for greenhouse and conservatory work, and amongst them Salvia splendens, Heerii, and gesneræflora should be potted without delay.

Any beds which may be cleared by the above potting operations should be at once trenched up, dressed with fresh compost, and otherwise prepared for the reception of bulbs and spring-flowering plants, and as there will be a considerable amount of such work early next month it is advisable to save time by starting on the planting of such beds at once, that is, supposing them to be detached beds, and not a portion of a series of beds to be all planted with reference to a general design. In that case they must be left until the whole of the series are cleared, so that they may be planted simultaneously; but detached beds, each of which will probably have a separate design, may be planted at once; an edging of Sempervivum calcareum should first be put round the bed, and the interior planted according to taste. In this matter both form and colour are to be taken into consideration, and as colour need not be expected until spring, and then principally from bulbs and low-growing herbaceous flowering plants, it is as well to combine with them some of the many varied forms of shrubs, Conifers, &c., grown for the purpose and kept in reserve, such as Retinosporas, all unique in form, and some beautifully coloured; Biota aurea compacta and elegantissima, both beautiful in colour and pleasing in form, and very appropriate for the purpose. Cupressus Lawsoniana argentea and aurea are both well adapted to create variety of form and pleasing combination of colour, and for upright form in combination with the more rounded contour of the above varieties there is nothing more suitable than the Irish Juniper, which is a most effective plant for terrace work; these must all be planted with reference to the bulb display in the spring, coupled with that of Myosotis, Pansies, Arabis, and many other spring flowering and herbaceous plants, and therefore must only be planted sufficiently thick to break the monotonous appearance of flat, half-furnished beds through the winter. I say half-furnished, because where the different varieties of bulbs are planted, they will have a vacant appearance until the spring. With the numerous varieties of bulbs at command there is room for a grand floral display, and to secure good sound bulbs the stock should be secured at once. The sorts required are the different colours of Crocus, the varieties of Scilla, Hyacinths, Tulips, of which Artus and Rex rubrorum are two of the best to stand the weather, and therefore most useful; as a later variety Kaiser Kroon is most beautiful and effective. The various varieties of Polyanthus Narcissus are also very beautiful and effective either in beds or in detached patches in the mixed garden. As the leaves are now falling, a regard to neatness will suggest a frequent clearing up. The lawn grass also will require attention, and on the occurrence of a

dry time no opportunity should be lost of giving the whole of the lawns a thorough mowing over, as, after this, the principal care required will be in sweeping and rolling. The season for planting and alterations is at hand, so that it is as well to get forward with the above, as a certain amount of untidiness must be submitted to when such are in progress. *John Cox, Redleaf.*

FRUIT HOUSES.

ORCHARD HOUSE.—There is not much work required now in this department. The trees in our house have pretty well finished the ripening of their wood. The nights are cold, and as the trees are well rid of insect pests syringing has been discontinued. The ventilation of the house is about the same night and day. The ventilators should not be opened too much, as warm days, aided by the effect of the sun upon the glass, raises the temperature considerably. It is certain that a high temperature by day, say 75° or even 80°, with a fall at night to 50°, is what the trees like best. I also advise careful attention to watering, the roots must be in a healthy medium, neither too wet nor too dry. In some houses the late varieties may not all be gathered yet, and herein lies a difficulty, which, however, can be disposed of by paying attention to the different requirements of each variety. The season commenced with Early Beatrice, followed by Early Louise and Rivers' Early Peaches, but to do these well they ought to have a small house or compartment to themselves; the moisture that must of necessity arise from syringing the later sorts, and keeping the house close and warm, quite destroys the flavour of ripening fruit. I have not been able to give these early sorts the amount of attention required to produce the best results, and hence have not been able to report so favourably of them as some others have done. Finding it was labour lost to attend to them, they have been quite discarded. Hale's Early and Early York Peaches are two varieties that can always be depended upon to begin the season with, followed by Early Grosse Mignonne, a grand Peach, Lord Napier Nectarine, &c. Now most houses are cooler at one end than they are at the other, and the disparity in the temperature can be further increased by keeping the ventilators closed at the warm end. Place the earliest sorts at the warmest end, and those that follow them most closely in their order, finishing off with the late sorts at the coolest part of the house. The very late sorts, of which there are a few between Late Admirable and Salway, some of them clingstones, are seldom worth much. Lord Palmerston is one of the best clingstone Peaches, and it may be tried, as the fruit is showy, and sometimes is fit to eat. Salway is seldom good from the orchard-house, the fruit is very large and good looking, but when it is cut up the disappointment is great. Comet, another yellow-fleshed sort of the same type, evidently a seedling from it, is perhaps earlier, but is also uncertain. It is by arranging the trees in such a way that each of the classes can have the attention which they require at the right time that the best results will be attained. The drier atmosphere and high temperature by day would just be right to ripen the fruits of late sorts. Pear, Cherry, and Plum trees do just as well out-of-doors; the heavy autumnal rains may theoretically be expected to injure the roots, but in practice I have not found such trees suffer from this cause, rather have they assumed a more healthy appearance and masses of active rootlets are formed in the autumn. *J. Douglas.*

ORANGE TREES IN POTS.—The treatment of these plants is very similar from month to month, indeed it varies but little all the year round. I may say that the best sort this year is St. Michael's, and this is a variety that holds its own most seasons. The fruit seems to set better on this sort than it does either on the Malta Blood or Tangierine. The last named and St. Michael's are the best Oranges to cultivate for the dessert in England. The requisite temperature must be maintained now that the fruit is drawing near the colouring period. Still water freely overhead and at the roots. Surface dress as often as it is required with rotten manure and loam, or, what is much better, the compost previously recommended. We have some trees standing out-of-doors, where they have been all the summer. They will now be removed to the shelter of a vinery at rest, or any cool house. They will be placed into the earliest vinery started late in November, where they will remain until the shade of the Vines proves injurious, then they will be placed in a house fully exposed to the sun. *J. Douglas.*

FIGS.—Where the detailed management of Figs recommended in this Calendar has been followed, the early pot trees from which the second crop has been gathered will now be sufficiently advanced for the important operation of root-pruning and potting being proceeded with immediately. Upon examination of the decomposed plunging material and top-dressing laid on when the second crop commenced swelling a mass of roots will be found in a bright healthy state, ready to take hold of the new compost about to be given to them. It is my practice to remove every particle of the decaying Oak leaves from the pit, to work out with a hand-fork all the top-dressing, and to shorten back the strongest roots. The trees are then rearranged and placed on dry bricks in the position they are to occupy the following season. Having satisfied myself that the drainage is in good order, top-dressing, composed of turf, bones, and old mortar, is firmly rammed into the pots; a little water is given to settle the soil, and the house is kept dry, cool, and well ventilated until the time arrives for starting the trees in December. My trees being large and thoroughly established in 20-inch pots, I find this system preferable to annual potting, as they are less liable to cast their first crop of fruit; but where it is thought desirable to increase the root-space a liberal shift may now be given, using the same kind of compost, which must be firmly rammed, to prevent the escape of water, and the balls should be well moistened before the potting is proceeded with. Trees in succession-houses now ripening off second crops of fruit must be kept drier as the days decrease in length, with a little fire-heat to counteract damp, and liberal ventilation on all occasions, as nothing is more unfavourable to ripe Figs than a damp, stagnant atmosphere. Pay particular attention to the exposure of the wood to the full influence of light and sun by allowing the points of the young growths to find their way up to the glass: thin out all soft, useless wood, and remove decaying leaves as they part freely from the trees. Discontinue watering where the trees are established in permanent borders that have been well mulched and watered up to the present time. If, as is often the case with these gross feeding subjects when planted out in rich borders, the growth of the past season is considered too strong, preparations should be made for root-pruning or entire lifting as soon as the crop is gathered. Thorough drainage that will admit of the free passage of the large supplies of water given through the growing season is one of the most important points in Fig culture, and the annual shortening of all strong growing roots in elastic borders is better than attempting to keep them confined year after year in cold brick pits filled with sour, stagnant soil impervious to the influence of light and warmth, and altogether unfavourable to the production of fine luscious Figs worth eating. *W. Coleman, Eastnor.*

STRAWBERRIES IN POTS.—Autumn fruiting plants are so far progressing satisfactorily, and now that the weather has improved for the better abundant crops may be expected. Those plants that are ripening off their fruits will require a sunny aspect, leaving space between them for a circulation of dry warm air, which is so beneficial to their well-being. The plants should be watered early in the forenoon, thereby avoiding the risk of damping off at the collar, which occurs frequently at this season under the influence of artificial temperature, and anything approaching a stagnant atmosphere is also injurious to the fruits as they approach maturity, causing them to become mouldy and damp off. This is especially the case with plants that are shifted about—they will not stand a reduced temperature after being grown in a warmer climate. Further thinning of the fruits should now be discontinued with successional stock if a steady supply is expected up to Christmas. The same plants will continue flowering and fruiting in a uniform temperature, thus prolonging the fruiting season with comparatively little trouble. The early stock of Black Prince and Vicomtesse Héricart de Thury to be started next November will be all the better for protection in case the weather should become warm and moist. The pots being crammed with roots and the crowns and leaves fully developed and ripened are predisposed to start into growth somewhat prematurely on a sudden change of temperature. Keeping the plants well thinned out and clear of worms and weeds with abundant supplies of water should the weather become keen and dry are matters of extreme importance during the close of the growing season. *W. Hinds.*

PLANT HOUSES.

ORCHIDS.—The night temperatures in the various structures must now be reduced, but it must be done in a careful and gradual manner, for sudden changes are at all times to be strictly guarded against. At present not much fire-heat will be required, but since sudden changes of the outside temperature are so liable to occur, it is very necessary to have the means at command, so that when such a time may come upon us we may at once apply such means, and so counteract any injurious results that would be likely to follow a rapid and unusual lowering of the outer temperatures. Though doubtless such occurrences are likely to happen a little later on in the season, it is necessary to refer to them now, so that being forewarned we shall have only ourselves to blame if we do not see to it that we are also forearmed. There is always a very great deal dependent on a carefully managed night temperature, and when during the hot summer months the heating apparatus is for a while dispensed with altogether, how very fresh and pleasant and enjoyable our houses appear in the early morning; the fire-heat being absent the dry arid feeling so often observed is for the time banished whilst a slight dewing on the upper surface of the leaves seems to impart health, vigour, and colour to every plant; at the same time such natural damping is a sure preventive to the dreaded black or yellow thrips. Let the readings for the present be about as follows—East India-house, 65° to 68°; Dendrobium-house, 58° to 63°; Cattleya-house, 58° to 60°; Odontoglossum-house, 53° to 55°. Whilst so many plants are still in a state of active growth the amount of water required at the roots will still be considerable, for the roots when in a healthy condition, and breaks and growths growing freely, require and draw up much of the moisture in the soil, the supply of sap and formation of fibre being dependent in a large measure upon such a ready means of obtaining the needful support. It must, however, be borne in mind that the diminishing amount of sunlight and heat, and also a less quantity of air being admitted from the outside, will cause the houses to be less dry now than during the summer months, therefore the watering at the roots will not need to be repeated so often as during the hot season. The majority of the Vandas, Aerides, and Saccolabiums are still growing freely and their fleshy roots with green living points are pushing through the soil or around the hard surface of the pots whilst new roots start away from the stems of the plants: these must be supplied with moisture but must not be kept so continuously damp as during the hot months of July and August. Among this class, the greater part of which have already bloomed this season, mention must be made of Vanda Cathcartii. For a number of years this was known to many only by name, but now, thanks to enterprising Indian collectors, it is frequently to be met with. This species is very distinct in its manner of growth, the leaves being short and rather broad, and fixed much further apart on the stem than is the case with any other variety. Healthy and vigorous plants will now be showing their flower-spikes, one or perhaps two spikes according to the strength of the plant, each spike bringing from two to four flowers each. From the time the spikes first appear to the formation and expanding of the blooms many weeks elapse, but patience and care will certainly be rewarded, and when the flowers are open the singular form, more especially of the labellum, and at the same time the beautiful marking and colours, will be sure to give much pleasure and excite the curiosity of those who gaze upon it. See that all the plants of the different Phalænopsis are regularly sponged and carefully looked to, so that as the new spikes appear or tender roots push away they are not destroyed by the lurking snail or woodlice. P. Lowii in baskets will now be in flower; if sufficiently strong this will often produce two or three laterals on a spike. *W. Swan, Fallowfield.*

THE BEET SUGAR INDUSTRY.—At a late sitting of the American National Agricultural Congress, held at New Haven, Conn., Mr. E. T. Gennett, of Maine, gave a brief history of the Beet Sugar industry in Europe; of the attempts to establish it at Northampton in Massachusetts in 1836, at Chatsworth and Freeport in Illinois, in Wisconsin, in Iowa, and in California—with reasons for non-success, and of the subsidy now offered by Maine for its initiation in that State. He says there are 300 acres planted in Beets by 1000 farmers of Maine for this experiment, and not less than 3000 tons will be harvested. Analyses have already been made, which show as large a percentage of saccharine matter as is contained in the Beets of Europe. Sugar begins to develope after the expiration of half the period of growth. Three analyses of plants of seventy-six, sixty-six, and forty-six days' growth respectively, were made August 1, and again on the 15th, with the following results:—

August 1.		August 15.	
Solids.	Sugar.	Solids.	Sugar.
10·8 per cent ..	6·7 per cent	13·5 per cent ..	9·7 per cent.
11 per cent. ..	6·9 per cent	13·8 per cent. ..	10·7 per cent.
8·8 per cent. ..	5·3 per cent.	11·4 per cent. ..	8·4 per cent.

He is confident of success, and hopes to see half a million acres appropriated to Beet culture, or rather, that it shall occupy a fourth part of 2,000,000 acres in proper location, and aid in enforcing the practice of subsoiling, tile drainage and high culture generally, giving wealth to multitudes and an impetus to improved husbandry.

THE FARMERS' ALMANAC.—We learn that the copyright of the well-known *Farmers' Almanac*, which has been published for many years by Mr. Ridgway, of Piccadilly, has been purchased by Messrs. Cassell, Petter & Galpin, and it will be incorporated with the *Live Stock Journal Almanac*, which will be published henceforth under the title of *The Live Stock Journal and Farmers' Almanac.*

"DARWINIAN."—Our village grocer (great floriculturist): "Most extr'or'nary thing, sir. Last year I had some bacon in my shop that went bad durin' that hot weather, and I buried it in my garden. You'll hardly believe it, but all my Asters this season come up streaky!" *Punch.*

THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 28, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Sept. 30—Sale of Dutch Bulbs, at Stevens' Rooms
WEDNESDAY, Oct. 2—Sale of Dutch Bulbs, at Stevens' Rooms
THURSDAY, Oct. 3 { Dresden Floral Society's Autumn Exhibition (five days)
SATURDAY, Oct. 5—Sale of Dutch Bulbs, at Stevens' Rooms

"A LARGE handsome variety," suitable for exhibition. "A large new variety of fair quality—will be a fine sort for showing"—the fair adjective, by-the-way, when applied to something that has to be "shown" or eaten, being a sort of apology to prevent the kind described being altogether condemned for its worthlessness in flavour or other particulars. These and similar terms have of late years become fashionable in describing new or little known garden productions. When applied to new varieties of Roses, or other plants, or to edible fruits and culinary vegetables, they are mischievous, and serve no purpose but individual interests in puffing the prolific crop of worthless varieties ever forthcoming to meet the insatiable crave for something new. The reporters, who can only judge by what they see before them, are not to blame for this, nevertheless disgust and disappointment are too often occasioned by loss of time (often years in the case of fruits), in addition to having bearing trees of sorts that are found so indifferent that they have to be removed to make way for well-proved kinds that never ought to have been displaced by the new-comers, and which necessitate a repetition of waiting until they attain the requisite age to bear.

With culinary vegetables it may be said that only a season need be lost in proving them; but those who have been induced to give, say 5*s.* or 7*s.* 6*d.*, for half or a quarter of a pint of new Peas, or from 5*s.* to 7*s.* for 1 lb. of a new variety of Potato, are slow to admit, by discarding them, however bad, that they have been duped, and generally feel disposed to try them another year or two, in the hope that fresh soil, or a difference in the weather, may improve their quality. During the interval the wretched trash finds its way in all directions amongst imitating cultivators, until it has run its round through the country, and gives place to others equally bad. The purchasers of high-priced useless garden novelties, French Roses in particular, appear to be wholly beyond the influence of the wholesome principle embodied in the old adage of "once bit twice shy."

In the case of fruits we must admit that, in estimating their merits, a fine appearance in colour, as also size, deserve all the consideration due to them; but unless accompanied by good flavour they are useless, for the simple reason, that in the different species of fruit in general cultivation there are already plenty of varieties possessing a combination of all the above essentials.

As to culinary vegetables mere appearance is of the least possible consequence in determining their worth. We are often reminded about the improved state of horticulture at present as compared with what it was in times past; but if the last generation of gardeners were again in the flesh, it would be something new to them to be told that kitchen vegetables were grown for their looks. There is another point connected with the subject which requires a word. If such things as culinary vegetables, however handsome in appearance but lacking the indispensable accompaniment of good eating properties, are exhibited continuously in considerable quantities, why is it? Simply because they frequently receive the awards in preference to others less taking in their looks, but better for the purpose for which alone it is any use to grow them. This being the case, who are they who thus give the precedence to appearance in place of real merit? Not those who know what they are about, or that have any pretensions to perform satisfactorily the duties they undertake. Such awards are doubly opposed to the interests of horticulture, discouraging and perplexing to exhibitors who from a commonsense view grow for showing those kinds they know to be best for use, and calculated to mislead those lacking experience or opportunity to decide what to grow and what to avoid.

We have never questioned the important part that horticultural exhibitions play in furthering the advancement of gardening, through the teaching exemplified by the awards made in the different departments, not only to the best examples of their respective kinds of fruits, vegetables, plants, or flowers competing, but very much more from the preference given to the best varieties over such as are inferior for the respective purposes for which they are grown. Where there is any deviation from this in the awards made on the exhibition stage those awards at once become mischievous in their influence, and the societies accountable for them do injury to the interests of the pursuit they are supposed to promote. Yet despite all that can be said in warning, and the dearly bought experience of the many who in their gardens are always ready to discard well-proved old friends for uncertain new ones, their forgetfulness of the price they have paid for their inconstancy, combined with the fascination which the development of a new plant of any kind has with many people, induces them to keep on moth-like undergoing the self-inflicted singeing process. And as demand is the primary regulator of supply it follows that there is no likelihood of any falling off in costly novelties, that would be extremely dear if to be had for nothing. Here is felt the misfortune of the Royal Horticultural Society being crippled for means and room to do a vast deal more than the useful work it is now doing in the way of proving, not only the dissimilarity of the things under trial, but also in deciding upon their merits. This is a work of national importance, and of too much consequence to be left to individuals, or companies who would always lack the confidence of the public to such an extent as to render their work of little use.

Any system of trials that could be undertaken in any single locality, even under the most skilful supervision, would not be conclusive as to a plant, either species or variety, succeeding or not in other parts of the kingdom; but as far as relates to the quality of such things as culinary vegetables there could be no mistake, for a Pea if wanting in flavour grown in one place is not likely to be right in this respect when cultivated elsewhere. Potatos are somewhat different, being, as every one knows who has had only limited experience with them, considerably influenced by the nature of the soil; but it is merely a difference in degree, for a variety that is soft, soapy, and deficient in starch when grown even in soil not suited to the Potato, is rarely anything above second-rate when grown in the best Potato land. Such instances as the above meet the objection made that trials as to the merits of all vegetables could not be satisfactorily carried out by the Horticultural Society, but it is to be hoped that the time is not distant when it will be in a position, and likewise disposition, to show the fallacy of such ideas. The raisers of really meritorious new varieties of fruit and vegetables, which now stand in the proportion of the odd grain of corn amongst a large quantity of chaff, would get their due, and the public would have confidence in what was offered them.

—— A REMARKABLE OLD ELDER TREE.—The remarkable old Elder tree pourtrayed on the opposite page (fig. 73) is the largest that has ever come under our notice. It stands near to the mansion at Thorpe Perrow, Yorkshire, the residence of Mark MILBANKE, Esq., where it attracts the notice of visitors by reason of its fine arboreal character, so different from that of the ordinary Elder trees. We have not its exact measurements, but its height is given as 35 feet.

—— FUNGI, EDIBLE AND POISONOUS.—A correspondent has pointed out to us the misleading statements printed under the head of "Champignon" in CASSELL'S new *Domestic Dictionary*. The Champignon is there termed "Agaric oreades of botany," and it is stated that "of the varieties that grow in rings only one is unfit for food, and this" (Agaric dealbatus, *sic.*) "may be known by its strong unpleasant smell, &c." Now, every beginner in fungology knows that many highly dangerous species, including a close ally of the Champignon, grow in rings, and one (possibly the most dangerous of all), Agaricus fastibilis, often bears a striking resemblance to the true Mushroom. As for Agaricus dealbatus being unfit for food, it is, on the contrary, well known to be one of the best and safest of all the edible species, and its odour is not strong and unpleasant, but mild and sweet.

—— AN EARLY FROST.—Mr. MERRITT, Kimpton Hoo, Welwyn, reports a severe frost in that locality on the morning of the 24th. Vegetable Marrows were completely cut down, and Scarlet Runner Beans blackened.

—— SUMMER IN LONDON.—The summer, says the *Times*, may now be said to be over, and the Registrar-General's returns enable us to state the number of the hours of sunshine recorded at the Royal Observatory, Greenwich, in the four months from the middle of May to the middle of September. In the fortnight ending June 1 there were 65.7 hours of sunshine; in the four weeks ending June 29, 181.4 hours; in the four weeks ending July 27, 148.9 hours; in the five weeks ending August 27, 175.3 hours; and in the fortnight ending September 14, 71.3 hours. The total is 642½ hours, averaging within a fraction of 38 hours a week, or 5½ hours a day. In the week ending the 29th of June there were 73.9 hours of sunshine, or nearly two-thirds of the whole time the sun was above the horizon. That was the hottest week London has had since that ending the 19th of August, 1876.

—— THE ROYAL GARDENS, KEW.—Here is a piece of information which will be new to our readers. Speaking of the beautiful park of the Tête d'Or at Lyons, which is open to the public from 5 A.M. till 11 at night, a writer in the French journal *La France*, tells us on the authority of a well-known English horticultural journalist that the magnificent gardens of Kensington Museum (*sic*), of which Englishmen are so proud, are only open one hour a day. Of course our colleague wrote nothing of the kind; but it is an amusing instance of unwitting perversion, and adds another illustration to the many which show the ignorance of French journalists of English ways.

—— A BOTANIST'S STAFF.—Our Dutch contemporary, *Sempervirens*, describes a stick, which, if strong and well made, and provided with trustworthy instruments, must be a boon to botanists on herborising excursions, or to naturalists generally. The handle of the stick has a compass in it, and cunningly arranged in various cavities are a thermometer, small collecting bottles, magnifying glass, and knife, while a screw at the end permits the attachment of a spud, a small hatchet, or a geological hammer. We have not enumerated all the wonders of this stick, owing to our ignorance of the Dutch language, but we hope the maker, M. BODENHEIM, 167, Kalver Straat, Amsterdam, will speedily find some agent in London, for we doubt not that, if well made and not too heavy, many country gentlemen, foresters, and botanists would be glad to avail themselves of such a *multum in parvo*.

—— ARENARIA GLABRA.—The plant known under this name is exceedingly dwarf in growth, very dense, of a dark green, and very hardy. It is much used at Hutton Hall for carpet-work and for covering rock-work, and appears to be in some respects superior to the little Mentha, now so much used in gardens. At Heckfield, Mr. WILDSMITH is using the Mentha as

edgings to raised embroidered beds, finding it to be both more effective and durable than Sempervivum calcareum, or any other hardy species. The Arenaria will be found very useful in a similar capacity, and like the Mentha will bear clipping with the shears. It makes a good groundwork both for winter and summer.

—— The South American Cow-Tree.—Every now and then some well-known economic plant or tree—the produce of which, though perhaps largely used in its native country, is scarcely known in this—comes to the fore with various suggestions as to its probable application and development. Just now the Cow-tree (Galactodendron utile) of Venezuela is attracting fresh attention, in consequence of its appearance at the Paris Exhibition. It has been recommended for introduction and cultivation in many parts of the world where it is not native, and where a constant supply of milk is either a necessity or would be an advantage. Among other places advocated for the acclimatisation of the Cow-tree is our newly-acquired possession, Cyprus.

—— Asphalte Walks.—As the introduction into gardens of asphalte as a material for the formation of garden walks is of frequent occurrence, it may be remarked that the surface can be annually renewed by taking advantage of dry weather to give them a good coating of tar, and spreading over it a dressing of coarse sand. This makes the paths look as good as new, and the blending of the sand with the tar takes from the black and uncomfortable appearance of the bare asphalte. The tar dressing should be applied when the weather is fine, so that it can become well set before rain falls.

—— Helianthus cucumeritolius.—In some places this new introduction is flowering very finely this season. It is a fine object in the mixed border when well grown, the large golden flowers being very fine, and of a striking character. The wet summer may have had something to do with this fine character, and no doubt it is a plant that will well repay good cultivation.

—— The Cool Orchids at the Pine-apple Nursery.—At the Pine-apple Nursery the ability of the less heat-requiring Odontoglots to thrive with cool airy treatment is tested to the full, for nowhere have we met with them so fully brought under the influences of a continuous supply of air, with an absence of artificial warmth, during the principal growing season as they are here; and yet the plants are pictures of stout healthy growth, the leaves having the deep green shade with the peculiar bronzy tinge on the edges, and the firm plump condition and brown colour of the pseudobulbs inseparable from rude health. The same applies to Masdevallias, treated in like manner, the large stout growths at once show they enjoy the conditions they are subjected to. The principal objection that used so often to be urged against the cultivation of Orchids



Fig. 73.—Remarkable old elder tree at Thorpe Perrow. (see p. 404.)

was the damp hot atmosphere in which many require to be grown; and we find numbers fond of plants who are so imbued with this idea that they cannot realise the fact that this most beautiful section of the family can be seen and enjoyed with no more inconvenience than that of entering an ordinary greenhouse in summer; and in winter the atmosphere of a cool Orchid-house is equally unobjectionable as to heat or humidity.

—— PYRETHRUM ULIGINOSUM.—One of the finest autumn-flowering hardy plants we know of is this handsome species. Well established clumps attain a height of 4 to 6 feet, with deep green foliage, which contrasts well with the large white, golden-eyed blossoms. It is very suitable for shrubberies, &c., and one of the finest beds we have seen consisted of a centre clump of this plant, next to it the brilliant Lobelia splendens, a third row of the showy bright-orange coloured Rudbeckia speciosa, and an edging of the white feathery flowered Heuchera americana. Such a bed as this would be a remarkable addition to any lawn, and tend to relieve the monotonous effect of dwarf bedding plants.

—— LEPTODACTYLON CALIFORNICUS. We seldom or never see this treated as a pot-plant, nevertheless as so grown in Mr. FRASER's nursery at Lea Bridge it is a little gem, forming neat little plants 6 to 8 inches high with densely packed linear-pointed leaves like those of a Heath. The flowers are of a pale rosy lilac hue, with a slender tube about ¾ inch in length and a limb equal in diameter, and divided into five oblong lobes.

—— CHEAP GRAPES.—When good wholesome well-ripened Grapes can be bought in London streets at 3*d.* per pound we may well ask in wonder, what sum does the grower receive? Of course these are Grapes of foreign growth, but this adds somewhat to the wonder, as the cost of transit over land and sea must be considerable, added to which is the expense of packing, the profits of agents or dealers, and, finally, the profits to the costermonger, the which, if not considerable, must add something tangible to the sum total of 3*d.* We purchased these luscious products one recent evening in a crowded thoroughfare where they were being sold rapidly and much appreciated, so that it was evident the taste for fruit which is innate in man is not entirely quenched by fiery compounds in the mouth of the low-class Londoner. Here was also an excellent example of the usefulness to the poor of the much-abused "coster." Whilst he was giving honest weight for 3*d.* and 4*d.* per pound the neighbouring shopkeepers were offering similar fruit at 6*d.* and 8*d.*, which prices, low as they were, were perhaps prohibitive to not a few who were then gathering together, as best they could, the elements of their Sunday dinner. We are often told that we ought to grow more fruit and pay the foreigner less, but could we afford to grow even the poorest outdoor Grapes in this country, even if they would ripen fit for eating, and sell with profit at such a low price? The greatest force is however found in the fact that our climate will hardly give us enough of really hardy fruits, least of all such as need an abundance of warmth and sunshine to bring them to maturity. Rather we ought to be very thankful that through the instrumentality of the foreigner and his plenteous sunshine that good wholesome fruit can be sold in our crowded streets at such a very low figure. Our Grape growers can produce under glass the finest fruit to be seen in the world, but the cost of production is great, and therefore beyond the reach of the poor of our great towns, but who are in this respect even more favoured than are the denizens of the grapeless country districts.

—— DAPHNE INDICA RUBRA.—At the back of a cold frame in Messrs. T. BUNYARD & SON's nursery at Maidstone may be seen a line or hedge of plants of Daphne indica rubra which some twelve years ago were planted out for stock when there was a growing demand for it. During the summer the frame is occupied by plants, necessitating the removal of the lights, and in winter and spring it is occupied by half-hardy bedding plants, the plants being plunged in some material for protection, when the lights are placed on the frame and any protection necessary is supplied by mats. Soon after Christmas flowers are gathered from the Daphne, and the supply is kept up till April. It is thus a most useful lot of plants, for in addition to supplying flowers when they are most valuable, an ample provision of cuttings for propagation is also afforded.

—— CEANOTHUS AZUREUS GRANDIFLORUS.—This is a very fine form, blooming freely, with large flowers of an excellent hue of colour, and can be made into a good pot-plant. The forms of Ceanothus are not so much planted as wall plants as they deserve to be. We have in our minds eye a London villa residence against which was planted a few years ago a specimen of C. rigidus which does best against a wall. This has grown into great size, and every year yields a rare crop of flowers. It is on the north-east side of the house, and grows and flowers remarkably well.

—— GERANIUMS AND SNAKES.—Under this heading a contemporary draws attention to a new value for Geraniums. In South Africa, we are told, the Geranium has the reputation of being proof against snakes, which, it is said, avoid the plant as though it were poisonous. We are reminded, that though the flowers of the Geraniums are scentless, the leaves contain a quantity of volatile oil with more or less pungent odours, and it is stated that no snake will come near a bed of these flowers. A missionary in South Africa has surrounded his house with a cordon of Geraniums, with the result that it is never visited by these unwelcome intruders. To the Kaffirs is attributed the discovery of this property in the Geranium.

—— FOREST CONSERVANCY IN MAURITIUS.—We learn from the *Mercantile Record* of Port Louis, that since Sir ARTHUR PHAYRE's appointment as Governor of Mauritius he has taken a deep interest in the question of putting the island under a thorough system of forest conservancy. His previous experience on all matters appertaining to forestry, acquired during many years' residence in British Burmah, has given him unusual qualifications for dealing with this question, with the result that application has been made to the Indian Forest Department for an experienced forest officer, who, after a year's residence in Mauritius, will furnish a detailed report on the present state and future prospects of the forests; and "at the same time initiate a system of forest conservancy which, while it shall be complete, and of general and material utility, shall also, it is hoped, prove remunerative."

—— AMPELOPSIS TRICUSPIDATA.—There is a very fine example of this in Messrs. T. BUNYARD & SON's nursery at Maidstone, and it is supposed to be one of the first plants distributed (under the name of Veitchii). It is growing against a shed in combination with the Golden Cloud Ivy, and they both "run" well together; for, although the Ampelopsis makes a very strong growth (owing, it is supposed, to the roots having found their way into a disused well), and to a great extent hides the Ivy during summer, it does not affect its colouring, and by-and-bye, when the leaves of the Virginia Creeper drop in the autumn, the golden hue of the Ivy shines out clear and distinct, and remains so during the winter and spring. Mr. GEORGE BUNYARD states that the young growth of the Ampelopsis are in great demand for the adornment of epergnes, for which it is well suited.

—— THE PAMPAS GRASS.—The ordinary male and female forms of Pampas-grass, Gynerium argenteum, have, from their first becoming known, proved to be amongst the very best decorative plants ever introduced to this country. There is scarcely a position in the pleasure-grounds where they are out of place, looking well with a background of deciduous or evergreen trees, shrubs, or a wall, standing as specimens on a lawn, or arranged by the side of water, where in no place are their graceful arched leafage and elegant silvery plumes seen to better advantage. Yet in some situations where it would be desirable to plant this Gynerium, its majestic stature is such as to render it too large, as there are immense numbers of people who delight in a garden, yet are obliged to be content with a small one, where the usual forms of this splendid grass are too big, and consequently cannot be employed; and even in large places there are many positions where a smaller growing plant would be more suitable. In such, the handsome dwarf variety shown by Mr. C. NOBLE, of the Sunningdale Nursery, at the last meeting of the Royal Horticultural Society will be welcomed. When grown to its full size it appears that the plumes attain a height of about 5 feet; in fact, it seems to be identical with the original forms first introduced, with the exception of its only attaining about half the size, and is equally free-flowering. We look upon it as a very elegant and useful plant, and have no doubt that as it becomes known it will be extensively used in many positions such as we have indicated its adaptability for.

—— CALCEOLARIA PAVONII.—Amongst half-hardy wall plants few form such striking objects as this beautiful and highly decorative species at this season, and indeed for the past two months. Under liberal treatment it will attain a height of 6 feet, with large branches bearing a profusion of yellow flowers, which much resemble the English Lady's-Slipper in miniature, the leaves triangular and wrinkled, with dilated and stem-clasping leaf-stalks. Like other Peruvian plants it is somewhat tender, but if slightly protected in severe weather it will survive our ordinary winters. Though introduced more than thirty years ago it is rather scarce in gardens at present, but deserves to be better known.

—— HOLLYHOCKS.—It is to be that hoped the wet season may have done something to check the disease in the Hollyhocks. Mr. W. CHATER, the veteran Hollyhock cultivator, of Saffron Walden, writes to say that his flowers have been exceedingly fine this season, and he thinks he never had a finer show of bloom, and though not quite free from disease, the plants have been much cleaner this season than they have for some time past. Mr. CHATER finds it necessary to keep his plants out-of-doors almost wholly, but while this interferes to a great extent with the production of young stock it serves to hold the disease in check, it is hoped, till such times as a return to the old modes of propagation can be resumed.

—— PEACHES IN AMERICA.—From some recently published statistics of Peach culture in the United States we gather the following. The Peach, it seems, can be successfully cultivated in the open air anywhere south of lat. 42° N., and under an altitude of 9000 feet; it is not, however, a sure crop north of 40°. Some parts of the country are much better suited for Peach culture than others. Among the best stand the Chesapeake and Delaware peninsula. More Peaches, it is said, are produced within this circuit than in any other territory of the same extent, owing to the entire suitability of the soil and climate. It is estimated that there are about 5,000,000 Peach trees of all ages between the Delaware and Chesapeake and the Brandywine and Cape Charles. The area over which these extend is about 50,000 acres, and the land is of the best and most productive nature. Of fresh Peaches, sent away in baskets in one year, official reports show 2,456,876 baskets sent by land to other parts of America, and 543,124 baskets shipped by water, making an aggregate of 3,000,000 baskets. But all the Peaches produced in these districts are not exported in a fresh state, large quantities being both canned and dried. Six canneries are described as being in operation in Delaware, and probably an equal number in Maryland, turning out over 1,000,000 cans of fruit. "Taking a series of years together, it is found that Peaches are as certain and remunerative a crop as any other that can be grown." The peninsula has the capacity for growing at least 10,000,000 baskets, for which a ready market is found in Pennsylvania, New York, and New England, as well as in various other parts of the world. The samples of canned Peaches exhibited in the present Paris Exhibition from the United States seem to have been highly spoken of.

—— DENDROBIUM WARDIANUM. — The way in which Dendrobium Wardianum has this summer grown with Messrs. E. G. HENDERSON & SON at the Pine-apple Nurseries without fire-heat at once shows that this splendid and free-growing species will succeed perperfectly in a lower temperature than it is usually subjected to. A large number of plants were started into growth in an intermediate temperature in February, where they remained until the weather was sufficiently warm, when they were removed to the large conservatory, where they made and completed their growth without any fire-heat at all. The pseudo-bulbs are not so long as when grown in a hotter temperature but very much thicker than we

usually see them not unlike, but quite up to the size of imported bulbs. Some are now showing bloom freely, having the flower-buds quite prominent, and will evidently produce quite as many flowers as when treated so as to produce a much greater length of the pseudobulbs, which latter we look upon as anything but an advantage. It must be borne in mind that the fluctuations in temperature betwixt sunshine and cloud as well as variations in the weather are much less in a very large structure like the immense conservatory at this nursery, than in a small house such is as usually devoted to Orchids, which would frequently need the use of fire-heat when it might be dispensed with where a great body of air is enclosed. Comparatively slight shade was used. D. crassinode appears to require more warmth than the preceding. The very imperfect information often given by those who discover and collect Orchids and other plants as to heat and other conditions under which they are found growing naturally, is very often the cause of their being subjected to treatment at the hands of the growers in this country that they do not require or like.

—— Select Polygonums.—Of the numerous species of Polygonum now in cultivation, the few enumerated below are the most desirable, and may be included even in the choicest collection of hardy plants. All, with the exception of the early flowering P. alpinum, are now in full beauty, and will continue a long time in good condition. P. cuspidatum, a native of Japan, may probably be better known under its synonym, P. Sieboldii: it is the handsomest of all, forming fine specimens nearly 10 feet high and as much across, the stems 8 feet to 12 feet long, purple spotted, with the upper part much branched and spreading. The small panicles of tiny white blossoms are borne in great profusion from the axils of the oval, pointed leaves. It is seen to the best advantage when planted singly on lawns, &c., or at the margins of shrubberies; in this position and planted in good soil it forms one of the most effective hardy plants we have. When single specimens are the object in view, care should be taken to remove all the, suckers which spring up during the growing season. The variety compactum is a dwarf form not more than 3 feet, and much less branched; it is very suitable for the ordinary borders. P. sachalinense, a Siberian species, though not producing such a profusion of delicate flowers as the last, in nevertheless a stately foliage plant. In large specimens the stems are fully 14 feet long and, as in the preceding, arch in a very graceful manner. The leaves are oval and pointed, 9 inches to 1 foot in length, and 6 inches broad. The small panicles of greenish white flowers are borne at the tips of the branches and are not very showy. P. alpinum, a well-known and old inhabitant of gardens, is also very handsome, growing about 3 feet high and producing in early spring large panicles of snow-white blossoms, which last a long time and are very suitable for cutting. P. amplexicaule, with its white variety oxyphyllum, is now very showy. It is about 3 feet high, with stem-clasping leaves, and an abundance of long racemes of a deep red colour in the type, and white with purple anthers in the variety. Native of the Himalayas. The stems of all the preceding perish annually, in the two following they are persistent, and with evergreen leaves. P. vaccinifolium is a beautiful little trailing plant, from the Himalayas. It has small Vaccinium-like leaves, and produces numerous dense racemes of pink flowers. It is well adapted for rockwork, allowed to hang over the ledges of the stones. It also forms a charming basket-plant for a cool greenhouse, as it lasts many weeks in flower. P. affine (syn. P. Brunonis) is a better known species, also inhabiting the Himalayas. It forms compact tufts, with spathulate leaves, with slightly toothed margins, and whitish on the under surface. It produces numerous dense racemes of blossoms of a deep pink colour at first, and changing to a lighter hue. It is very suitable either for the ordinary border or for rockery.

—— Tea Roses at Lambton Castle.—In horticultural practice there are many instances continually coming under the notice of the intelligent observer showing the large number of exceptions existing in plants that are found to succeed under conditions the complete reverse of that which appears to accord with their natural requirements. Yet there are not found wanting those who ignore, or shut their eyes, to this, and stubbornly persist in advocating a uniform or analogous course of treatment in the cultivation of all plants similar generally in their requirements. Any one imbued with such ideas might learn a lesson from the Tea Roses planted out in the Pine stoves at Lambton, where they occupy the walls on the north side, with stems as thick as a man's wrists, pictures of health, and as Mr. Hunter informed us producing hundreds of flowers each winter and spring. Here it might be supposed they would be excited into continued growth, until their vitality was exhausted, yet such is completely the reverse, for despite the great amount of heat they are in such a situation necessarily subject to, they continue to thrive satisfactorily, appearing to recruit themselves by, for a time after blooming, making little growth—similar to that which occurs when they are grown in much cooler quarters. There is something very much like this at the Langport Nurseries, where Messrs. Kelway & Son have a quantity of large bushes of most of the leading varieties of China Roses planted out in beds where they are close to the glass in several houses that during the summer are devoted to Cucumber growing for seeds. The Roses produce quantities of flowers for cutting during the winter and early spring, and immense numbers of cuttings in the summer. For this purpose the shoots, if drawn up weakly, as many might suppose would be the case under the conditions they are subject to in company with the Cucumbers, would be useless for propagation.

—— The Gladstone Peach.—This Peach fine was one of the late Mr. Rivers' latest seedlings, and has proved a most useful late variety, ripening after the Princess of Wales; it is of good quality, and an excellent bearer. Mr. George Bunyard, who has obtained fruit this season from maiden trees in pots, speaks very highly of it, as also of Advance Nectarine, one of the most recent that has emanated from Sawbridgeworth. It is very early, large and handsome, of excellent flavour, and a short-jointed habit of growth. Advance is said to be the earliest of the green-fleshed Nectarines, ripening a fortnight before Lord Napier.

—— Escallonia montevidensis.—Against a wall this comes very fine; in fact it is necessary it should have such a position. It comes covered with large white trusses of bloom, their boldness of character giving the plant a most striking appearance. It is a hardy decorative plant, well meriting an extended culture.

—— Sugar from Water Melons.—A new source of sugar for commercial purposes is reported from California, obtained, it seems, from Water Melons. It is described as being at present only an experiment; nevertheless, a company with a large capital is about to commence operations in California, and though it is candidly said that chemists and manufacturers are rather doubtful of their financial success, the company declare that they can obtain 10 per cent. of sugar from the juice, alcohol from the pulp and rind, and 25 per cent. of oil suitable for table use from the seeds.

—— A New Remedy for Hydrophobia.—From the *Journal of Applied Science* we learn that the monks of the Convent of Phanesomene in the Island of Salamine (Greece), have discovered a new remedy for hydrophobia in the shape of a powder prepared from the root of Marsdenia erecta by mixing it with equal parts of the powder of various species of Mylabris, allied to the ordinary blistering fly and having nearly the same properties. The remedy is administered internally to the person who has been bitten, the wound having been previously cauterised.

—— Bouvardias are well done at Henderson's Pine-apple Nursery. The system of treatment these most beautiful sweet-scented and continuous flowering plants are subjected to here is to turn them out of the pots in spring in good rich prepared soil. In this they are grown on through the summer, requiring very much less attention than when kept in pots; at the same time attaining, as is almost invariably the case when the roots have an opportunity of helping themselves in a way not possible when confined, much more size and strength of the individual shoots, producing proportionately larger bunches of flowers as well as more of them. The plants have recently been lifted and potted, and kept a little close until the roots begin to move. We are anything but advocates for indiscriminate planting-out, as there are many objections to it; but in the case of such things as are grown up to a flowering state in a single season and will bear taking up and potting without loss of leaf, as do these Bouvardias, planting-out has considerable advantages.

—— Herbaceous Plants.—At this season we look on the loiterers almost with as much interest as on the early visitors in spring. We still have some fine plants to remind us that winter has not yet arrived. Among these we mention Pyrethrum serotinum, a fine plant for the back rows of the herbaceous borders, 5 feet high, with narrow slightly-toothed leaves and large white flower-heads like those of the common Ox-eye Daisy or of P. fruticosum, which is such a favourite with the French. We saw fine plants of P. serotinum and of Aster leucanthemum, which is very like it, lately in the nurseries of Messrs. George Paul, of Cheshunt, and Fraser, of Lea Bridge.

—— Dimorphanthus mandshuricus.—The extraordinary large and deeply divided leaves of this handsome shrub, added to large heads of flowers, produce a striking and pleasing effect on the lawn at Dalkeith, where at the present time it is an object of great interest to visitors. It has only been planted three years, yet has attained the height of about 8 feet, and is growing luxuriantly. One of the leaves, which Mr. Dunn has been good enough to send us, measures 4 feet in length, including the footstalk, and about 3 feet in width. Whether it has flowered in Scotland before, our correspondent is unable to say; but this is certainly the first time of flowering at Dalkeith. We saw it lately in bloom in the heart of the City of London.

—— Dielytra eximia.—A charming plant, a foot or so in height, with elegant and somewhat glaucous leaves on long stalks, deeply and tripinnately divided, the ultimate segments broad obovate, coarsely toothed. The racemes of flowers are also on long stalks and curve over gracefully at the top, so that the individual flowers look like so many bells of curious shape. Each flower is about ½—¾ inch long, and of a bright rose-pink colour. The construction of the flower is most peculiar, resembling that of our wild Fumitory, and still more nearly the very beautiful D. spectabilis.

—— Phlox setacea atro-purpurea.—A neat-growing decumbent plant with crowded linear leaves and deep rose-coloured flowers, about 1 inch across, with a purplish eye. The plant is remarkable for flowering twice in the season, and is excellently suited for rockwork or for the front of the herbaceous border.

—— Campanula Hendersoni.—A dwarf-growing, neat-habited plant with long-stalked ovate-acute saw-toothed glabrous leaves, and large erect open bell-shaped flowers of a dark blue colour, 1½ inch across. Suitable for the front row of the herbaceous border, for the rockwork, or for pots in the window.

—— Aconitum japonicum.—A dwarf-growing sturdy Monkshood, with terminal racemes of closely-set dark blue violet flowers, with the curious helmet-shaped sepal characteristic of the genus.

—— Rudbeckia purpurea.—This is a very striking tall-growing Composite. The bracts are bent downwards, and the long strap-shaped rosy violet ray florets are also deflexed, leaving the central disc florets raised in the centre into a dome-shaped mass from which the styles protrude, so that the whole looks like a pin-cushion, with the pins sticking out. A very old plant in gardens, but a very handsome one.

—— Aster Amellus.—One of the best of the Asters, 3—4 feet high, with sessile, lanceolate, hairy leaves, and terminal corymbs of pale violet flower-heads, which have a yellow disc, and are 2 inches across. We lately saw a fine bed of this at Mr. Fraser's nursery, Lea Bridge. The French call this *Œil du Christ*. Virgil in his fourth Georgic apparently refers to an Aster, which Martyn sup-

poses to be A. atticus, a plant closely allied to that now called Amellus, and which VIRGIL recommends to be used in the form of infusion as food for bees—

"Est etiam flos in pratis cui nomen amello
Fecere agricolæ, facilis quærentibus herba.
Namque uno ingentem tollit de cespite sylvam
Aureus ipse; sed in foliis quæ plurima circum
Funduntur, violæ sublucet purpura nigræ.
Sæpe deum nexis ornatur torquibus aræ
Asper in ore sapor."

A passage which is thus rendered by a gardener poet—

"A flower there is, in meadows oft espied,
Y'clept Amellus round the country side;
A plant right easy to be found, sithence,
From one small tuft it rears a forest dense;
The disc of gold, the countless petal rays
Of deepest violet shot with purple haze:
With twisted wreaths hereof the shrines are hung,
But acrid is the flavour on the tongue."

PLINY mentions an Aster as a remedy for snake-bites and for hernia, but it must be gathered with the left hand! He describes it as having two or three oblong leaves and star-like head—"capitula stellæ modo radiata." Doubtless some Composite was intended.

—— CHELONE OBLIQUA.—A low-growing erect plant, with opposite, shortly stalked, saw-toothed leaves, and terminal heads of flowers. The individual flowers are about 1½ inch long, two-lipped, like an Antirrhinum, but with an open throat, and of a rosy lilac colour. There is a white variety of the same plant. Both are suitable for the front row of an herbaceous border.

—— FUCHSIA DEPENDENS.—This rare and beautiful species is now flowering freely in one of the houses at Chiswick. It belongs to the long-flowered section of the genus, and is apparently a near ally to the better known F. corymbiflora, but is more slender in all its parts. It has long trailing branches, and oval, pointed, and slightly toothed leaves, about 2 inches long, arranged in quaternary whorls. The inflorescence consists of a terminal leafy corymbose raceme, 1 foot to 15 inches long, very slender and pendulous. The flowers are about 2 inches long, the tube being two-thirds of its length, the pointed sepals and petals equal in length, and the white stamens scarcely protruding beyond them. The inside of the flower is of a rich carmine colour, the tube being of a darker hue. Like many of its congeners it is of South American origin, having been discovered about forty years ago by the late Prof. JAMESON in woods at a high elevation on the western side of Pinchincha, which immediately towers above Quito. An excellent uncoloured portrait is given in HOOKER'S *Icones Plantarum*, vol. i., tab. 65. As before remarked, it is yet very rare in cultivation, but it certainly merits more extended knowledge, as it is admirably adapted for greenhouse culture either for training to pillars or rafters, or as an ordinary pot plant, and doubtless it is amenable to the same treatment as usually afforded to its congeners.

—— NEW VARIETIES OF FRUITS IN AMERICA.—Messrs. ELWANGER & BARRY, of the Mount Hope Nurseries, Rochester, New York, write as follows in the preface to the twenty-third edition of their descriptive catalogue of fruit, which has just come to hand:—

"Of Pears no new foreign varieties of great excellence have been brought to notice for some time, but we give greater prominence to a few sorts which deserve promotion; these are Petite Marguerite, Bonne du Puits Ansault, André Desportes, &c. Of American varieties we present one new one not hitherto in any catalogue, viz., Frederick Clapp. We have known this variety for five years past, and consider it worthy the high rank awarded it by the Massachusetts Horticultural Society. It was originated by the same family that gave us that famous first-class fruit, Clapp's Favourite. The most important of the new fruits are undoubtedly the new very early Peaches. When we obtained Rivers' Early Beatrice we regarded it as an acquisition of immense value, parties even making the journey to England to purchase trees of it. Now, before that variety has been fully tested in all parts of the country, it seems to be entirely superseded by larger, earlier and better sorts. Some twenty years ago, when Hale's Early was introduced, we thought we had made a wonderful advance, and so we did. That variety with all its defects has been of great value to the country; it is believed to be directly or indirectly the parent of nearly all the very early new sorts recently obtained, some of which ripen a month earlier than Hale, and two weeks earlier than Beatrice. The new Peach, Waterloo, a large and beautiful variety, ripens in western New York in the middle of July. This is really wonderful progress. We have been testing a long list of so-called Russian Apples, many of them obtained directly from the Imperial Gardens of Russia, and many from the Agricultural Department at Washington. We confess, however, that so far we have experienced considerable disappointment. We find a very small number of them that promise to be valuable acquisitions. So far as we are able to judge at this moment, scarcely any of them will equal the old well-known Russian sorts—Red Astrachan, Duchess of Oldenburg, Alexander, Tetofsky, &c. We hope yet to get one or more winter sorts among them worthy of culture. Of Grapes there are several new sorts which give promise of great excellence, and we hope to prove them satisfactorily before the issue of another edition of this catalogue. The number of new varieties of Strawberries is increasing rapidly. A few of those already introduced show some real progress. Among these the Sharpless and Crescent Seedling at this moment seem to take the lead."

—— GARDENING CHANGES.—We understand that Mr. JAMES JOHNSTONE has been succeeded as gardener to Captain MAXWELL, at Terregles, in the Stewartry of Kirkcudbright by Mr. JOHN MCINTYRE. —Mr. GEORGE HUMPHREY, late gardener to C. F. KEMP, Esq., Fox Bush, Tunbridge, has been appointed gardener to J. PRICE LADE, Esq., at Nash Court, Faversham.—We are informed that Mr. JAMES MCAULLY, of Trentham Gardens, has been appointed gardener to Earl FERRERS, Stanston Harold, Leicester.



Home Correspondence.

Royal Horticultural Society's Provincial Show at Preston.—The *Preston Guardian* of last Saturday announces the unpleasant fact, that the financial result of the horticultural exhibition held at Preston last July is a loss of £1500. This I am sure all must regret, but to people in the locality (capable of forming an opinion on the subject) it is not a matter of surprise. Several elements contributed to this disastrous result—first, unfavourable weather; second, counter-attractions at Blackpool: these things of course the committee could not help, but there were two other very potent elements, which, had very much to do with the failure—namely, the unsuitableness of the locality (for it is well known that Preston is only a small town) and the depression in trade; and owing to these last-named facts it was matter of astonishment to a considerable number of persons acquainted with the district that the Royal Horticultural Society should visit a locality ill-adapted for the purposes the Council had in view. I would respectfully draw the attention of the Council to a suggestion—namely, that if they ever hold a Provincial Show again, that they do so the first week in September. July seems to me the most unsuitable month in the year, inasmuch as the most effective exhibition plants are out of bloom. Roses, Azaleas and Orchids are to a large extent over—and what is an exhibition without these constituents?—and it is too early for a great display of fruit and vegetables. I venture to think that if the Society held its Provincial Show at the time I have named, they would be doing a good and special work in bringing together the pomological productions of the country, and also the grand autumnal flowers which one seldom sees brought together in large numbers; and I have a strong impression that a larger number of people would be brought together to see a grand display the first week in September than has been the case the second week in July. One word to exhibitors as to the length of time a show of this kind is to be open. It is impossible for a show of any magnitude at all to pay its way unless open at least four days; the prizes are heavy—sometimes the amount given being of more money value than the exhibits; therefore if exhibitions of this kind are to be held exhibitors must conform to the regulations and not be unreasonable in their requests. And there is another thing that all exhibitors ought to bear in mind, namely, that, if they have entered, they ought to do one of two things—either exhibit, or (if unforeseen circumstances arise which prevent them) let the management know early enough, in order that the arrangements are not interfered with. I have known exhibitors send their entries—never exhibit, and never assign a reason for not carrying out their engagements; this is very bad behaviour, and such offenders ought to be sued for a breach of promise and fined heavily. *A. B.*

Zephyranthes candida, or the White Peruvian Swamp Lily.—This pretty bulbous-rooted plant, flowering at this season of the year, when white flowers are so acceptable, and producing them in such abundance, deserves to be more generally known and cultivated than it is. It requires but little care, as beds of it when planted need not be disturbed until they become overcrowded. With sufficient moisture it seems to grow almost regardless of the nature of the soil which surrounds it. One of its great recommendations is its hardiness. I quote the late Dean Herbert of Manchester when I write that "with the thermometer 15° below freezing point it has only suffered at the points of the leaves." It is a native of Monte Video, and is found in great abundance on the banks of the River La Plata. Nay, more; it is asserted that the river derived its name from the silvery whiteness of the flowers, which were found in such great abundance there by the first navigators of that country. It flowers in such great abundance, when planted either as a bordering or in a bed, that it would be difficult to introduce any object between the flowers during the sunny hours of the day without displacing some of them. As a bordering for beds of Rhododendrons it is a great relief in the autumn; it takes off the sombre hue of the noble foliage of the plants, and forms a beautiful intermediate line between them and the lawn. In a bed it forms either a pretty edging or a beautiful mass of white. It grows freely and increases rapidly; if once planted in a garden there is little danger of its being lost unless it is deliberately destroyed; and still it is not a weed or difficult to destroy, but it is a beautiful and a free-flowering "bulbous-rooted plant," producing thousands of the most chaste white flowers on its pretty semi-cylindrical green leaves, and exciting the admiration of all who have the pleasure of seeing it growing in masses. How is it gardeners are not better acquainted with it? *C. B. S., Jersey.*

The Fuchsia.—Mr. Fish may write eulogies of the Fuchsia as long as he likes, but I object to his associating my initials with his praise in the way he does. Is he so incapable of perceiving what is implied in my remarks when he assumes that I am pleased to see that the Fuchsia has had its day? My reference to its comparative decadence is not as to sorts or to beauty, or to any intrinsic merit or demerit it may possess, but is made solely because it is not the popular show and decorative plant it once was. Here and there Fuchsias are shown well and are encouraged, but how seldom: whilst for one plant exhibited there are twenty Ferns, Caladiums, Draceenas, and other weed-like foliage-plants grown because they are easy to grow, and not because they are a tithe so beautiful as a well-grown and well-flowered Fuchsia. When I lamented the comparative decadence of the Fuchsia by penning "more's the pity," does Mr. Fish think that I did not mean it? All the fancies Mr. Fish may indulge in will not set aside the undoubted fact that the Fuchsia is not the popular and favoured plant it was some years since. *A. D.*

The Failure of Cauliflowers.—This has been almost general this season, alike in market as in private gardens, not that the crop has absolutely failed, like the major part of the fruit crop, but that the flowers have come open or green in the centre, or garnished through the flower with tiny leaves. These departures from the normal types of good Cauliflowers have not only marred the beauty of the most useful of all the Brassica tribe, but have also lowered their quality, for it is a fact that every departure from this best form in Cauliflower invariably involves a sacrifice of sweetness and crispness. A large proportion of Cauliflowers have also come blind, and this throughout the season. Again, not a few sorts including Veitch's Autumn Giant have come out of season, from a fortnight to a month later than usual. So late, in fact, have been our main crop of the latter this year that we began to fear that a veritable Broccoli had been substituted for it by mistake. It is, however, now (Sept. 20) coming in in good form—almost the only really perfect Cauliflower we have had throughout the season. I should be glad to hear the experience of your correspondents on this important matter. Has it been similar to mine, and what is the cause of it? The tropical weather in June might account for one crop getting out of form or time, but hardly of several, or most of the crops doing so. It is a serious matter to private growers, responsible for the daily supply of large families, and also to those who make their rents out of the Cauliflower, if these are to open and disfigure themselves in this fashion, and also ruin their quality without any apparent or suffi-

cient cause. The greater part of the season has been what one might have thought would have suited Cauliflowers, and yet it has run headlong to ruin, or refused to come to presentable heads at all. Some Job's comforters have recently been telling me that the finer strains are running out. On pointing to Veitch's Autumn Giant as a vigorous novelty, as distinct as it is strong, the answer was, "Too much of a Broccoli, sir, to remain long a steady, trustworthy Cauliflower." I have little faith in such statements; but, nevertheless, I should be glad to know what has been the matter with the Cauliflower during the past season, and whether better things may be expected next year. *D. T. Fish.*

The Gardeners' Royal Benevolent Institution.—In your paper of this date you mention the death of Mr. James Browne, at the age of ninety-three, and that he was formerly gardener to the Duke of Buckingham and to Lord Southampton. Although he held these good situations misfortunes and distress overtook him in his old age, and eighteen years ago, in his seventy-fifth year, he was elected a pensioner of this Society at £16 a year, and this, coupled with the assistance he received from his friends, enabled him to pass his days in ease and comfort. I may be allowed to add that he never omitted to say how grateful he was for the annuity. He received from this Institution £288. I only mention this to show that it is possible for misfortune and distress to overtake the best of men in their old age, and to enforce the necessity of gardeners bearing this in mind. *Edward R. Cutler, Secretary.*

Hydrangea paniculata grandiflora.—What a glorious shrub is the Hydrangea paniculata grandiflora? If it flourishes in the cooler climate of England as it does in this country it must be a great acquisition to your gardens. With the remembrance of the exuberant bunches of that old and yet fine shrub the Snowball, as long ago as we can recollect any flower, and the quite recent impressions of another of the same family (Viburnum plicatum), we thought there could be no more such triumphs of Nature's manifold productions. But the immense heads of Hydrangea paniculata grandiflora, quite 15 inches long and 8 broad, on plants not 4 feet high, appearing through the whole month of August, throw all others of similar character in the shade. H. nivea and H. quercifolia are very handsome shrubs, and so is the very old and well known H. hortensis, and Otaksa (though not hardy in New England), and the new H. var. Thos. Hogg, with its profusion of snow-white gigantic heads: but they fall far short of its near relative, growing as it does without care, flowering when only 3 inches high, and every single stem terminated with a panicle of its snow-white blossoms, varied by the pinky tinge of the older flowers, often so deep in colour as to suggest a distinct variety. Rich indeed must have been the treat to the botanist or lover of flowers when he first saw the great heads of this Hydrangea in the little gardens of the Japanese. It may be increased with the rapidity of a Pelargonium, and in two years it attains its full properties of beauty, for we have found plants of that age grow far larger heads of bloom than older specimens; in fact it should be headed down to obtain strong root-shoots, which grow about 4 feet high with terminal panicles of blossoms. And may we not anticipate a great addition to our gardens by the hybridisation or crossing of this with other species? A pink or blueish variety would be of great value, and our gardens and shrubberies gain a prize, only equalled by the acquisitions of the earlier part of the last century. *C. M. Hovey, Boston, Mass.* [It is highly appreciated here also. EDS.]

Yucca aloifolia variegata in Flower.—About a fortnight ago I had the pleasure of seeing a pair of fine plants of the above in flower at Elleray, Windermere. The plants in question were each about 5 feet high with fine spikes about 3 feet long, with creamy white flowers. The flower-spikes are pyramidal, about a foot in diameter, each bearing about 220 blooms. The gardener (Mr. Henderson) told me they received no particular culture; they were potted 4 years ago into 16-inch pots, with principally loam and a little peat, where they remain until now. I have heard that these only flower once in ten years, and by what I can learn the plants in question are about that age. The spike comes up the centre, and leaves the plant minus a growing point. I would like to know if the plant will break out at the top when it has done flowering [Yes], or throw up suckers, or will they die altogether? *S. C. B.*

Autumn Blooming Roses.—No doubt much of the free blooming quality seen in Roses this autumn is due to the moist and moderately cool nature of the season, as the plants generally have made luxuriant growth. The general absence of mildew is probably owing also to the free-growing condition of the plants and the moisture at the roots. I have just gathered a glorious bunch of flowers of the beautiful white Niphetos from a south wall, a kind not specially mentioned by Mr. Prior last week. It is indeed a glorious autumn Rose. Tea Roses worked on standard Briers and planted in an outside border with the heads in the house, are doing splendidly, and have made a fine growth so clean and vigorous, and have carried flowers without cessation for five months. They enjoy the protection of glass thoroughly. *A. D.*

Proliferous Pear.—I herewith send you a curiosity. It is I am told gathered from a Pear tree which is not grafted on a Quince, but the tree has been grafted with grafts from a tree grafted on a Quince. The top fruit we believe to be a Pear, but as to the under one, some say it is a Pear and others a Quince. I should be pleased to have your opinion on the same. *J. G. Mitchinson.* [The specimen sent is a Pear (not a Quince), minus the core and seeds. From its centre protrudes a long stalk bearing another Pear at the top. Such cases are not very uncommon, and they prove that the edible portion of a Pear is the dilated end of the stalk, in which is embedded the true fruit or core containing the seeds. EDS.]

Paraffin as an Insecticide.—Having to supply a great quantity of white flowers for bouquets and other purposes, I devoted a house to that purpose, and planted Gardenias in quantity, double Tabernæmontanas, Eucharis, Stephanotis, Jasminum grandiflorum, Bouvardias of sorts, and a lot of other things. Previous to planting the house was whitewashed, the woodwork painted, the plants all dipped into a famous insecticide, and the bed wherein the plants were planted filled with fresh maiden loam, peat, and sand. All went well during the winter, but with the spring and an increase in the temperature came not only a fine growth, but, alas! also a wonderful reproduction of mealy-bug, and that notwithstanding the most persevering efforts with the syringe. Sponging was resorted to on wet days, but still they increased. To my great joy Mr. Knight published in the *Gardeners' Chronicle* a statement to the effect that one wineglassful of paraffin put in 4 gallons of clear water would settle the bug without injury to the plants, if they were syringed with it. We have given it a trial, and it has succeeded; and when I go into the house and look at the great fat buds of Gardenias, and the snow-white blossoms, I feel master of the situation, and this house is now the most frequented by the ladies of any, and its inmates the greatest favourites, for although gathered daily still they bloom. I express my own, and I am sure many other brother gardeners' thanks, to Mr. Knight, for publishing the anti-bug dressing. *J. Rust, Eridge Castle.*

Vick's Criterion Tomato.—I am so well pleased with this Tomato that I feel constrained to offer a word of praise in its favour. The first point I would mention is the flavour, which my employer maintains is the most delicate of all Tomatos he has tasted; next comes a very great point in its favour, viz., its productiveness, which excels all I have ever seen; it is likewise a very handsome, even-shaped fruit, and of a very pleasing colour. *E. Morgan, Harrow-on-the-Hill.*

Large Marrows. I cut on September 4 a Vegetable Marrow, of the white variety, which measured 40 inches in circumference and 24 inches in length, and weighed 45 lb. I have another growing which measures 36 inches in circumference and 23 inches in length. I expect it will be larger than the other. *Wm. Duff, Fairfield, Lancaster.*

Venus Victrix Fuchsia was in cultivation years before Venus de Medici was known. I remember Venus Victrix being grown in 1847, but cannot say who was the raiser of it or the exact year it was sent out. Newberry's delicata and Dr. Jephson were both sent out by Newberry, of Upway, near Dorchester, and were both popular light varieties in those days. Mr. Cannell, I think, is right in his assertion. *H. Munro, Clevelands, Lyme Regis, Sept.* 23.

—— "Pater" is either in error as to when Venus Victrix Fuchsia was first grown by him, or he was about twenty years behind the time in obtaining it. If he will refer to the *Floricultural Cabinet* for the year 1844, p. 203, he will find that it was exhibited in several stands in that year at the Horticultural Society's show. I remember that it came out about the year 1842: I was then a lad of some sixteen years, but an old florist, having been fortunate in raising Pansies, Pinks and Picotees. If "Pater" also looks at the report of the same show he will find in nearly every stand my Lady Dacre Picotee, of which I sold the stock to the late Thomas Hogg, of Paddington, for £10. He will also see in the August number of the same year a drawing of my Queen of Roses Pink, which is described as the best of the day. I sold this at the same time for £5. I gave 10*s.* 6*d.* for a plant of Venus Victrix when it first came out, and have reason to recollect those days, as I frequently got up with the sun to attend to my pets—and do not regret it, believing that it led to my future success. I find no place is so refreshing after a hard day's business as my garden and farms. *Thomas Garrat, Hunsdon Lodge, Ware, Herts.*

Tomatos and Wasps.—My experience induces me to express the opinion that Tomatos do not in any degree mitigate the ravages of wasps upon fruit. I have here a Peach wall 100 feet in length, planted alternately with standards and dwarfs, which invariably produce good crops of fruit, but always more or less a portion of it succumbs to these unwelcome pests. Some time ago a suggestion was put forth in these pages that Tomatos were a preventive against the ravages of these depredators, I planted every available space on my Peach wall, as well as amongst other fruit trees and in vineries, and recommended the same to neighbours, but in each and every case the desired results have not been attained. I have frequently seen them alight on the Tomato foliage with as much freedom as on their sweetest delicacies. A good plan I have found to allay the destruction of fruit caused by wasps, flies, &c., is to hang bottles—lemonade bottles I find are the best suited for the purpose—about the trees, about half filled with a mixture of treacle and beer. It is surprising the quantity that can be captured in this way, not only wasps but flies, and even hornets I have seen pay their last debt. *E. Morgan, The Butts, Harrow-on-the-Hill.*

—— I think "Nemo" has placed too much reliance on the properties contained in the Tomato for repelling the visits of wasps and flies to fruit houses. I have an orchard-house, also a lean-to 157 feet long and 7½ wide, with a partition in the centre. One division is planted with bush trees of Apricots and Plums in the front, and the back wall is covered with Peach and Nectarine trees. The other division is planted with Tomatos in the front and with Peaches and Nectarines at the back, and this house is the most infested. The wasps, bees, and flies have to pass over the Tomatos to get at the fruit on the back wall, and so bad have been their attacks that I have been obliged to cover the fruit with tiffany to preserve it. The bees have this year again taken a liking to fruit, and when they do they stick to it with even greater tenacity than wasps. Four years ago I did away with two hives of bees on that account. I never knew them devour fruit more voraciously than they did that year and again this season. *H. Mundell, Moor Park Gardens, Rickmansworth.* [Mr. Boscawen informs us that neither wasps, flies, nor bees have entered a large span-roofed orchard-house (used as a vinery) in which he has planted Tomatos, although in former years they sadly infested the same house. EDS.]

—— I wish I could say that wasps would not infest a house in which Tomatos were grown. We have a vinery planted with Muscat of Alexandria, Black Hamburgh, and Foster's Seedling Grapes, with Tomatos on the back wall, but they do not drive the wasps or flies out. What, however, surprises me much is that the wasps do not touch the Foster's Seedling. *J. B., Plowhatch.*

How to Dispose of House Refuse.—In any information I may give respecting the results of the mode of cultivation described in a former letter, I wish to be very exact and to avoid all exaggeration. I ought, therefore, to state that in the third part of my Turnip crop, which I said was then to be dug and buried for future use, I was disappointed. The bulbs were all very fine, but they had remained too long in the ground, and were many of them rotten within. On the other hand I omitted to notice an important item in the several crops on 1 perch of ground. The sowing of the first line of Turnips had failed. My servant on perceiving this had sown Cauliflower seed for an early crop next year. The day after he dug the Turnips he pricked out 120 fine Cauliflower plants grown from these seeds in a warm border for shelter through the coming winter. Last year he thus saved six dozen Cauliflowers, which in the month of July were very fine indeed, and would have sold in the market at 3*d.* a piece. Some of your readers may have noticed my statement that the little crop of Potatos on this perch of land was sound and good. Not one was diseased. There was no disease in another crop in the same garden, although there has been much of it in the immediate neighbourhood. Nor in the five years since I began to use the manure improperly styled by the person who undertook to manufacture it the phospho-silicon manure have I had a single diseased Potato. Many adverse circumstances have attended my limiting the manufacture of that manure to a single individual. But my own confidence both in the principles of the manufacture and in its use, and in its amazing power when properly prepared and applied, has in nowise abated. Its use and efficacy in my little garden cannot be questioned. But that which I now wish to bring before your readers, and with a view to which in part I wrote my former letter is this: With a few simple modifications of a most simple process of manufacture, and of simple and easy methods of cultivation, that use and efficacy may be

as great in agriculture as in horticulture. To say nothing of the special adaptation of the manure itself to corn crops, to pasture land, and (as I believe) to Potatos, the manuring of the plant or crop rather than the entire field, together with the alternate or intermediate growth of two crops together, would soon bring to an end the three-field or four-field system of cultivation, and double or even treble the agricultural produce of this country. I have for some time been set free from the heavy bond of secrecy under which I had placed myself, and have done much in preparation for a full disclosure of the principles and mode of the manufacture of this manure, through which every one, from the largest farmer to the cottager with the smallest garden, may prepare as great an amount as he may require for himself. The one difficulty before me is, the way in which this disclosure shall be effectually made. It is no matter of present concern to me. I am seventy-seven years of age, and, with far higher objects before me, have little time to bestow on the work. Unless a very wide diffusion of a good-sized pamphlet on the subject can be secured, I should not think it right to publish such a pamphlet, and for this I cannot spend a shilling. In such a state of depression of trade and agriculture, however, as the present, I feel I ought not to keep such an important matter to myself; and anything that, while life and strength are continued, God shall enable me to do for the temporal as well as spiritual welfare of my country I trust I shall be ready to do. *Henry Moule, Fordington.*

Vegetable Marrows: How to Make Preserve.—I have growing in this garden a Marrow of the long green kind: it measures 2 feet 1 inch long and 2 feet 11 inches round: weight 39 lb. There are others nearly as large. Can any of your readers favour me with a recipe to make jam of the same? I hear it is very good. *James Redman, Gr., Larkhills, Winchester.* [The Marrow should be of the middle age, that is, the flesh nicely firm, without being stringy or the rind hard. It should be peeled and freed from the seeds, then cut into pieces and weighed, and afterwards cut into about 1 inch blocks and put into the stewpan. To 4 lb. of Marrow put 3 lb. of white sugar, and add for flavouring about one-third of an ounce of ground ginger and the rind of a large lemon cut small, and also the whole of the juice squeezed out. The mixture should boil for one and a-half to two hours, when it will be ready for potting. It becomes firm as soon as cold, and will keep for a year. EDS.]

Begonia ascotensis.—To help those who are desirous of following your good advice to look after and try Begonia ascotensis, it may be worth stating that Mons. Ed. Pynaert-Van Geert, 142, Rue de Bruxelles à Gand, offers it at 6 francs the dozen, of course plus the package and carriage—a price which need deter no one from testing its capabilities. Beautiful as the floral decorations of the London parks have been this summer, I saw no experiments in bedding out tuberous or other Begonias. It is to be hoped that some attempts on an extensive scale will be made next season, for success, I firmly believe, is as good as certain. There is no reason whatever why they should not do just as well in and about London as they do in Paris and the north of France. You have already more than once noticed the way in which they resist pelting rains; indeed, they seem rather to like them than not. Very useful varieties are B. Chelsoni (obtained from Van Houtte), easily multiplied in quantity from the spring shoots; Worthiana (from V. Lemoine), bright, showy, and vigorous; Excelsior (Veitch), still more brilliant; Magenta Queen (Williams), free-flowering, large, and richly tinted. Others, doubtless, possess great merit, and would prove effective outdoors, but having grown the above in the open ground, I can recommend them without hesitation. *E. S. Dixon.*

Colchicum autumnale.—This flower has also been unusually fine in Hampshire during the early part of the present month (September). It came into bloom with us rather sooner than its wont this season, and the late rains have entirely destroyed its beauty. We had a great number of pale purple blossoms out during the whole month of October last season, but now all traces of colour have departed from the "Naakte-Vrouwen" (as the Dutch call these flowers, because they come up destitute of the robe of green which Flora generally drapes her children in), and the beds look quite bare. It grows wild in some of the meadows a few miles off, but at this place it is cultivated in the flower garden and lawn, adding considerably to the brightness of the beds in autumn when other blue and purple blossoms have begun to die off. There is, however, in my opinion one objection to Colchicum as a garden flower, and that is its dangerous character. Children, who are fond of eating everything, would be apt in spring to eat the seeds, and that is the especial time when their poisonous properties are most powerful. The bulbs, too, occasionally get exposed, and they are very deleterious. They are hurtful to animals as well as mankind, and I should be very sorry to eat them, although some writers say that our Meadow Saffron is the "Hermodactyl" of the ancients, and we read in various works that the Egyptian women were accustomed to fatten themselves on the roots of "Hermodactyl." Colchicum, as a medicine, in the hands of a medical man is most valuable, and well may Martin Tupper write of it

> "Not long to charm away disease hath the Crocus
> yielded up its bulb,"

for it does act like a "charm" in some cases, soothes the pains of gout, and softens the horrors of rheumatism. The enchantress Medea was born at Colchis, where this plant is said to have carpeted the plains, and it is very probable that she made use of it in her magical charms which sent the dragon to sleep while Jason stole the golden fleece. Colchicum has been known in England as a medicine ever since the time of Queen Elizabeth, when a translation of Wertgung's *Praxis Medicinæ Universalis* appeared giving it great praise, and most of the doctors of that day immediately adopted it. *Helen E. Watney.*

Autumnal Roses.—Having had the privilege of viewing an extensive collection of Roses I noticed the following, which were blooming freely on Sept. 19:—

Hybrid Perpetuals.

Albert Page	Jacques Lafitte
Alfred Colomb	Jules Margottin
Amelia Hosté	La France
Antoine Ducher	La Rosière
Avocat Duvivier	Louis Van Houtte
Beauty of Waltham	Louis Darzens
Boieldieu	Madame Alfred de Rougemont
Captain Christy	
Caroline de Sansal	Madame Bellenden Ker
Charles Lefebvre	Madame de Montcheveau
Claude Levet	Madame C. Wood
Comtesse de Serenyi	Madame de Stella
Countess of Oxford	Madame Devert
Coquette des Blanches	Madame la Baronne de Rothschild
Diana	
Duc de Chartres	Madame Noman
Duchess d'Ossuna	Madlle. Bonnaire
Dupuy Jamain	Marquise Adèle de Murinais
Elise Boëlle	Monsieur Fillion
Etienne Levet	Monsieur Noman
E. Y. Teas	Peach Blossom
Firebrand	Pierre Notting
Fisher Holmes	Princess Beatrice
François Jos. Pfister	Princess Christian
Gabriel Tournier	Reine du Midi
General Washington	Souvenir de Louis Van Houtte
Général Jacqueminot	
Gonsoli Gaetano	Star of Waltham
Gustave Reviliod	St. George
Horace Vernet	Victor Verdier

Bourbon.

Acidalie	Sir J. Paxton
Queen	Souvenir de le Malmaison
Reine Victoria	

Tea-Scented.

Alice Sisley	Madame Maurin
Catherine Mermet	Madame Pauline Labonté
Comte de Sembui	Madmoiselle Cecile Berthod
Coquette de Lyon	Mademoiselle Marie Berton
Devoniensis	Maréchal Niel
Duc de Magenta	Marie Guillot
Duchess of Edinburgh	Marie Van Houtte
Gloire de Dijon	Narcisse
Goubault	Perle de Lyon
Homer	Perle des Jardins
Jaune d'Or	Rivolli
Jean Ducher	Rubens
Letty Coles	Safrano
Madame Berard	Souvenir de Madame Pernet
Madame Bravy	Souvenir de Paul Neron

Noisette.

Aimée Vibert	Lamar que
Céline Forestier	Unique Jaune
Fellenberg	

China.

Archduke Charles	Fulvier
Ducher	Mrs. Bosanquet
Eugène Beauharnais	

Rosa.

Foreign Correspondence.

UITENHAGE, SOUTH AFRICA: *Aug. 6.* I think a few notes regarding this locality may prove interesting to your readers. A recent visitor has spoken in disparagement of this colony, but I am sure there is a bright as well as a dark view. We have just passed through a very severe and prolonged drought, which has lasted (a few light showers intervening) for nearly a year and a-half. Within the last week heavy rains have refreshed the colony from Cape Town right through Kaffraria to the confines of Natal. With more heat vegetation will soon assume a summer dress. English Oaks by the end of the month will be in leaf, and their beautiful fresh foliage forms a refreshing contrast to the sombre hue of the Eucalyptus globulus, the Australian Acacias, which grow in every street and garden; and the native "bush," covering hill and dale, which always keeps the same dark olive-green colour.

This town, which is distant twenty-one miles from Port Elizabeth, and is elevated very slightly above the sea level, is built on a slope above the Zwartkops River, and is supplied by a very copious spring, which bursts from the base of the Winterhock mountains in a valley six miles from the town. The water is brought in an open ditch to a site above the town, and is thence distributed through every street. Irrigation is followed by every one, a system which our prolonged droughts render almost imperative. Although the average rainfall at Port Elizabeth is considerable, amounting to 25 inches, ours is much less. Our soil is a rich sandy loam resting on gravel or clay, and is well suited to fruit trees. Apricots and Apples are largely grown; but I regret to say that the finer varieties of Plums, Pears, and Cherries are hardly known. Peaches and Nectarines abound, but the fruit is often maggot-eaten. Guavas thrive and bear heavy crops with a good supply of water; the yellow-fruited Pear and Apple shaped sorts do best. Red Guavas are very seldom met with. Loquats, Eriobotrya japonica, form large handsome trees and bear regularly, but, as M. Naudin has remarked, the fruit wants improving; at present, with its over-large kernels, it hardly ranks as a market fruit. Might we not improve it by selecting the smaller seeds from large fruits and sowing? In choice sheltered spots the Custard-apple, Anona reticulata, I believe, produces fruits the size of a cricket-ball. Bananas and Pine-apples will thrive outside, but these things require more attention than most men care to give. Strawberries are hardly grown at all, through some strange prejudice. Vines bear very well with due watering and sulphuring; the sort most in favour is named Blue Persian. Vines are often grown on trellises, though some keep them pruned low. Oranges were once abundant in the town I am told, but of late years the trees have died off, partly owing, I suspect, to brown scale and part to over-irrigation.

Oranges, however, are brought in from farms near in fine form; Pomplemons, used for preserving, and large and small eating sorts. A rough-skinned variety of Lemon is used with Pomegranate and Quinces to form hedges. Figs make fine large trees and give good crops, we begin to know Castle Kennedy. It will be seen from the foregoing that we can produce the best temperate and semi-tropical fruits, yet there is very large space for improvement. For instance, there is no nursery worthy the name nearer than Grahamstown—over 100 miles distant—so that orders, even with the aid of the railway, take much time and expense in execution. But I am glad to say we have improved of late in this respect. Fruit is a remunerative thing, as the demand far exceeds the supply. We have to eke out our preserved fruit with the English article, for which in the Transkei I have had to pay 1*s.* 6*d.* per pound.

Vegetables are largely cultivated, all with irrigation, the bulk being Cabbage and Potatos; the latter now fetch 25*s.* per 100 lb. The tubers are planted in July and February, and with good seasons turn out well, when prices will range from 5*s.* to 10*s.* per 100 lb. No other vegetables are grown except Asparagus and Rhubarb. Melons, the sweet and water, are to be found in every garden through the summer—November to March—as well as Pumpkins and Cucumbers.

This is our mid-winter, but as what we call frost does not affect the flowers of Poinsettia pulcherrima or Heliotrope outside, you will infer we enjoy the climate of Nice or Mentone. We rarely see the thermometer below 35° Fahr. here, ice I have never seen, though a few weeks ago snow was seen lying on the Cockscomb Mountain, 6000 feet altitude, within 80 miles N.W. of the town. In summer the maximum temperature ranges from 95° to 100°, which does not try one much except when hot north winds prevail. In Grahamstown, which is about 1700 feet above the sea, the oldest I have known was 35°, at the end of July—at the same time standing water fully exposed gave 42°. In the same town the warmest I have observed was 94° shade, and 130° sun, end of October, unusually warm for that month.

As Uitenhage is a Dutch town founded in the good old times some eighty years back, there are many specimens of trees and flowering shrubs of large size still standing. Every visitor to the town must be struck with the many fine specimens of Norfolk Island Pine, Araucaria excelsa, with their never-to-be-forgotten form contrasting so strongly with spreading Oaks, towering Eucalyptus, or the obelisk-like upright Cypress. These trees (A. excelsa) thrive here to perfection, withstanding the fierce gales and prolonged droughts. Araucaria brasiliensis, Cookii, Rulei, and

others, also do well, with the exception of *A. imbricata*, which seems to keep a stunted growth. As yet little has been done to introduce foreign timber and ornamental trees, but I am convinced that from the Japanese, Australian, New Zealand, American, and European sylva large selections might be made, which would greatly benefit this comparatively treeless country.

The botanic gardens here and there have done something towards this, but the nurseryman's profession is hardly known here. Every species of Eucalyptus grows well. E. globulus is an admirable shelter tree, and so is Acacia melanoxylon, Blackwood, and Pinus pinea and Pinaster. Acacia dealbata, cultriformis, and many other species flower beautifully, and grow to large trees. We have also in town fine specimens of Magnolia grandiflora, conspicua, Paulownia imperialis, Grevillea robusta, Bougainvilleas, three species; Camellias, Hibiscus rosa-sinensis, Azaleas, and Gardenia florida. The last is often worked on our native Gardenia G. Thunbergii, I believe, as plants from cuttings are said after a few years to die away: can any one confirm this from experience? Roses, more particularly Teas, bloom constantly; the good old sorts as elsewhere stand to the front—Gloire de Dijon, Cloth of Gold, Souvenir de la Malmaison, and the old "King" Rose. The finer varieties of H.P.'s are little known. Poinsettia pulcherrima is seen in nearly every garden, its rich coloured bracts continue in perfection through the winter, but the absence of leaves makes the plants look bare. I have not seen the double form in bloom yet.

I refrain from giving a longer list, but the above will give your readers a fair idea of things as they are. I should say we have growing here Seaforthia elegans and Oreodoxa regia, the former about 15, the latter 25 feet high; both produced good seed last year without protection. There are many other Palms to be seen, Phœnix species, &c. Ficus elastica forms a very handsome tree, as well as Grevillea robusta; Lagunaria Pattersoni, Cedrus Deodara, and many species of Cupressus: Melaleucas and Banksias grow well, and Oleanders red and white form one of the best of ornamental hedges. Climbing plants are in much request for covering trellises, verandahs, &c., and so affording a grateful shade in sultry weather. Tecoma jasminoides, venusta, Pandora, picta are well suited for this work, as well as Passiflora alata, cardinalis, and edulis; the latter fruits abundantly, and is known as the Granadilla. The beautiful Tacsonia Van Volxemi displays its hanging flowers of the richest ruby-crimson; its fruit, too, is agreeable. Tacsonia mollissima is a most rapid climber. T. insignis, though slower and much infested with a caterpillar which devours its leaves, often shows its brilliant flowers. Passiflora cœrulea is a great pest, a perfect weed, often quite stifling hedges. Stephanotis floribunda, Hoya carnosa, and Clerodendron Balfouriana require warm sheltered places to do well. The former ripens seeds here, as do Mandevilla suaveolens, Bougainvillea, and Wistaria sinensis. Flowers at present in bloom are Ranunculus, Anemones, Jonquils, Narcissus, Phlox Drummondii, Pansies, Stocks, Primulas, and Cyclamen.

Of the native plants round this part of the country I cannot say much. The bush is very uninteresting, consisting as it does of dense thorny thickets with the Speckboom, Portulacaria afra, standing up alone above the tangled mass below. On the lower slopes of the Winterhoek Mountains Euphorbias of the largest size abound, their rigid forms often clothed with a climbing Asparagus bearing delicate white flowers. A large, handsome species of Ficus grows in the deep sheltered valleys along with often giant trees of the Yellow-wood, Podocarpus latifolius. Encephalartos are rare. Aloes abound, some of great beauty. We have two or three Ericas, and are rich in Mesembryanthemums. Of bulbs their name is legion. Vallotas, Hæmanthus, Agapanthus are found in most sheltered places; Brunsvigia, Cyrtanthus, Hypoxis, and many Irideæ delight in a deep clay loam and full exposure to the sun. Strelitzias are not uncommon on hill-tops. Orchids I rarely notice. Ferns are present only where water exists in continuance. Adiantum, one species; Asplenium, Cheilanthes; Tree Ferns are absent.

Some of the readers of the *Gardeners' Chronicle* may have had their thoughts turned lately towards South Africa as a future home, and in truth we want an influx of emigrants, bringing with them English energy and that faculty for plodding straight onward which never fails to prosper a man.

By the stress of circumstances absent in other colonies, South Africa has not yet taken the place due to her, yet when the Kaffir troubles have been settled, and the inert Dutch element quickened by a large infusion of English blood from the island home, I do not doubt that this great country will earn and wear a world-wide name.

Of all parts of the colony, however, that I have seen, that tract from which the rebel Kaffirs have been lately driven offers greatest attractions to those who earn their living by the soil. I refer to the coast-line on the east lying between the Kei and Bashee Rivers. This part has been truly blessed by Nature—fine soil, abundant water, with pasturage and good timber. Mr. Froude has termed it a paradise, and it must at some no very distant day be the home of a happy and prosperous people. *R. W. A.*

Florists' Flowers.

DRESSING FLOWERS.—This subject, started by the Editors of the *Gardeners' Chronicle* in their remarks on the exhibition of the National Carnation and Picotee Society, appears to have had as strong an effect on the minds — or imaginations, should I say?—of some correspondents of the gardening periodicals as the proverbial red flag has on the fury of the noble bull. Twenty-five years ago a correspondence on the same theme engaged the attention of the lovers of floriculture, and I transcribe and ask your permission to make it public, in the hope that some of those who have been interested in the matter may see it as it appears in the clear cold light of reason, and freed from the fumes of passion and prejudice with which, as it appears to me, it has been surrounded. Thanking you in advance for this courtesy, I am, &c., *A Seventeenth Florist.*

Under the *nom de plume* of Philip Havapek, the late Mr. Edward Beck wrote:—"Dressing Flowers.—This I hold to be one of the most pernicious practices connected with floriculture. If I attend an exhibition I am struck with admiration at the beauty of the Pinks, or Picotees, or Carnations. I become a purchaser, and with me, do what I will, they are mere mops. I am no dresser of flowers, and if I could do it as well as some of our first artists in that line, I have not the time and I hope never to have the inclination. I protest against the system. Let me have first-rate flowers combining all possible beauties from Nature's hand—none of your milliner's trickery by which all kinds of deformities are hidden and we are beguiled into the belief that what is shown is what we can grow and display."

The late Rev. George Jeans replied:—"Twenty-six years ago come next June I first saw a box of cut Pink blooms to be taken to an exhibition where a selection out of that box gained the 1st prize. Afterwards I was admitted by the nurseryman, near whom I had recently gone to live, into the arcana of his art, and was witness to the 'milliner's trickery,' as your correspondent, Philip Havapek, not inaptly calls it, and scrutinised the form and nice adaptation of the instrument employed, and saw the slow and laborious process by which through its means a Pink is fitted to shine among its compeers like a young lady at a ball. And as I pondered over the matter, now marvelling at the skill of the operator, now despairing of attaining to his tact, it struck me, as it has struck your correspondent, that there is something very unnatural in all this, and calculated to mislead the public by establishing a deceptive difference between shown flowers and grown flowers."

But as I have since considerably modified my opinion and become reconciled to the practice, it is fair to ask whether I can give a sufficient reason for having done so; and this I will try to do.

In the first place, wildness is not a fair representation of Nature, any more than license is of liberty, or a savage the genuine type of a man. The same process of reasoning, if pushed to its legitimate limits, would forbid us to graft or to bud. We must not prune a Rose tree or train a Fuchsia into shape by the knife. To stop a Pelargonium, and to tie out or peg down its branches, would be tailor's trickery; and in fact the striking from cuttings itself is an unnatural process, and must be abandoned. We broke into the principle when we became cultivators, and the practice must now be tried on far narrower and less sweeping grounds.

Again, no Pink of the present day, and all but no Carnation or Picotee, can bloom without splitting its calyx and becoming utterly unsightly, unless the calyx is supported by a tie; and this is dressing as much as the disposal of the petals after expansion. If this be equally objected to, as it often is, the objection is really against having double flowers (which are unnatural), for no single Dianthus splits its pod. But if we will not be content without having double flowers —and no good reason can be given why we should— we must be content to take the trouble they entail; just as, when we choose to have flowers in pots, or exotics in a conservatory, we place them in an unnatural condition, and may no longer leave them to unaided Nature.

The process of dressing is applicable to but few flowers. At the period I have alluded to there were a few Pinks (there were no Carnations even then), useless to the amateurs who did not exhibit, but which might by pains be made to push others, intrinsically better than themselves, from their place at a show. But there are none now. The good may be made to look better, but none unworthy of a place in any selection can now by such means be rendered fit for exhibition. Very few flowers admit of much manipulation—few other than those of the Pink tribe require more preparation from the "milliner" than Philip Havapek would himself unconsciously perform upon a Rose before he presented it to a young lady—namely, by depriving it of its thorns, or of whatever is dead or unsightly and could detract from the beauty of the offering, and by presenting it in its most attractive form; and in the Pink tribe the practice must be judged of simply as a matter of competition before judges, like the modes of preparing cattle for an agricultural meeting, in which we consumers are no further interested than as it is a means by which the beef and mutton of the country in general is better than it used to be. The system is part and parcel, though a small one, of that adaptation of means to requirement by which the old greenhouse, with its straggling unsightly stems, with here and there a stray blossom, has given place to a well-ordered collection of healthy and shapely trees, which each in its turn become masses of bloom in their season.

Another correspondent—yet with us—Mr. Dodwell, then of Derby, wrote:—"Your correspondent speaks most mistakenly and wide of the fact when he tells us that, having become a purchaser, as the result of admiration excited by the beauty of Pinks, Picotees, or Carnations at an exhibition, 'do what he will, they are mere mops.' He never has done what he could, or he might have realised beauty equal to that which elicited his admiration. The evil he charges against the florist is simply due to his determined disinclination to give time and trouble to the attainment of those objects from which, when attained, even he cannot withhold his admiration. Your correspondent might grow and display subjects equal to anything that has been shown, but he never will so long as he hopes never to have the inclination. First-rate flowers combining all possible beauties from Nature's hands are indeed desirable, but I fear they are what your correspondent will never realise on earth.

"The question lies in a nut-shell: it is simply, shall art be admitted to assist Nature? If your correspondent negatives this, he will carry us back to the condition of the savage, where most of us would decline to follow him; if he affirms it, he can show no reason why art should not be given to the flower, which is not equally applicable to the plant; a condemnation of the one is a condemnation of the other, and if valid would apply to the splendour of the diamond and every object of beauty art creates or enhances, and condemn all to remain in obscurity because their beauty was conferred by the adventitious said of man.

"This is the *rationale* of 'dressing flowers,' and the florist as correctly developes a beauty in his flowers as does the sculptor when he gives to the shapeless stone the ideality of his genius."

The originator of the discussion closed it thus:—"I am content when I find opposed to my opinion such men as 'Iota' (the Rev. George Jeans) and Mr. Dodwell. I am led to doubt the accuracy of my own judgment, and though somewhat in the position of 'a man convinced against his will,' what I intend doing is carefully to examine the exhibitions of florists' flowers next season, and well weighing what my opponents have advanced. I am not sorry I mentioned the subject, since it has promoted a useful discussion, which now may be fairly allowed to rest upon its merits."

FORESTRY

THE forest scene before me at this moment is not only wild and picturesque in the extreme, but sublime and awfully grand. The tempest rages loud and furious, and the forests and woodlands no less than the sea frown and surge in terrible agony. While the German ocean, a mile or so distant, foams and dashes its white spray against the defiant rocks and subtle shingle on the beach, the wind, as if for once let loose and free beyond control, spends its rage and fury upon the sylvan denizens, and makes the strongest of them quake and quail like birds before the falcon, or straw and dust before the whirlwind.

Inasmuch as facts are stronger than fiction, so the lessons in forestry to be here learned, from what I am eye and ear witness to, are infinitely better than any that can be learned from abstract thought or study. The wind, which in derision is sometimes termed "the head forester," has during the last forty-eight hours blown a perfect hurricane, first from the south and then from the north. Damage to the forests yesterday was considerable, but nothing compared with that of to-day, especially between the hours of 11 A.M. and 2 P.M., when it had attained its climax. I am here surrounded with many valuable, old, and splendid trees, principally hard woods of various sorts, and it is the disastrous effects of the wind upon the various species that I wish briefly to narrate, with a view both of showing what have been the present effects and to point out a few things tending to mitigate future evils. In the first place, while it is most desirable to have trees of some kind growing near dwelling-houses, they should never be so near as to make their falling or blowing over a matter of risk and danger either to life or property. The trees most objectionable near houses in this respect are the common Ash, English Elm, Horse Chestnut, and the whole family of Poplars and Willows. These are most dangerous, on account of their branches and limbs breaking off freely, and without any previous indication of doing so. Those trees whose branches are least liable to do damage by breaking off with wind are the Lime tree, which, though frequently broken, yet usually hang by the tree till cut off. The Wych Elm also hangs tenaciously to the tree, and seldom breaks off so clean or freely as to do serious damage. The British Oak, too, like the Elm, breaks and hangs tenaciously by the parent stem. The Beech, though less tough in the grain than the preceding species, does not usually incur much risk, as its numerous, thin, slender twigs either soften the wind as it passes through its boughs, or greatly break the force of its fall from the tree. There is no positive necessity for having tall, brittle forest trees growing near buildings at all, since a good selection can be had from others less dangerous, and even medium sized trees and shrubs near dwellings are far preferable. Indeed, I would not advise any forest tree to be planted or allowed to grow so close to a dwelling house as to endanger its inmates with it. I have often seen trees otherwise dangerous near dwellings rendered perfectly safe, shelter-giving, and ornamental by judiciously pollarding them. It would be an injudicious act to cut down any such old, remarkable, or romantic subject as a tree, but it would be a sadder tale to tell posterity that through want of intelligence or neglect to lighten a limb or wholly pollard a tall tree it was allowed to blow down and damage a building, or maim or kill a human being. In winter comparatively little damage results to hard-wood forest trees as then they are relieved of their foliage and the wind whistles and howls through their branches without inflicting any damage. From now till the time of defoliation deciduous trees are in great danger from winds, and their danger is greater in proportion to the amount of foliage they sustain and to their exposure. We have seldom seen severe gales till October, and then, except the Oak, most other forest trees have put off their summer verdure. It should also be noticed respecting trees near dwellings that their roots are sound and healthy, and specially that they are not too deeply planted. Nothing is more fatal to trees than deep planting, and unless the roots are sufficiently near the surface to allow them to swell and to expand above it, take a strong hold and gain firm anchorage, they are not safe anywhere but especially near dwellings or where their sudden fall would incur risk. I have seldom or never seen so many branches of hard-wood strewn over the ground as at this moment, and yet, as it fortunately happens, no serious damage is here sustained. Indeed to look around one might conclude the work had been fatal and complete to the whole woodland, while in reality after a few days of half-a-dozen expert woodmen it will not appear to any one that anything serious had happened. *C. Y. Michie, Cullen House, Banffshire, Sept.* 16.

Notices of Books.

Handbook of the British Flora. By George Bentham, F.R.S. Reeve & Co. 4th edition.

We are glad to welcome another edition of this book, the best and most useful for a beginner of all the modern British Floras. The descriptions of the plants are so many word-pictures, and the general remarks full of interest and information. For advanced students and those who require a greater amount of detail, works cast in a more technical mould and dealing with more subtle points of difference are needed, but for the beginner or amateur this book is admirable, as supplying an excellent basis for further enquiry, and as opening up suggestively departments of the science ignored by most British Floras. The attempt to give or to fabricate English names for the genera where none exist in popular parlance having been unsuccessful, we should have been glad had these artificial names been wholly dropped, retaining only those which custom has sanctioned; thus while there are excellent reasons for retaining "Parsnip," the propriety of employing such words as "Sea Peucedan," "Broad Peucedan," and the like is much less obvious, seeing that no one, to our knowledge, ever speaks of the plants themselves save under the names Peucedanum officinale or P. Ostruthium, as the case may be. We should be glad to see references to plates and a rather more extended synonymy; but, on the other hand, the short references to the representatives of the exotic relatives of our wild plants found in gardens, which constitute a feature of this work, are very serviceable to amateurs, and do much to enhance the interest of the study.

—— *Notes on Glengariff and Killarney*, and *Glengariff as a Health Resort and Sanatorium* (Bush, Charing Cross), are both works destined to make more widely known the beauties and other advantages of Glengariff. A great deal of information is given, as well as tempting woodcuts and useful maps.

—— *Collecting Butterflies and Moths*, by Montagu Brown (*Bazaar* Office, 170, Strand), is a capital little book to put into a boy's hands. It is an extract from the author's larger work on *Practical Taxidermy*.

—— The *History of Glanville's Wootton, including its Zoology and Botany*, by C. W. Dale (Hatchard), is a list of the birds, beasts, fishes, insects, and other productions of a Dorsetshire village, prefaced by a slight account of the village and its church. There seems little to interest an outsider in the place, while the bare catalogue of its inhabitants (the human denizens excluded!) has but little value when unaccompanied by those notes of observation which must have been made by so diligent a collector as the author of this book proves himself to be.

—— *Vick's Illustrated Monthly Magazine* (Vick, Rochester, N.Y.), though issued by a well-known American nursery firm, is not a trade catalogue or an advertising circular, but a well-got-up magazine with a variety of short articles on plants and gardens likely to be useful to amateur gardeners.

—— *The F. and F. Magazine* (D. S. Curtiss, Washington, U.S.) is short for Floral and Fruit Magazine, and like the preceding is an American publication containing a variety of short paragraphs on garden matters, and many other things besides.

—— *Gardening for the Million*, by George Glenny (Houlston & Sons).—The fact that 135,000 copies of this little book have been distributed relieves us from the necessity of saying anything more than that a new edition has just been issued.

PUBLICATIONS RECEIVED.—Clavis Hymenomycetum, Cooke and Quelet (Hardwicke & Bogue).—Flowers, their Origin, Shapes, Perfumes and Colours, by J. E. Taylor, Ph.D., 2d edition (Hardwicke & Bogue).—Belgique Horticole.—Illustration Horticole.—Deutsche Garten und Obtsbau Zeitung.

THE VILLA GARDEN

CLEANLINESS IN THE GREENHOUSE AND FRAMES.—If in its moral aspects "cleanliness is next to godliness," in gardening it ranks as one of the cardinal virtues; it is all-important, and especially at that season of the year when

> "September's kiss is on the woods,
> And garner'd is Pomona's wealth;
> The squirrel thinks of winter rest—
> Begins to store his nuts by stealth;
> The brown leaves rustle in the wind,
> And golden is the Oak tree's crown;
> The red Beech drops her ripened mast,
> And chestnuts' husks come showering down."

Now that the dull, dead season, as it is termed, is coming so rapidly on us, the attention of gardeners of all degrees is turned to the preparations for the coming winter—and one great matter is that of cleanliness.

First let the greenhouse be thoroughly cleansed from top to bottom while the weather is fine and drying. All the plants can be removed to a frame, or put on one side of the house while the other is being done; then the woodwork and glass of the roof, and then the walls, shelves, and floor should be swept, scrubbed, and sweetened, getting rid of dirt and vermin in one act. If there be broken or cracked glass in the roof or sides, or the heat and drought of summer has parted the putty from the woodwork, to the imminent danger of admitting drip, let all these defects be remedied at once. There is no knowing what weather is in store for us—wild autumn winds and heavy rain, or killing frosts: there is nothing like being ready. A sense of security diffuses itself abroad in the mind of the Villa gardener when he has cleansed and made everything about his house neat and snug for the winter, and this feeling greatly enhances his enjoyment of his plants. And this feeling appears to be sensibly shared by the plants. They revel in a sense of security and a proper condition of things; and brightening with a consciousness that

> "Finds Nature's promise faithful,
> Attain their humble meed,"

have their life warmed with a new strength that expresses itself in a more vigorous growth and a ruddier aspect of well-being. If plants could but give vocal utterance to their emotions, what scathing protests against neglect, or songs of joyous praise for loving attentions, they would give utterance to.

Plants greatly need cleanliness. There are dust deposits on their leaf that can be cleansed by means of the syringe in summer, but in autumn and winter, when it is injudicious to syringe, because the dissemination of damp should be avoided, the leaves should be cleaned with a sponge when requisite. On a soft, balmy autumn or winter day, when the sun shines out with a soft and tender glow, as if sorrowing over the small service it could do to the temperate zone at that period of the year, the plants, or such of them as can be handled with safety, might have their heads immersed in a tub of soft water, and then the water shaken from their leaves. This should be done in the morning, so that the leaves and stems may become dry before night.

All decaying leaves should be removed; their presence is sometimes the means of conveying rot to plants; their absence is an additional guarantee for their security. On the lowest ground of all plants look much better when deprived of dying leaves. The sense of comfort and security they feel when deprived of them who shall estimate it? Particularly is this attention to the matter of the removal of dead leaves necessary in the case of store-pots of cuttings and of plants lifted in autumn and wintered in pots to give cuttings in spring. Many a promising pot of cuttings has been destroyed through rotting leaves gradually affecting the whole. An attentive Villa gardener will go over them once or twice a week, removing signs of decay, and stirring the surface of the soil.

The last act is one of supreme importance. Despite the greatest care exercised in potting plants, it will sometimes happen that the drainage gets deranged, the soil falls down upon and buries it, and a free passage of water through the earth is prevented; then the soil

becomes sodden, a growth of moss spreads over the surface, the inactive roots decay through the sourness and coldness of the soil, and they yield up the ghost. For wintering plants successfully there is nothing like a free open soil; it is therefore well to examine the drainage of choice plants in autumn, and by timely remedies to remove as far as possible from the plants a condition of peril. Stir the surface soil when it shows signs of becoming sodden or hard. In stirring it loosen it gently, so as not to disturb the roots. If necessary remove it, and add something fresh; and indeed it is a good plan, and one fraught with the best consequences to the health of the plants to top-dress in autumn, and in doing so to add something open and gritty. We have found a soil in which finely broken charcoal forms a good part an excellent one for this purpose. We have recently top-dressed for the autumn and winter a number of soft-wooded plants, and straightway there appeared to mount up into their leaves a gratifying sense of contentment and enjoyment.

There yet remain the pots, and let these be kept clean also. There is nothing like a freely porous pot to winter a plant in successfully. The opposite of this condition is a pot with a close, smooth surface, that becomes sticky and nauseous, with a growth of green over its surface. When this puts in appearance and the pot cannot be changed, let it be washed with a little soap and water, taking care not to immerse it in the water, as the soil will be wet enough already. And when, as sometimes happens, this growth of green spreads from the pots to the shelves, let them be cleansed also, so that all the surroundings of the plant may be clean, health-giving, and comforting to it. There is a wonderful instinct in plants, which, for aught we know to the contrary, may correspond with human consciousness, and their perception of comfort and cleanliness finds an expression of thankfulness in healthy leaves and lovely flowers.

STORAGE OF SOIL.—This is a matter of considerable importance to those Villa gardeners who grow a few special subjects and require varying soils at certain seasons of the year. In the case of ordinary Villa Gardens space is somewhat contracted, and many shifts and expedients have to be resorted to to stow away soils, &c. We have found some soda casks, which hold about 2½ to 3 bushels each, most useful for the purpose. They can be bought at a grocer's for a small sum each, and if in good condition will last for a long time. A half-dozen of these occupy but a small space—say under a wall—and all that is requisite is a kind of movable ridge roof, constructed of any old boards, and tarred over to protect the contents of the casks from wet. In one of these we have put turfy loam, in another leaf-mould, in a third sand, in a fourth powdered charcoal, and so on; and if they get pretty dry during the summer it is of small moment, as it is an easy matter to moisten the various kinds when required for potting. When a compost is mixed together it is exposed to the sun and wind for a day or two to get sweetened, and kept well turned over, and then when moistened it is ready for use. There is always suffieient moisture in the soil to keep the staves of the casks from parting, but it is a good practice to shade the casks during summer, if they are in a position exposed to the sun.

Reports of Societies.

Crystal Palace: *September 24 and 25.*—The Crystal Palace Company are to be congratulated on the success of their twenty-third annual exhibition of fruit held on Tuesday and Wednesday last, which, if not remarkable as a display of more than usually fine productions, at least included a great deal that was very good, and little that was positively bad, while in extent it was certainly a great improvement on the displays of recent years—a result which many who were present considered was quite as much owing to the well-directed labour expended on the show by Mr. Thomson, the Garden Superintendent, whose arrangements were all that could be desired, as to the inducements to exhibit held forth in the schedule, though it must be admitted that this was an improvement on last year's.

The competition in the classes for collections of fruit was very good, and generally very close. For a collection of twelve dishes, of which there were four exhibitors, the 1st prize was won by Mr. Coleman, gr. to Earl Somers, Eastnor Castle, who staged very perfect dishes of Muscat of Alexandria and Black Alicante Grapes, Read's Scarlet-fleshed and Eastnor Castle Melons, a fine dish of Barrington Peaches, Pine-apple Nectarines, rich in colour; Williams' Bon Chrétien Pears, Morello Cherries, Brown Turkey Figs, Golden Drop Plums, and good specimens of Queen and Smooth Cayenne Pines. Mr. Sage, gr. to Earl Brownlow, Ashridge, was a very good 2d, so good indeed that the superior quality of the Grapes only in Mr. Coleman's collection gained him the highest number of points. Mr. Sage's Grapes, Black Alicante and Muscat of Alexandria, were small in bunch, but finely coloured, and carried a beautiful bloom. His other fruits consisted of a good Queen Pine, a fair Smooth Cayenne, Walburton Admirable Peaches, fine in size and colour; Pitmaston Orange Nectarines, Eastnor Castle and Colston BassetMelons, Williams' Bon Chrétien Pears, Coe's Golden Drop Plums, Morello Cherries, and Brown Turkey Figs. Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, came in 3d, showing, amongst other things, a fine dish of Lady Downe's Grapes, well ripened Muscats, and fine examples of Marie Louise Pears and Jefferson Plums. The other competitor was Mr. James Fry, gr. to L. J. Baker, Esq., Haydon Hall, Eastcote, who had a very meritorious lot of fruit, including Lady Downe's Grapes, fine in berry; Lady Palmerston Peaches, of good size, but pale in colour; and Darwin Nectarines, small in size, but of a rich crimson and orange colour. In the class for a "collection of six dishes (distinct kinds) exclusive of Pine-apples" there were no less than sixteen competitors, which were, however, reduced to ten by reason of the others having placed themselves *hors de combat* through staging two dishes of Grapes. The 1st prize went to Mr. C. Haycock, gr. to R. Leigh, Esq., Barham Court, Maidstone, who put up a capital dish of Black Alicante Grapes, well coloured and carrying a thick heavy bloom, a large Golden Gem Melon, Louise Bonne of Jersey Pears of fine size, Lord Palmerston Peaches, also large and well coloured, Golden Drop Plums, and Pine-apple Nectarines, very highly coloured. Mr. C. J. Goldsmith, gr. to H. T. Lambert, Esq., Sandhills, Bletchingley, came in 2d with small but well ripened Muscats, Prince of Wales Peaches, Doyenné du Comice Pears, Scarlet Gem Melon, Duchess of Gloucester Apples (a beautiful rich crimson-coloured variety), and Golden Drop Plums, all of excellent quality. The 3d award went to Mr. H. Folkes, gr. to T. F. Halsey, Esq., M.P., Gaddesden Park, Hemel Hempstead, who had a very fine dish of Muscats in all respects except colour; good Beurré d'Amanlis Pears, a fine Eastnor Castle Melon, and capital Late Admirable Peaches. In the other collections we noted very good examples of Muscat of Alexandria, Buckland Sweetwater and Black Alicante Grapes, Princess of Wales and Salway Peaches, and Marie Louise Pears. The next class, which was for six dishes distinct, exclusive of Pines and Grapes, was a more difficult one to judge, so very evenly matched were the ten lots staged. Mr. C. Haycock again secured the 1st prize, with an excellent display, consisting of Brockworth Park Pears, Lord Palmerston Peaches, Pine-apple Nectarines, Pond's Seedling Plum, Kerry Pippin Apples, and a large Melon. The next prize should have gone to Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, who had the same variety of Pear, an Eastnor Castle Melon, Morello Cherries, Late Admirable Peaches, Coe's Golden Drop Plums, and Brown Turkey Figs, all of the best quality, but there were twelve fruits of the last-named instead of six, and he was thrown out; the 2d prize being awarded to Mr. B. Chisholm, gr. to R. C. Taylor, Esq., Boughton Place, Maidstone; and the 3d to Mr. Wildsmith, gr. to Viscount Eversley, Heckfield Place, Winchfield.

Next came the Grapes, for which there were eleven classes, in all of which the competition was exceedingly good and the quality of the fruit very good indeed, except perhaps in the Black Hamburgh class, in which colour was very deficient. The best collection in the class for "ten kinds, two bunches of each," undoubtedly came from Messrs. H. Lane & Son, of Berkhampstead, but they were thrown out of the competition through showing Bowood Muscat and Muscat of Alexandria Grapes, which the judges could not recognise as distinct varieties, and they therefore only Highly Commended the collection which, in addition to splendid samples of the Muscats named, included also Black Hamburghs, Black Prince, Gros Colman, Trebbiano, Barbarossa, Black Alicante, Buckland Sweetwater and Muscat Hamburghs, all large in bunch and well finished off. The 1st prize was awarded to Mr. Wildsmith, whose bunches were smaller than the Messrs. Lane's, though of capital quality as regards size of berries and colour. His varieties were Black Hamburgh, Mrs. Pince's Black Muscat, Buckland Sweetwater, Black Alicante, Barbarossa, Trebbiano, Gros Colman, with splendid berries, well coloured; Lady Downe's, and Venn's Black Muscat, which Mr. Wildsmith considers a distinct and very good variety. Mr. J. Bannerman, gr. to Lord Bagot, Blithfield, Rugeley, was 2d; and Mr. J. H. Goodacre 3d. Messrs. J. Peed & Sons, Roupell Park Nursery, also competed, but could not have taken a prize in consequence of showing the Muscat of Alexandria and Tottenham Park Muscat, which could not be recognised as distinct. With five varieties, two bunches of each, Mr. Sage came in 1st, showing good examples of Trebbiano, Black Hamburgh, Black Alicante, Lady Downe's, and Muscat of Alexandria. Mr. J. Woodbridge, gr. to the Duke of Northumberland, Syon House, was a good 2d, with Madresfield Court, Lady Downe's, Muscat of Alexandria, Black Alicante, and Golden Champion, all thoroughly good fruit. Mr. Mowbray, gr. to the Earl of Leven and Melville, Fulmer, Slough, came in 3d; and amongst the unsuccessful competitors was Mr. Kirk, gr. to Mrs. McKie, Castle Douglas, Kirkcudbright, who staged some of the samples he exhibited so successfully recently at Edinburgh, but which, having lost their freshness, were not so fortunate on this occasion. The best of fifteen dishes of Black Hamburghs came from Mr. Wildsmith, whose bunches were small indeed, but highly finished; Mr. Upjohn, gr. to the Earl of Ellesmere, Worsley Hall, good in bunch and berry; and Mr. G. Goldsmith, gr. to P. C. Hardwick, Esq., Hollanden, Tonbridge, also good in size and nicely finished. The Muscat of Alexandria class was the best of all, consisting of thirteen dishes, every one of which would pass muster anywhere. The 1st prize was well won by Messrs. H. Lane & Son, whose long tapering bunches were perfect models of high-class cultivation. The 2d was taken by Mr. Coleman with a specially fine sample, and the 3d by Mr. W. H. Bannister, gr. to H. St. V. Amer, Esq., Cote House, Westbury-on-Trym, Bristol; and an extra prize was awarded to Mr. Walter Jerman, gr., Westwood Lodge, Isle of Thanet, both showing very fine examples. The best of nine dishes of Madresfield Court came from Mr. Woodridge, Mr. Ward, gr. to T. N. Miller, Esq., Bishops Stortford, and Mr. Upjohn; and all were good. Of Gros Colman there were four dishes, and two of them were especially well finished. These came from Mr. Coleman and and Messrs. Lane & Son. The latter had the largest bunches, but they were not equal to Mr. Coleman's in colour and bloom. The 3d best came from Mr. Upjohn. The Lady Downe's class brought out fifteen competitors, and Mr. Coleman again came to the front with exquisitely finished samples; the next best, also exceedingly good, coming from Mr. Jordan, gr. to Birket Foster, Esq, Witley, near Godalming, and Mr. Bannerman. For Buckland Sweetwater, of which there were eleven samples, the 1st prize went to Mr. C. J. Bungay, gr. to W. Smith, Esq., Hill House, Herne Hill, who had good sized and well finished bunches; the 2d to Mr. G. Gough, gr. to E. M. Barrington, Esq., Little Malvern Court, Worcester; and the 3d to Mr. G. Masters, gr. to F. Day, Esq., Oatlands Park, Weybridge, both showing small bunches but of high quality. In a class for any other white kind Mr. J. Atkins, gr. to Colonel Lloyd-Lindsay, M.P., Lockinge Park, Wantage, came in 1st with a very good sample of Pearson's Golden Queen, the best three bunches indeed that we have seen for some time. A very good dish of Foster's Seedling, shown by Mr. Jordan, came in 2d; and the same variety also in fine condition, and shown by Mr. Jones, gr. to Lord Calthorpe, Elvetham Park, Winchfield, was 3d. In the corresponding class for any other variety of black Grapes, Messrs. H. Lane & Son were well 1st with three splendid bunches of Black Alicante; Mr. T. Perks, gr. to C. W. Dusseldorf, Esq., Laurie Park, Sydenham, was a good 2d, with Gros Guillaume; and Mr. Goodacre 3d, with Black Alicante. The heaviest bunch exhibited was one of Trebbiano weighing 16 lb., and shown by Mr. Kirk, gr. to Mrs. McKie, Castle Douglas. It was a well filled bunch, standing up firmly on its stand, and proved a great centre of attraction. The next largest was a bunch of Gros Guillaume weighing 9 lb. 2 oz., and shown by Mr. C. Tyler, gr. to R. Gosling, Esq., Hassobury, Bishops Stortford; and the 3d, Black Hamburgh, weighing 7 lb. 2 oz., shown by Mr. Bones, gr. to D. McIntosh, Esq., Havering Park, Romford.

Pine-apples were fairly represented, considering the decline that is gradually but surely taking place in their cultivation. The best Queens came from Mr. Sage, Mr. Coleman, and Mr. J. Akehurst, gr. to S. Copestake, Esq., The Grove, Highgate Road. A fine Smooth Cayenne, weighing 7 lb. 4 oz., shown by Mr. C. Ross, was the best in that class; and a good fruit from Mr. Pragnell, gr. to G. D. W. Digby, Esq., Sherborne Castle, was 2d; the 3d going to Mr. Wilson, gr. to Earl Fortescue, Castle Hill, North Devon. In another class Mr. Miles, gr. to Lord Carrington, came in 1st, with a fine Charlotte Rothschild, weighing 7 lb.

Peaches were thoroughly well represented for the season, thirty-five dishes being staged. The best was a fine one of Lord Palmerston, shown by Mr. Coombs, Sheen House, Mortlake; the 2d, a capital one of Late Admirable, from Mr. Smith, Wotton Gardens, near Aylesbury; and the 3d, a dish of Barrington, from Mr. Coleman, also of fine quality. The class was so good a one that the judges awarded extra

prizes to Mr. C. J. Goldsmith for a dish of Princess of Wales; and to Mr. Gibson, gr. to F. Burnaby Atkins, Esq., Halstead Place, Sevenoaks, for a beautifully coloured dish of Lady Palmerston. Nectarines were rather scarce, only eleven dishes being exhibited. Here Mr. Coleman came to the front again with a good dish of Pine-apple; Mr. Neighbour, gr. to G. Wythes, Esq., Bickley, Kent, coming in 2d with the same variety, more highly coloured than Mr. Coleman's, but not so large; and Mr. G. Wortley, gr. to Admiral the Hon. P. Carey, South Norwood Hill, was 3d with Prince of Wales. Of Figs there was only one dish—a most unusual thing at this season, and Mr. Sage took the 1st prize with that.

Of three dishes of Plums there were about two dozen exhibitors, and Mr. Sage was again 1st, showing Coe's Golden Drop, White Magnum Bonum, and Jefferson. The 2d went to Mr. Wells, gr. to R. Ravenhill, Esq., Ferndell, Windsor Forest, who had Goliath, Coe's Golden Drop, and Victoria; and the 3d to Mr. Staple, gr., Chipstead Place, Sevenoaks, with Coe's Golden Drop, Magnum Bonum, and McLaughlin's Gage. Extra prizes were awarded to Mr. J. Fry and Mr. Coleman.

In the class for three dishes of Dessert Apples there were thirty competitors, but the samples staged did not seem to be of above the average merit. The 1st prize was won by Mr. E. Bowles, gr. to W. Skinner, Esq., Beresford House, Maidstone, with Ribston Pippin, Cox's Orange Pippin, and Duchess of Gloucester. The 2d went to Mr. C. J. Goldsmith, who had an unnamed variety, King of the Pippins, and Ribston Pippin; and the 3d to Mr. C. Haycock, for Ribston Pippin, Mother, and Reine des Reinettes. The culinary class was a remarkably good one, there being some forty-three exhibitors, and the samples of fine quality. Mr. E. Bowles again took the lead with very large fruits of Stone's Apple, Warner's King and Winter Hawthornden, beating Mr. James Pluck and Mr. P. V. Pluck, both of Jersey, who came in 2d and 3d, the former with grand samples of Grosse Ménagère, Reinette d'Angleterre, and Alfriston; and the latter with Mère de Ménage, Pott's Seedling, and Alfriston, of but slightly inferior merit. Extra prizes were awarded to Mr. Mundell, gr. to R. Allerton, Esq., Prittlewell, Essex, who had fine dishes of Warner's King, Cellini, and Emperor Alexander; and to Mr. C. Haycock, for Belle Dubois, Reinette du Canada, and Emperor Alexander, all of grand quality. Dessert Pears were represented by twenty-seven collections of three dishes each, and generally speaking the quality was higher than in the dessert Apple class. Mr. C. Haycock was a good 1st, with fine examples of Doyenné du Comice, Fondante de Cuerne, and Louise Bonne of Jersey. The 2d went to Mr. Gough, who had Williams' Bon Chrétien, Gansell's Bergamot, and Louise Bonne of Jersey; and the 3d to Mr. James Dean, Fitzroy Place, Godstone, with Williams' Bon Chrétien, Marie Louise, and Louise Bonne of Jersey. A fine lot, consisting of Beurré Superfin, Louise Bonne, and Duchesse d'Angoulême, shown by Mr. James Pluck, was awarded an extra prize. Of culinary varieties there were only ten collections, and the highest award went to Mr. James Pluck, who had very large specimens of Grosse Calabasse, Catillac, and Belle Angevine. Mr. P. V. Pluck was 2d, and Mr. W. Fanning, The Convent Garden, Roehampton, was 3d.

Scarlet-fleshed Melons were represented by some twenty-one samples, and from these the judges selected an unnamed seedling shown by Mr. J. Atkins for the 1st prize; a Reed's scarlet-flesh from Mr. Woodbridge for 2d; and a Scarlet Gem from Mr. C. J. Goldsmith for the 3d. In the green-fleshed class the judges' labours were somewhat heavier, as they had thirty-three fruits to select from. The 1st prize went to an unnamed variety from Mr. Haycock; the 2d to a Golden Perfection from Mr. C. Osman, the South Metropolitan District Schools, Sutton; and the 3d to Dicksons' Exquisite, from Mr. C. Tyler.

To the miscellaneous class the Crystal Palace Company contributed very fine examples of the male and female cones of Encephalartos villosus, grown at the Palace by Mr. Thomson; and large collections of Apples and Pears, &c., came from Messrs. Paul & Son, Cheshunt; Messrs. William Paul & Son, and Messrs. Rivers & Son; and a small collection of Apples from Mr. Fowle, gr. to Sir H. Mildmay, Dogmersfield. Mr. J. Muir, gr. to C. R. M. Talbot, Esq., sent an interesting collection of thirteen varieties of Oranges and Lemons grown at Margam Park, South Wales; and Mr. D. P. Bell, Clive House, Alnwick, exhibited a good sample of the Alnwick Seedling Grape, which was awarded a First-class Certificate.

Collections of vegetables were numerously shown, and were moreover of a uniformly good quality. In the class for sixteen distinct varieties, the highest honours again fell to the lot of Mr. Pragnell, gr. to G. D. W. Digby, Esq., Sherborne Castle, Dorset, who certainly put up a very fine assortment, which included Major Clark's solid red Celery, Carentan Leeks, James' Intermediate Carrots, long white Vegetable Marrows, Exhibition Beet, Veitch's Autumn Giant Cauliflower, Globe Artichokes, Early Snowball Turnips, Jackson's Favourite Tomatos, White Spanish Onions, Tender and True Cucumbers, Student Parsnips, Schoolmaster Potatos, Brussels Sprouts, Ne Plus Ultra Peas, and Scarlet Runner Beans. The 2d prize fell to Mr. Chaff, gr. to C. H. Goschen, Esq., Ballard's Addington, and the 3d to Mr. J. H. Goodacre, an extra prize being also awarded to Mr. R. Phillips, gr. to Captain Jackson, The Deodars, Meopham. For a collection of eight varieties, exclusive of Potatos, there was also a good competition, and the prizes went in the following order—to Mr. John Baker, Broad Street, Bampton, Oxford; Mr. W. Iggulden, gr. to R. B. W. Baker, Esq., Orsett Hall, Romford; and Mr. J. Day, gr. to A. Seymour, Esq., Norton Hall, Daventry. Mr. C. W. Howard, of Canterbury, had the best four dishes in a rather poor class.

No prizes were offered for autumn flowers, but the interest in the show was greatly enhanced by a large contribution of cut Roses from Messrs. William Paul & Son, Waltham Cross; a good collection of Dahlias from Messrs. Rawlings Bros., of Romford; some good Asters from Mr. R. Brown, gr. to F. T. Bury, Esq., St. Leonard's Hill, Windsor, and Mr. Morgan, gr. to Major Scott, Wray Park, Reigate; and a fine stand of cut blooms of choice varieties of the new tuberous-rooted Begonias from Messrs. John Laing & Co.

The International Potato Exhibition.—Whilst the pomologists were on Tuesday busy in elaborating their brilliant display of fruits in the north nave of the Crystal Palace, the Potato growers were not less active in setting up their many and varied assortments of tubers, and a wonderful show they made. Whether there may have been a few less or a few more of exhibits this year than on previous occasions it would be difficult to say, even by those who are regular *habitués*, but those who have not yet seen an International Potato Show will understand something of its extent and the nature of the competitions when we state that exactly 1539 dishes were staged in the sixteen classes of the schedule, and that these contained the interesting arithmetical number of 13,851 tubers. Exception is sometimes taken to the term international, because few or no Potatos from other countries are staged. This, however, is not the fault of the management, as the prizes are quite as open to the growers of all other lands as to those of Great Britain. Such, however, is the perfection to which here Potato cultivation is brought, as far as relates to the production of choice show samples, that it is evident no foreigner would stand the least chance in the competition.

One special feature characterised the recent show in relation to the samples staged. There was more general evenness of quality, and the average of quality, as far as relates to size and appearance, was higher than on any former occasion. This fact speaks volumes for the nature of the lessons inculcated to growers by the general judging lessons that are not vitiated even when, as in the present instance, some of the judges made mistakes in their awards. Fortunately, these blunders were the exception, and only serve to throw up in stronger relief the higher quality and beauty of those collections or dishes generally selected for awards.

The premier class of the schedule was the twenty-four dishes, the valuable prizes in which were given by the Crystal Palace Company, the Vice-President, Mr. Jas. Abbiss, J.P., and by Mr. William Kerr, seedsman, of Dumfries. Here, for the second time, Mr. P. McKinlay, the popular hon. secretary, was placed 1st, with a grand lot of tubers, so fine, clean, and good, as to give the judges no great difficulty in the selection of the 1st prize lot. These consisted of coloured kidneys, Superior, Extra Early Vermont, Late Rose, Trophy, and Beauty of Hebron; rounds, Grampian, Lady Webster, Red Emperor, Blanchard, Shelburne, and Breadfruit. White kinds were King of Potato, New Cambridge Kidney, Edgcote Seedling, Beckenham Beauty, Snowflake, International, Woodstock Kidney—the latter a grand new kind, and the sample one of singular beauty; Early King, too much like King of Potato; and Ashtop Fluke. Of white rounds, Onwards, Rector of Woodstock, Porter's Excelsior, and Schoolmaster. Of this collection five sorts of the very best were of Mr. Fenn's raising; a higher tribute to any raiser of Potatos could hardly be paid. Taking exactly the same place as last year, Mr. James Pink, of Lee Court Gardens, Faversham, was 2d, with a very handsome even lot of tubers, only wanting a little more freshness and finish to have been equal with the first collection. Amongst his kinds as exceedingly good were Trophy, Early Rose, Garibaldi, Grampian, Triumph, and Blanchard, coloured sorts; International, Magnum Bonum, and Waterloo Kidney, white sorts. The 3d place was awarded to Mr. Wm. Finlay, of Wroxton Abbey Gardens, Banbury, whose collection was remarkably pretty and clean, but a trifle too small for this class. Mr. G. Baguley, Lysiston, Newark, and Mr. W. Ellington, Mildenhall, Soham, were 4th and 5th respectively. In this class twelve collections were staged. The largest competition was found in the class for eighteen kinds, to include Sutton's Magnum Bonum. The whole of the five prizes, amounting to 19 guineas, were liberally given by the Messrs. Sutton & Sons of Reading. Here there were not less than twenty-four collections, making a total of 432 dishes for the judges to choose the best from. The general average was so good that, in despair evidently of selecting the best quality, the censors would seem to have made the award of the 1st prize solely to the feature of size, the collection staged by Mr. F. Cresswell, gr. to Lord Gwydyr, Ipswich, being one of the weightiest, and literally biggest, collections of eighteen kinds we have ever seen staged. Such sorts as Late Rose, Flourball, Vermont Beauty, Superior, Manchester Peerless, Norfolk Giant, Breadfruit and Burbank's Seedling, especially when large, can hardly be regarded as evincing good table quality. Mr. James Pink was again placed 2d with a capital collection, as to the merits of which there could be no question. His lot included handsome examples of Trophy, International, Schoolmaster, Ashtop Fluke, Model, Garibaldi, and Triumph; Mr. G. Baguley was 3d; Mr. J. Bellis, gr. to Major Thoyts, Sulhampstead, 4th; and Mr. Wildsmith, Heckfield, 5th.

The class for twelve English varieties brought seventeen collections in competition for the prizes offered in this class by the President, Mr. Alderman Hadley, the Messrs. Bliss, of New York, and Mr. Fawell, St. Paul's Churchyard. Here Mr. W. Finlay was placed 1st, with a very fair-sized pretty lot of tubers, but of which, and indeed of all Mr. Finlay's exhibits, it is right to notice that they had undergone a most rigorous scrubbing—so much so, that not only was the natural gloss of the skin entirely removed, but the colour in some instances was removed also. Such a mode of cleansing the soil from the exhibits ought to be universally condemned. This collection included, of white kinds, Magnum Bonum, Royal Ashleaf, Lapstone, Schoolmaster, and Rector of Woodstock; and of coloured kinds, Wonderful Red, Princess of Wales, Red Fluke, Crimson Ashleaf, Scotch Blue, and Red Regent. Mr. James Pink was 2d, having very fair Model, Blanchard, Garibaldi, and International as best samples; the 3d prize being awarded to Mr. R. Dean, of Ealing, who, in addition to good samples of the four kinds above-named, had a very handsome dish of Mr. Peake's new purple Vicar of Laleham (certificated last year), Salmon Kidney, Grampian, and Lady Webster; 4th, Mr. W. Ellington.

The next class was for nine American kinds, for prizes given by the Lawson Seed Company, Edinburgh; Messrs. Barr & Sugden, and Mr. John Coutts, Covent Garden. Here, as was to be expected, size above the average English character predominated, and was favoured. The 1st prize was taken by Messrs. Lott & Hart, of Whitehill, Faversham, who had Vermont Beauty, Superior, Peerless, Extra Early Vermont, Snowflake, Goodrich, Trophy, Prolific, and Beauty of Hebron. Mr. James Pink again came 2d, the fourth time in succession, a strong evidence of the high quality of Mr. Pink's tubers. He staged Oneida, Vermont Beauty, Superior, Early Rose, Breadfruit, Idaho, Goodrich, Snowflake, and Beauty of Hebron. Mr. R. Farquhar, of Castle Fyvie, Aberdeen, was placed 3d, and Mr. McKinlay 4th.

The class for six dishes, to include Lye's Favourite, had all the prizes provided by Messrs. Daniels Bros., Norwich. There were fourteen competitors, and it was a capital display of Potato excellence. Mr. Finlay was 1st with Scotch Blue, Blanchard, Lye's Favourite, Schoolmaster, Porter's Excelsior, and Edgecote Seedling; Mr. James Millen, Hamstead Park, Newbury, was 2d; Messrs. Lott & Hart 3d; and Mr. J. Pink 4th.

In the class for four dishes the prizes were given by Messrs. Wheeler, of Gloucester, and Mr. J. Wright, Falkirk, and there were not less than thirty collections staged—the requirements being two round and two kidney varieties. Mr. McKinlay was here again placed 1st with Lapstone, Scotch Blue, Blanchard, and Magnum Bonum. Mr. Miller, gr. to J. T. Friend, Esq., Margate, was 2d with Model, Blanchard, Garibaldi, and Yorkshire Hero: 3d, Messrs. Lott and Hart; 4th, Mr. R. Dean. Probably the most difficult both for exhibitors and judges was that for six kinds, distinct, new varieties, in commerce only for the first time this year, or not yet sent out. Several exhibitors staged kinds such as Superior, Lye's Favourite, and Centennial, that were sent out last year, and in two of the prize collections were Early King, a variety offered in Scotland by Mr. Porter three years since, but in England by the Messrs. Hooper for the first time this year; and on a protest being considered, it was held that the word England in the schedule did not include Scotland. A most ingenious way of getting out of a difficulty. According to the judgment therefore the class entirely failed to favour the production of genuine new kinds. The prizes were given by the Messrs. Hooper & Co., of Covent Garden, the 1st being awarded to Mr. J.

Pink, for Manhattan, Trophy, Triumph, Beauty of Kent, a seedling from Snowflake; and Early King. Mr. McKinlay was 2d, with handsome samples of Trophy, Shelburne, Mr. Fenn's new Woodstock Kidney, Radstock Beauty, and McKinlay's Pride. Messrs. Lott & Hart were 3d, having also Early King in their collection.

For two dishes of Potatos, one round, one kidney, the prizes were given by the Aimes Manure Company, there being not less than thirty-six competitors. Here Mr. Howard, of Bridge, Canterbury, was 1st, with handsome dishes of Edgcote Seedling and Schoolmaster. Mr. C. Ross, Welford Park, Newbury, 2d, with a grand dish of International and Fenn's Purple Blush, a duplicate of Blanchard; and Mr. R. Dean, 3d, with International and Schoolmaster; 4th, Mr. F. Miller, who had Blanchard and Ashtop Fluke.

The next class was a single dish of any white round kind, there being thirty-five dishes shown. All the prizes in this class were given by Mr. C. Turner, of Slough, and were awarded to Mr. R. Ironside, of Inverary, N.B., who had a good dish of Hansworth Early, evidently Porter's Excelsior; 2d, Mr. Belles, with Schoolmaster; and 3d, Mr. Halliday, Old Meldrum, with Porter's Excelsior.

For one dish of any coloured round, the prizes being given by Messrs. Harrison & Sons, Leicester, Mr. W. Emerton, of Welford, Rugby, was 1st, with beautiful Red Emperor; Mr. McKinlay 2d, with handsome Blanchard; and Mr. Miller 3d, with Emperor. For the best dish of any white kidney all the prizes were given by Messrs. Webb & Sons, of Wordsley, and were taken by Messrs. Finlay, Miller, and R. Dean, all with Lapstone.

For any coloured kidney the prizes were given by Mr. James Crute, treasurer to the committee, and these were taken by Mr. R. Farquhar, with Purple Ashleaf; Mr. R. Dean, with Garibaldi; and Mr. W. Finlay, with Bountiful. For the best dish of International Kidney, all the prizes being given by Mr. R. Dean, of Ealing, a grand sample was shown by Mr. Finlay, Mr. Ross and Mr. Baguley being 2d and 3d. For the best dish of Covent Garden Perfection, the prizes being given by Mr. George Ure, of Bonny Brig, N.B., Mr. R. Farquhar was 1st, with small handsome samples; Mr. Bellis, with others a trifle larger; and Mr. Cresswell, with a sample about three times the size of the others. It was, indeed, a funny piece of inconsistency. The best dish of any white Ashleaf Kidney was supplied by Mr. R. Farquhar in Old Ashleaf; Mr. Finlay 2d, and Mr. Miller 3d. The prizes in this class were presented by Messrs. George Gibbs & Sons, Down Street, Piccadilly. The final class was for the best dish of Grampian, the prizes being given by Messrs. Nutting, seedsmen, of Barbican —Mr. J. Falconer, of Kintore, Aberdeen, being 1st; Mr. James Neighbour, Bickley Park, 2d; and Mr. Baguley, who had the best dish at least, 3d.

Mr. R. Fenn, of Sulhampstead, near Reading, exhibited six of his new seedling kinds, which were further to be considered for certificates, of which several were granted conditionally on being tested for table qualities.

Large collections of Potatos were also staged by the Messrs. Sutton & Sons, Reading; Messrs. Carter & Co., of Holborn; Messrs. Hooper, Covent Garden; and Messrs. Harrison, of Leicester.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, SEPT 25, 1878.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.						HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION.		WIND	RAINFALL
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure from Mean for the last 60 years.	Dew Point.	Degree of Humidity: Sat. = 100.		Average Direction.	
Sept.	In.	In.	°	°	°	°	°	°				In.
19	29.71	—0.13	62.6	43.8	18.8	52.0	— 4.1	41.0	69	{	WSW. W NW NW. NNW	0.00
20	29.80	—0.02	60.2	44.2	16.0	49.0	— 6.8	48.0	96			0.20
21	30.00	+0.20	61.3	39.9	21.4	49.3	— 6.2	43.0	82		N.W.	0.00
22	29.59	—0.20	57.5	46.0	11.5	51.3	— 4.0	45.6	81		S.	0.01
23	29.31	—0.47	58.3	45.0	13.3	50.1	— 5.1	46.5	88	{	WSW. WNW WNW W	0.15
24	29.52	—0.23	57.8	37.8	20.0	46.1	— 8.9	42.9	89			0.00
25	29.54	—0.21	59.9	42.1	17.8	50.9	— 3.9	48.1	90	{	WSW S.S.E. S.	0.06
Mean	29.64	—0.15	59.7	42.7	17.0	49.8	— 5.6	45.3	85		variable	sum 0.42

Sept. 19.—Fine, cloudy at times. Slight rain at 2.45 P.M. Lightning seen at 7.45 P.M.
— 20.—Generally fine, though cloudy. Rain fell in early morning, and a smart shower of hail and rain fell at 2.45 P.M. Cloudless at night. Lightning seen at 8.39 P.M.
— 21.—A very fine bright day, clear till evening. Overcast at night.
— 22.—Overcast, and dull throughout. Cold. A little rain in evening.
— 23.—Dull till 1 P.M. Fine after. Cloudless at night. Cold. Heavy rain fell in early morning.
— 24.—A dull cloudy day. Cold. Fine before 10 A.M.
— 25.—A dull day. Cloudy. Occasional slight rain after 1 P.M.

LONDON: *Barometer.*—During the week ending September 21 in the suburbs of London the reading of the barometer at the level of the sea decreased from 30.02 inches at the beginning of the week to 29.56 inches by the evening of the 15th, increased to 30.05 inches by the evening of the 16th, decreased to 29.68 inches by the morning of the 18th, increased to 29.95 inches by the morning of the 19th, decreased to 29.83 inches by the evening of the same day, increased to 30.21 inches by mid-day on the 21st, and was 30.17 inches at the end of the week. The mean reading for the week at sea level was 29.91 inches, being 0.20 inch below that of the preceding week, and 0.11 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 67½° on the 15th to 60½° on the 20th; the mean value for the week was 63½°. The lowest temperatures of the air observed by night varied from 40° on the 21st to 54½° on the 15th; the mean value for the week was 47°. The mean daily range of temperature in the week was 16½°, the greatest range in the day being 21½° on the 21st, and the least, 13°, on the 18th.

The mean daily temperatures of the air and the departures from their respective averages were as follows: — 15th, 59°.1, + 2°; 16th, 55°, — 1°.9; 17th, 57°.7, + 1°.1; 18th, 54°.8, —1°.6; 19th, 52°, — 4°.1; 20th, 49°, — 6°.8; 21st, 49°.3, — 6°.2. The mean temperature of the air for the week was 53°.8, being 2°.5 below the average of observations extending over a period of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 133¾° on the 16th, and 130¾° on the 19th; on the 18th, the reading did not rise above 77°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 34° on the 21st, 36½° on the 20th, and 39° on the 19th. The mean of the seven low readings was 41°.

Wind.—The direction of the wind was W.S.W., and its strength moderately strong. The weather during the week was somewhat fine, though at times dull. The sky was generally cloudy.

Rain fell on four days during the week; the amount measured was 0.59 inch.

ENGLAND: *Temperature.*—The highest temperatures of the air observed by day were 71° at both Nottingham and Sunderland, 69° at both Cambridge and Leeds, and 68° at Brighton, Sheffield, and Hull; the highest temperature of the air at Eccles was 64½°, and at Plymouth and Bradford was 65°; the mean value from all stations was 67½°. The lowest temperatures of the air observed by night were 36½° at Bristol and Eccles, 38° at Hull, 38½° at Nottingham, and 39° at Bradford; the lowest temperature of the air at Liverpool was 46¼°, and at Truro was 45°; the mean value from all stations was 40¾°. The range of temperature in the week was the least at Liverpool, 20°, and the greatest at Nottingham, 32½°; the mean range of temperature from all stations was 26¾°.

The mean of the seven high day temperatures was the highest at Truro, 64¼°, Brighton and Cambridge, both 64°, and Blackheath and Sunderland, both 63¾, and the lowest at Liverpool, 59½°, and Bradford, 60°; the general mean from all stations was 62½°. The mean of the seven low night temperatures was the lowest at Eccles, 45½°, Wolverhampton and Nottingham, both 46°, and Sheffield and Hull, both 46¾, and the highest at Truro, 52¾°, and Plymouth, 51½°; the mean from all stations was 48¼°. The mean daily range of temperature in the week was the greatest at Blackheath and Nottingham, both 16½°, and the least at Liverpool, 9½°; the mean daily range from all stations was 14°.

The mean temperature of the air for the week from all stations was 54°, being 3° higher than the value for the corresponding week in 1877. The highest were 57¾° at Truro, 56¼° at Plymouth, and 55½° at Sunderland; and the lowest were 51¾° at Eccles and 52° at Wolverhampton.

Rain fell on six days during the week at Nottingham and Liverpool, and on five days at most other places. The heaviest falls were 1.96 inch at Eccles, 1.56 inch at Bradford, and 1.30 inch at Sheffield and Liverpool; and the least falls were 0.24 inch at Norwich and 0.25 inch at Cambridge; the average fall over the country was 0.93 inch.

The weather during the week was dull and cold, and the sky generally cloudy.

Lightning was seen at Blackheath on the 19th and 20th.

SCOTLAND: *Temperature.*—The highest temperatures of the air varied from 72° at Dundee to 62¼° at Glasgow; the mean value from all stations was 66°. The lowest temperatures of the air varied from 41° at Edinburgh, Dundee and Perth, to 43° at Glasgow and Leith; the mean value from all stations was 42°; the mean range of temperature from all stations was 24°.

The mean temperature of the air for the week from all stations was 53°, being 1¼° higher than the value for the corresponding week in 1877. The highest was 54¼°, at Dundee, and the lowest 51½°, at Edinburgh.

Rain.—The heaviest fall of rain in the week was 3.03 inch at Greenock, and the least 0.15 inch at Dundee; the average fall over the country was 1 inch.

DUBLIN.—The highest temperature was 69°, the lowest was 36½°, the range was 32½°, the mean was 53¼, and the fall of rain 0.62 inch.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

YELLOW MOSS ROSES IN ABERDEENSHIRE.—I have heard it reported that at one time in Aberdeenshire very bright yellow Moss Roses were quite common. Can you inform me if this is correct, and, if so, where they can be got? *John Fraser, Derneclough.*

RASPBERRY JAM TREE.—I read in *The Queenslander* for July 13 that his Excellency Sir A. E. Kennedy had presented the Queensland Acclimatisation Society with some seeds of this tree, a species of Acacia from western Australia, which is said to grow in great luxuriance, and has a most delicious perfume, and the wood is highly prized by cabinet-makers, &c. Can you give me a clue to its name? *Ex-Colonist.* [Acacia acuminata. The wood is hard and heavy, and has an odour of Raspberry jam. EDS.]

Answers to Correspondents.

*** *Numerous communications, reports of shows, &c., are unavoidably postponed.*

ABUTILONS: *S. K. B.* Nos. 2 and 3 have large flowers, and if of good habit would probably be acceptable varieties. The others are small, and show no desirable novelty of colouring.

BOOKS: *T. B.* Loudon's *Amateur Gardener's Calendar* (Warne & Co.).

FLORA OF SOUTH AFRICA: *R. P.* Harvey & Sonder's *Flora Capensis*, in three volumes, contains descriptions of species, but it is unfortunately incomplete. Harvey's *Genera of South African Plants*, (Longmans), second edition, contains a description of all the genera of Cape plants. We do not know of any special Flora of Madagascar, but there are numerous scattered notices in the *Annalesdes Sciences Naturelles.*

GRAPES — THE HEAVIEST BUNCH: *Novice.* The heaviest bunch of Grapes that has been exhibited, so far as we know, was the one of Trebbiano, weighing 26 lb. 4 oz., which was grown by Mr. John Curror, gr. to George Douglas, Esq., Eskbank, Dalkeith, and exhibited by him at the International Fruit Show held in Edinburgh in September, 1875.

GROUND WORK: *W. Holmes.* The handiest tables that we know of are those published in the *Gardeners' Year Book* (171, Fleet Street, E.C.)

INSECTS: *T. T.* We suppose the small flies fastened on the leaves of Clitoria ternata were fixed by the saccharine secretion of the aphides with which the plant was infested.—*H. C.* The insects on the common Spruce are the Aphis Laricis. The pseudo cone-like excresences are formed by a different species of Chermes. Strong repeated fumigation to windward might be beneficial; but cutting down the infested trees or branches and burning them is the only sure remedy.—*G. G. G.* The caterpillar feeding on Tropæolums is that of the common small garden white butterfly. *I. O. W.*

NAMES OF FRUITS: *Henry Clarke. Pears:* 1, Doyenné du Comice; 2, Doyenné d'Ete; 3, Urbaniste; 4, Beurré Hardy; 6, Urbaniste; 7, Louise Bonne of Jersey; 8, Beurré Clairgeau; 9, Marie Louise; 10, Fondante d'Automne; 11, Winter Nelis; 12, probably Verulam; 13, Beurré d'Amanlis. *Apples:* 2, Golden Reinette; 6, Fearn's Pippin.—*Miss Daw.* Your Apple is the Keswick Codlin.—*Tydia. Apples:* 4, Lord Derby; 5, Wormsley Pippin or Stirling Castle; 6, Flat Nonpareil; 7, Dumelow's Seedling. *Pears:* 1, not known; 2, Williams' Bon Chrétien; 3, Beurré d'Amanlis.—*Thos. Matheson.* Your Pears are very indifferent and scarcely recognisable—several apparently the product of late blooms; 3 is Beurré Diel; 4, Beurré Bosc; 6, Beurré Capiaumont; 9, probably Williams' Bon Chrétien, very small. The local Pear, named Poor Man's Profit, is very worthless.—*K. and F. Irish Peach.*

NAMES OF PLANTS: *Carclew.* Amicia zygomeris, native of Mexico. Too tender for outdoor culture generally. Figured in *Botanical Magazine*, t. 4008.—*W. H., Dublin.* The fruit of Passiflora cœrulea.—*An Old Subscriber.* A Pleroma probably, but we cannot say without seeing the flowers.—*W. W.* We do not recognise the plant by the leaf. Horse-radish itself comes sometimes with a cut leaf like the one sent.

PEAT AND MANURE : *John Cleave.* If "the plants are grand," why ask if the plan of preparing the compost as you describe (which is nothing new) is a good one?

PLANTING VINES : *R. A. P. B.* The safest course will be to plant them inside, but to make provision for the roots getting outside, if they choose to go, as they most certainly will.

TOMATOS : *G. Merritt.* We cannot exactly say without seeing specimens whether your plants are suffering from the disease, but should imagine that they are. It is much too prevalent this autumn.

TRANSPLANTER : *D. R. & Co.* We can give you no information about it.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

ERRATUM.—In the letter on Protecting Young Forest Trees in Parks (p. 379), for "where he will find reference made," read, "where he will find *no* reference made." *R. Greenfield.*

CATALOGUES RECEIVED.—Messrs. Edmondson Bros. (10, Dame Street, Dublin), General Bulb Catalogue.—William Rumsey (Joyning's Nurseries, Waltham Cross, N.), Catalogue of Roses, Trees and Shrubs, Plants, Bulbs, &c.—Joseph Schwartz (Rue du Repos, 43, Lyon, France), General Catalogue of Roses.—Messrs. Osborn & Sons (Fulham, London), Descriptive Catalogue of Fruit Trees, Vines, &c.—Messrs. Frœbel & Co. (Neumunster, Zurich), Catalogue of Bulbs, Flower Seeds, &c.

COMMUNICATIONS RECEIVED.—H. E.—T. M.—J. F.—G. P.—H. & B.—E. S. D.—G. T.—T. C. B.—G. H.—Hugo Voigt.—E. P.—J. H.—W. G. S.—C. M.—J. I. L.—H. E.—T. Capers (the subject is becoming too personal).—E. S. D.—T. B. J. S.—C. H.—C. C.—H. A. M.—J. D.—F. L.—J. S. T.—J. S.—J. S. C.—S. G.—Advertiser (the address you require is "Middle Abbey Street, Dublin." We cannot answer your other question. Consult a Newspaper Directory.)

Markets.

COVENT GARDEN, September 26.

Grapes still remain at much the same prices. The supply of Peaches and Nectarines has very much decreased. Trade still remains in a very quiet state. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6– 1 0	Myosotis, 12 bun. ..	3	0– 6 0
Asters, 12 bunches ..	3	0– 9 0	Pelargoniums, 12 spr.	0	9– 1 6
Bouvardias, per bun.	1	0– 4 0	— zonal, 12 sprays	0	4– 1 0
Calceolarias, 12 bun.	6	0–12 0	Phlox, 12 bunches ..	6	0–12 0
Carnations, 12 bunch.	4	0–12 0	Primula, double, per bunch	1	0– 2 0
Cornflower, 12 bun..	2	0– 6 0	Pyrethrum, 12 bun..	3	0– 6 0
Dahlias, 12 bunch...	3	0– 9 0	Roses (indoor), doz.	1	6–12 0
Delphinium, 12 bun.	6	0–12 0	— (outdoor), 12 bun.	3	0–12 0
Eucharis, per doz. ..	4	0–12 0	Spiræa, 12 sprays ..	1	6– 4 0
Gardenias, 12 blms.	3	0– 9 0	Stephanotis, 12 sp...	3	0– 9 0
Gladioli, various, 12 spikes	1	0– 4 0	Sweet Peas, 12 bun.	2	0– 6 0
Heliotropes, 12 sp...	0	6– 1 0	Sweet Sultan, 12 bun.	6	0– 9 0
Jasmine, 12 bunches	6	0–12 0	Tropæolum, 12 bun.	1	0– 3 0
Mignonette, 12 bun.	2	0– 6 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz. ..	4	0–12 0	Foliage Plants, various, each	2	0–10 6
Begonias, per doz...	4	0–18 0	Fuchsias, per dozen .	3	0–12 0
Bouvardias, do ..	6	0–24 0	Mignonette, per doz.	3	0– 9 0
Calceolarias, p. doz..	6	0–12 0	Musk, per dozen ..	2	0– 6 0
Chrysanth., per doz.	6	0– 9 0	Myrtles, per doz. ..	4	0–12 0
Coleus, per dozen ..	3	0– 9 0	Palms in variety, each	2	6–21 0
Cyperus, do.. ..	2	0–12 0	Pelargoniums, scarlets, zonal, doz ..	2	6– 6 0
Dracæna terminalis	30	0–60 0	Petunias, per dozen	4	0–12 0
— viridis, per doz...	18	0–24 0	— Fairy, per doz.	0	0–12 0
Euonymus, various, per dozen	4	0–18 0	Vallota, per doz. ..	0	0–24 0
Ferns, in variety, per dozen	4	0–18 0			
Ficus elastica, each	2	6–15 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz. ..	2	0– 4 0	Horse Radish, p. bun.	4	0– ..
Beans, French, lb...	0	4– 0 6	Lettuces, Cos, Eng., per score ..	1	6– 2 6
— runners, p. bush.	4	0– 6 0	Mint, green bunch..	0	4– 0 6
Beet, per doz. ..	1	0– 2 0	Onions, young, bun.	0	4– 0 6
Cabbages, per doz. ..	1	0– 2 0	Parsley, per bunch..	0	4– ..
Carrots, per bunch ..	0	4– 0 6	Radishes, per bunch	0	1– 0 3
Cauliflowers, per doz.	2	0– 3 0	— Spanish, doz. ..	1	0– ..
Celery, per bundle ..	1	6– 2 0	— New Jersey, doz.	2	0– ..
Chilis, per 100 ..	5	0– ..	Shallots, per lb. ..	0	6– ..
Cucumbers, each ..	0	4– 1 6	Spinach, per bushel	2	0– 3 0
Custard Mar., doz.	3	0– ..	Tomato, per dozen	2	6– 3 0
Endive, Batav. dozen	1	6– ..	Turnips, new, p. bun.	0	6– ..
Garlic, per lb. ..	0	6– ..	Vegt. Marrows, doz.	2	0– ..
Herbs, per bunch ..	0	2– 0 4			

The Potato trade is dull, and prices remain the same :—Myatt's, 120s. to 160s.; Regents, 100s. to 130s.; Early Rose, 110s to 120s. per ton.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ..	1	6– 4 0	Melons, each ..	1	0– 3 0
Figs, per dozen ..	1	0– 3 0	Peaches, per dozen..	6	0–15 0
Filberts, per lb. ..	0	8– 1 0	Pears, per doz. ..	2	0– 6 0
Grapes, per lb. ..	0	9– 6 0	Pine-apples, per lb.	2	0– 6 0
Lemons, per 100 ..	10	0–18 0	Plums, ½-sieve ..	2	0– 5 0

SEEDS.

LONDON : *Sept.* 25.—The weather having lately been very favourable, field work has made good progress, and is indeed, for the time of year, well forward. As regards red Clover seed, there is nothing new to report : offers of the new American red received by cable do not meet with attention, the prices demanded being above the views of the English buyers. No supply of the home-grown crop has yet reached Mark Lane, but the breadth saved for seed is without doubt unusually large. This fact will make the English market greatly independent of America. Trefoils are firm but without much business passing. In neither white Clover nor Alsike is there any business doing of importance. The demand for Trifolium is slackening off. Winter Tares are easier : prices have, in fact, fallen to a point sufficiently low to excite some speculative buying. For sowing Rye there is a quiet sale on former terms. Blue Peas are firmer ; the spread of the Potato disease imparting strength to this market. Canary seed continues very steady at the late advance ; every week it becomes more manifest that the production this year has in all parts been greatly diminished. Feeding Linseed meets with a slow sale. A further quantity of the new white Mustard has been placed at some reduction on former quotations, the condition of these later arrivals proving unsatisfactory. In the value of Rape seed there is no alteration. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was dull, and depressed in tone. Holders of Wheat, although not over anxious sellers, failing to give the necessary or desired stimulant to business, submitted to a reduction of from 1*s.* to 2*s.* per qr., as compared with the prices of Monday s'ennight, and the market closed heavily at the decline. Barley was slow of sale, and even malting qualities could not support the rates previously current. Malt was much the same as regards trade and value. Oats had a downward tendency ; no trade had Maize. New Oats were quoted 6*d.* per qr. cheaper. Beans and Peas attracted very few buyers, and with respect to flour a very heavy trade was experienced.—On Wednesday Wheat, whether English or foreign, was with difficulty sold, even at a still lower price. Barley was not very well supported, and the same remark will apply to the various other articles. The supply of Oats was only moderate, and not of the best quality or condition.—Average prices of corn for the week ending September 21 : — Wheat, 43*s.* 2*d.* ; Barley, 40*s.* 11*d.* ; Oats, 23*s.* 6*d.* For the corresponding period last year :—Wheat, 57*s.* 6*d.* ; Barley, 43*s.* 8*d.* ; Oats, 25*s.* 10*d.*

CATTLE.

At Copenhagen Fields on Monday there was a very large number of beasts on offer, but choice qualities were comparatively scarce ; however, prices were lower for all kinds, and a clearance was not effected. The supply of sheep was also large and the demand small ; prices for all kinds were consequently lower, and a considerable number remained unsold. Choice calves continued dear. Quotations :—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.* and 5*s.* 4*d.* to 5*s.* 10*d.* ; calves, 5*s.* 4*d.* to 6*s.* 6*d.* ; sheep, 5*s.* to 5*s.* 4*d.* and 5*s.* 8*d.* to 6*s.* 10*d.* — On Thursday trade was in a very dull state. Supplies of beasts and sheep were not large, but amply sufficient for the demand, and beasts continued to droop in value. Sheep sold at about late rates. Calves and pigs were dull, and prices unaltered.

HAY.

Tuesday's Whitechapel report states that there was a large supply of fodder, the demand for which was dull at reduced rates. Prime old Clover, 120*s.* to 130*s.* ; new, 100*s.* to 117*s.* ; inferior, 80*s.* to 90*s.* ; prime old meadow hay, 90*s.* to 96*s.* ; new, 80*s.* to 90*s.* ; inferior, 50*s.* to 70*s.* ; and straw, 43*s.* to 48*s.* per load.—On Thursday there was a large supply on offer. The trade was very dull at depressed prices. Quotations : — Prime old Clover, 120*s.* to 126*s.* ; inferior, 80*s.* to 100*s.* ; prime meadow hay, 90*s.* to 92*s.* ; inferior, 40*s.* to 50*s.* ; and straw, 43*s.* to 48*s.* per load. — Cumberland Market quotations :—Superior meadow hay, 92*s.* to 100*s.* ; inferior, 70*s.* to 84*s.* ; superior Clover, 128*s.* to 136*s.* ; inferior, 90*s.* to 112*s.* ; and straw, 50*s.* to 54*s.* per load.

POTATOS.

At the Borough and Spitalfields Markets the supplies of Potatos were short, and disease was again discernible to no unimportant extent. Trade, however, was dull, and prices must be given decidedly lower. Kent Regents, 120*s.* to 130*s.* per ton ; Essex ditto, 86*s.* to 100*s.* ; Early Rose, 120*s.* to 140*s.* ; kidneys, 110*s.* to 150*s.* ; shaws, 55*s.* to 90*s.*—The importation into London was upon a much larger scale last week, no less than 17,200 barrels having been received from Hamburgh alone. In addition, 1138 bags were landed from Ghent, 829 Antwerp, 364 sacks Boulogne, 110 tons Dahonet, 1426 bags Dunkirk, and 597 Bremen.

COALS.

There was a good supply of house coals at market on Monday, which were sold at the last current prices. Wednesday's quotations were :—Walls End—Hetton, 17*s.* 6*d.* ; Hetton Lyons, 16*s.* 3*d.* ; Hawthorns, 16*s.* 3*d.* ; Lambton, 17*s.* ; Wear, 15*s.* 6*d.* ; South Hetton, 17*s.* 6*d.* ; Tunstall, 16*s.* 3*d.* ; East Hartlepool, 17*s.* 3*d.* ; Salvin's Hutton, 16*s.* 9*d.* ; Thornley, 17*s.* ; Tees, 17*s.* 3*d.*

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The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes : —"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery ; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says :— "I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider ; Greenfly and minor pests instantly disappear."

Mr. D. THOMSON, *Gardener to His Grace the Duke of Buccleuch, Dunslanrig Castle*, writes :—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2*s.*, 3*s.* 6*d.*, 6*s.*, and 10*s.* each.

It is most economically applied with a Vaporiser, price 2*s.*

Prepared by Alfred Lowe, Chemist, Chesterfield.

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Small Squares in 16 oz.

Prices for the sizes stated, and for not less than a box of 100 feet. Special price for other sizes will be quoted upon application.

No. in 100 feet	Inches.	4ths.	3ds.	2ds.	Bests.
600	6 × 4				
492	6½ ,, 4½	s. d.	s. d.	s. d.	s. d.
412	7 ,, 5	10 0	11 0	12 0	13 0
349	7½ ,, 5½				
300	8 ,, 6				
260	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8	11 0	12 6	14 6	16 9
164	10½ ,, 8½				
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 3	13 3	15 3	17 6
111	13 ,, 10				
103	14 ,, 10				
90	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11	11 6	13 6	15 6	18 0
92	13 ,, 12				
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	11 9	13 9	15 9	18 3
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15	11 9	13 9	15 9	18 3
44	22 ,, 15				
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	12 3	14 3	16 6	19 0
40	20 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

Orchard House Glass.

In 100 feet Boxes.		21 ounce.			
Inches.	Inches.	4ths.	3ds.	2ds.	Best.
20 × 12	20 × 15	s. d.	s. d.	s. d.	s. d.
20 ,, 13	20 ,, 16	14 6	16 6	18 6	21 0
20 ,, 14	20 ,, 17				

Large Sheets for Cutting.

		Per case—s. d.
4ths Quality, 16 oz. Common Glazing, in cases of	300 ft.	30 0
,, ,, 21 oz. ,, ,, ,,	200 ft.	30 0
,, ,, 26 oz. ,, ,, ,,	200 ft.	42 6
3ds ,, 15 oz. Superior Glazing	300 ft.	37 0
,, ,, 21 oz. ,, ,, ,,	200 ft.	37 0
,, ,, 26 oz. ,, ,, ,,	200 ft.	50 0
2ds ,, 16 oz. Extra ,, ,,	200 ft.	37 6
,, ,, 21 oz. ,, ,, ,,	200 ft.	50 0
,, ,, 26 oz. ,, ,, ,,	200 ft.	66 6
Best ,, 16 oz. Glass ,, ,,	200 ft.	50 0
,, ,, 21 oz. ,, ,, ,,	200 ft.	60 0
,, ,, 26 oz. ,, ,, ,,	200 ft.	80 0

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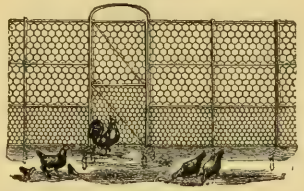


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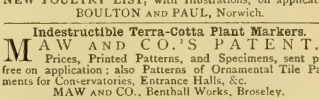
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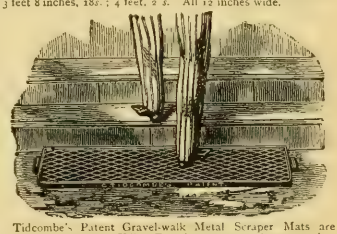
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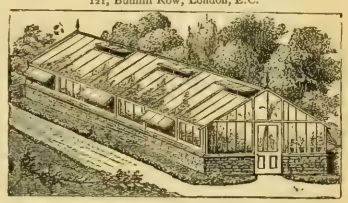
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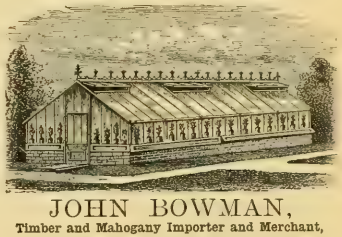


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8	,,	..	..	0	5	0	19	,,	..	..	0 10 6
9	,,	..	..	0	5	6	20	,,	..	..	0 11 0
10	,,	..	..	0	6	0	21	,,	..	..	0 11 6
11	,,	..	..	0	6	6	22	,,	..	..	0 12 0
12	,,	..	..	0	7	0	23	,,	..	..	0 12 6
13	,,	..	..	0	7	6	24	,,	..	..	0 13 0
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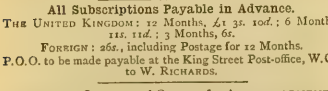
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T. J. HICKES.—Sept. 28.

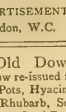
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as do "grown" Edgings, consequently being much cheaper.

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3. The "Princess Alice."
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5. Hope for Egypt.
6. The Mystery of Mrs. Bravo.
7. Faces in the Fair—No. 5, Our Bachelor Friend.
8. Diana Polville's Prisoner—A Story in a Prologue and two Acts.
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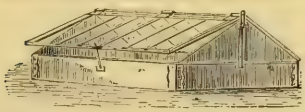
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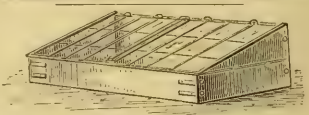
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PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN AND ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

CAMELLIAS.—Six large, well-grown, good sorts for Sale, cheap, together or separately. For particulars apply to S. WOOLLEY, Nurseryman, Cheshunt, Herts.

LEMON TREES, fruit bearing, of different sizes, and other GREENHOUSE PLANTS, to be disposed of. Apply, post-paid, J. S., Loddon, Norwich.

KALMIA LATIFOLIA.—Well-furnished plants, covered with buds, admirably adapted for potting, 12s. and 18s. per dozen. ANTHONY WATERER, Knap Hill Nursery, Woking Station, Surrey.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low per 100, or lesser quantities, on application. ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

CYATHEA PRINCEPS.—To be Sold, a splendid Specimen of the above—height of stem, 7 feet. Apply to Y. Z., Messrs. Hogg & Robertson, 22, Mary Street, Dublin.

PINES (Queens).—Nice clean Suckers, and strong Succession Plants, 2s 6d. to 9s. per dozen. W. M., High Beech, Loughton, Essex.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale. THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Strawberries, Geraniums, &c.

WM. POTTEN can still supply the above, as advertised in *Gardeners' Chronicle*, September 28. Camden Nursery, Sissinghurst, Staplehurst, Kent.

SEAKALE and RHUBARB ROOTS, for Forcing, exceptionally fine. For prices and special quotations apply to H. THORNTON, 1, Maxwell Road, Fulham, W.

Gentlemen's Gardeners, Amateurs, and Others

REQUIRING

GARDEN POTS of best quality, are requested to send their orders to J. MATTHEWS, Royal Pottery, Weston-super-Mare. Price List on application.

To the Trade.

STANDARD and DWARF ROSES.—A few thousands of each yet unsold. Plants unusually fine. Price on application. KEYNES AND CO., Castle Street Nursery, Salisbury.

Special Offer.

STANDARD and DWARF ROSES. Trade LIST now ready, post-free. LEWIS S. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

CHRISTMAS ROSES.—Strong blooming plants, 18s. per dozen, for cash with order, package included. The Trade supplied at the usual discount for cash only. THOMAS KITLEY, Oldfield Nursery, Bath.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland; who will also be happy to forward their CATALOGUE of Hyacinths, Tulips and other Dutch Bulbs.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ. The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

GOLD MEDAL for TUBEROUS BEGONIAS.—Seed just harvested from our unrivalled collection. Sealed packets, 1s. 6d. and 2s. 6d. each. We offer also our noted strains of PRIMULA, CALCEOLARIA and CINERARIA, at 1s. 6d. and 2s. 6d. per packet. JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

HOLLIES.—500,000 Seedlings, 1-yr. Sample and price on application. Orders being booked for Seedling LARCH, Scots FIR, Norway SPRUCE, &c., for future delivery. W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

To the Trade.

SEEDLING LARCH, extra fine, 1-yr. and 2-yr. SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr. The above are offered in quantity, and are especially fine. LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

SEEDLINGS.—Immense quantities of Thorns, Scotch Firs, Alder, Birch, &c., for transplanting and in strong plants. Apply to Messrs. LEVAVASSEUR AND SONS, Nurserymen, Ussy, Calvados, France.

BOX EDGING—10,000 Nursery Yards, of very superior quality, as supplied to the Trade for several years, at £9 per 1000, per 1000 yards, each yard to lay three. For cash with order only. J. B. YOUNG, Landscape Gardener, Bridge of Allan.

GERMAN LILY OF THE VALLEY, single crowns, extra strong, in splendid condition. Price and samples on application to CHARLES PUTTFARKEN, Bradford, Yorkshire.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps. CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application. THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

STRAWBERRY DUKE of EDINBURGH (Moffat).—Strong well-rooted runners of this famous variety from the original Stock, the best for general crop and marketing, 2s 6d. per 100; 12 plants post-free for 2s. TODD AND CO., Seedsmen, Maitland Street, Edinburgh.

To Amateur Strawberry Growers.

RUNNERS, strong and well rooted, are now ready, from H. de Thury, President, Sir J. Paxton, and British Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants, post-free, 1s. Manual on Strawberry Culture, 6d. W. LOVELL, Strawberry Grower, Weaverthorpe, York.

Cabbage Plants—Cabbage Plants.

W. VIRGO, Wonersh Nursery, Guildford, can now supply in any quantity the following good, strong, healthy, autumn grown Plants:—Early Battersea, Early Enfield Market, Early Nonpariel, and Robinson's Drumhead, at 3s. per 1000; Red Pickling, 5s. per 1000. LETTUCE—Brown Cos and Admiral, 5s. per 1000. Reference required from unknown correspondents.

WANTED, Three Thousand Standard ROSE STOCKS, 3 to 4 feet high. To be delivered in November. State cash price to JOSHUA LE CORNU, High View Nurseries, Jersey.

WANTED, strong 3-year old transplanted THORNS. Also Crown Bob and Ashton Seedling GOOSEBERRIES. Price and description to ISAAC DAVIES, Nurseryman, Ormskirk.

2581 Choice Bulbs in

SUTTON'S £5 5s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

1049 Choice Bulbs in

SUTTON'S £2 2s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

539 Choice Bulbs in

SUTTON'S £1 1s. COLLECTION of Bulbs for Open Ground. Carriage free to any railway station in England or Wales.

743 Choice Bulbs in

SUTTON'S £5 5s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any port or railway station in the United Kingdom.

270 Choice Bulbs in

SUTTON'S £2 2s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any port or railway station in the United Kingdom.

136 Choice Bulbs in

SUTTON'S £1 1s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any railway station in England and Wales. SUTTON AND SONS, The Queen's Seedsmen, Reading.

Notice of Removal.

ROBERT COOPER, SEED MERCHANT, 90, Southwark Street, London, S.E., has Removed from 152, Fleet Street. CATALOGUE of HYACINTHS and other BULBS sent post-free.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).

THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

Miles' New Hybrid Spiral Mignonette.

EXTRA SELECTED from the ORIGINAL STOCK. WM. MILES has to offer new SEED of the above splendid variety, carefully saved from the finest spikes, at 1s. per packet. The usual allowance to the Trade. The West Brighton Nurseries, Cliftonville, Sussex.

Specimen Plants.

SPECIAL OFFER.—Dæmonorops palembanicus, 11 feet high, six leaves, 7s. 6d.; Phœnix reclinata, eight leaves, 4 to 5 feet long, 5s. 6d.; Pandanus javanicus fol. variegatis, 3 feet high, 5 feet through, 25s.; and Latania borbonica, fine plant, 9 feet through, 42s. WILLIAM BRYANT, The Nurseries, Rugby.

To the Trade.

RICHMOND and MORTLAKE NURSERIES, SURREY Established 1802.

G. AND W. STEELL, of the above Nurseries, most respectfully invite the Trade to inspect their Stock, which they will find very extensive and uncommonly fine this season, and in excellent condition for moving. Early orders are respectfully solicited.

To Gentlemen, Contractors, and Others.

G. AND W. STEELL also solicit the attention of all those who are making large plantations, and beg to inform them that they will feel great pleasure in giving special prices to large buyers, which they can quote extremely low, having a very large Stock on hand.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s. BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

Bulbs for the Season.

CHARLES TURNER'S consignments of the above have arrived in fine condition. The roots are remarkably sound, and early orders are respectfully solicited. CATALOGUES post-free on application. The Royal Nurseries, Slough.

To the Trade Only.

DUTCH BULBS at DUTCH PRICES.—Hyacinths, Tulips, Crocus, Narcissus, Begonias, Christmas Roses, Gloxinias, Caladiums, Novelties in Bulbs and Roots, Anemone fulgens, Snowdrops, &c. Quality extra. Prices low. Catalogue on application to F. SANDER AND CO., Seed Growers, St. Albans.

Hyacinths, Tulips, &c.

BUTLER, MCCULLOCH AND CO.'S CATALOGUE of the above is now ready, which also contains a copious list of Garden Necessaries and Culinary Requisites. Sent free and post-paid to all parts of the world. Covent Garden Market, London, W.C.—Established upwards of a century.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application, Highgate, London, N., and Barnet, Herts.

SALES BY AUCTION.

Unreserved Sale of Dutch Bulbs of superior Quality, comprising the finest HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, &c. Also a consignment from Ghent of CAMELLIAS and AZALEAS in pots, all named, and other plants, together with 10 TREE FERNS, CYATHEA DEALBATA, from New Zealand, 4 to 6 feet straight stems, and in the finest possible condition, fronds just starting.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next, at the Mart, opposite the Bank of England, City, E.C., at half-past 11 o'Clock precisely.

P. AND M. will buy for gentlemen who cannot attend.

Catalogues had at the Mart, and 98, Gracechurch Street, E.C.

Upper Tooting, S.W.

IMPORTANT SALE of THRIVING YOUNG NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. C. Young to SELL by AUCTION, without reserve, on the Premises, the Upper Tooting Park Nursery, Surrey, S.W., on TUESDAY and WEDNESDAY, October 8 and 9, at 11 for 12 o'Clock precisely each day, a large quantity of VALUABLE NURSERY STOCK, remarkably well-grown, and in excellent condition for removal, comprising thousands of Border Shrubs, consisting of the choicest Evergreens and Coniferæ, in great variety; Ornamental Trees, in fine assortment; some very well-grown Fruit Trees, Hardy Climbers, together with a quantity of STOVE and GREENHOUSE PLANTS, including large Camellias and Azaleas, Ferns, Palms, &c.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lewisham, S.E.

Close to Ladywell Station.

CLEARANCE SALE, WITHOUT RESERVE.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietress to SELL by AUCTION, on the Premises, Sion House, near Lewisham Old Church, on FRIDAY, October 11, at 12 o'Clock precisely, the whole of the STOVE and GREENHOUSE PLANTS, consisting of several handsome specimens; some remarkably fine specimen Ericas, fit for exhibition; a capital assortment of well-grown young Stock, together with a quantity of useful GREENHOUSES; about 800 feet of 4-inch HOT-WATER PIPING, quantity of BRICKWORK, and other Effects.

On view the day prior, and Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex.

SPECIAL TRADE SALE, commencing punctually at 11 o'Clock, in consequence of the great number of lots to be offered.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION as above, on THURSDAY, October 10, at 11 o'Clock to the minute, several thousands of WINTER-BLOOMING HEATHS, remarkably well grown and full of flower-buds, including large specimens of hyemalis, gracilis, Wilmoreana, grandinosa, Cavendishii, ventricosa, and other excellent varieties; also EPACRIS of the choicest kinds; CYCLAMEN PERSICUM, GENISTA FRAGRANS, BOUVARDIAS and GARDENIAS, of sorts; LAPAGERIAS, AZALEA INDICA, Tea-scented and other ROSES, SOLANUM CAPSICASTRUM in berry, TREE CARNATIONS, ADIANTUMS, and a quantity of miscellaneous GREENHOUSE PLANTS, including strong flowering Chrysanthemums, also a few thousands of healthy young Erica hyemalis and others, and Epacris in small pots for growing on.

May now be viewed, and Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tottenham.

IMPORTANT ANNUAL SALE of VALUABLE and WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, adjoining the Station, on TUESDAY, October 15, at 11 for 12 o'Clock precisely, by order of T. S. Ware, a large quantity of well-grown NURSERY STOCK in splendid condition for removal, comprising 400 Lombardy and other Poplars, Planes, 600 Standard Limes, stright stems; 200 double crimson Thorns; a quantity of Ornamental and Border Shrubs, including 600 Laurustinus, 2 to 3 feet; 800 Aucuba japonica, 2 to 3 feet; 1500 common and other Hollies, 600 Rhododendron ponticum, and a fine assortment of Evergreens and Coniferæ; 1200 clean-grown Standard, Dwarf-trained and Pyramid Fruit Trees; 2500 Standard and Half-Standard Roses; quantities of climbing Plants in variety; 500 double Pæony officinatis; 2000 Pinks; Helleborus niger, Miscellaneous Bulbs, Autumn and Spring flowering Perennials, and other useful Stock.

On view one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Brixton, S.W.—Without Reserve.

TO GENTLEMEN, BUILDERS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Loughborough Park, S.W., close to the Station, on WEDNESDAY and THURSDAY, October 16 and 17, at 12 o'Clock precisely each day, by order of Messrs. Ponsford & Son, the valuable NURSERY STOCK, in excellent condition, comprising 5000 Limes, 6 to 10 feet; 250 Planes, 6 to 12 feet; 500 Mulberry Trees, including some fine specimens; thousands of Evergreen and Coniferæ Shrubs for border planting, and 5000 Aucubas; together with STOVE and GREENHOUSE PLANTS, including Palms, Azaleas, Camellias, Ferns, Choice Orchids, &c.

On view one week prior to the Sale. Catalogues had on the Premises, at the Seed Shop, 409, Brixton Road, S.W.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Preliminary Notice.—Addlestone, Surrey.

EXTENSIVE SALE of FIRST-CLASS NURSERY STOCK, in consequence of Removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Alfred Gray to SELL by AUCTION, at the Ongar Hill, Addlestone, and Ottershaw Nurseries, Addlestone, on TUESDAY, October 22 and three following days, several acres of beautifully-grown NURSERY STOCK in fine condition for transplanting.

Full particulars next week.

The Nursery, close to the Queen's Head Hotel,

Church End, Finchley, N.

CLEARANCE SALE. Entirely without reserve, by order of William Whiteley, Esq.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, on THURSDAY, October 17, at 12 o'Clock punctually, the whole of the NURSERY STOCK, consisting of Evergreen, Coniferæ, and Deciduous Shrubs, in good condition for removal, a quantity of bushy Aucuba japonica, Variegated and [Green Hollies, 1000 Limes, 5 to 12 feet; 200 Standard and Pyramid Fruit trees, and other Miscellaneous Stock.

May be viewed one day prior to the Sale, Catalogues had on the Premises, at Mr. W. Whiteley's establishment, Westbourne Grove, W., and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Dutch Flower Roots, for Present Planting and Spring

Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during October and November, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Plants from Ghent, and Bulbs from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 9, at half-past 12 o'Clock precisely, 100 half Specimen CAMELLIAS, 210 3 feet high, fine Standards, mostly well set with flower-buds, the property of a gentleman; a consignment of INDIAN AZALEAS, CAMELLIAS, DRACÆNAS, and PALMS from Ghent; and a splendid assortment of HYACINTHS, TULIPS, CROCUSES, and other BULBS from Holland.

On view the morning of Sale, and Catalogues had.

Established and Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 10, at half-past 12 o'Clock precisely, a consignment of ESTABLISHED ORCHIDS, from Moulmein, comprising 6 Aerides quinquevulnerum, 25 Colax jugosus, 2 Cattleya Lindleyana, 4 Lælia purpurata Brysiana, 1 Masdevallia Nycterina, 2 M. Houtteana, 1 M. Trochilis, 4 Oncidium præstextum, 2 Pescatorea Roezlii, and other choice Orchids; also 30 Cocos Weddelliana, 25 Pincenectitia tuberculata, and other Miscellaneous ESTABLISHED ORCHIDS, comprising rare and valuable sorts, viz., Vanda cœrulescens Boxallii, Aerides Lobbii, Calanthe Veitchii, Dendrobium Dixanthum, Phalænopsis amabilis, Oncidium Rogersi, Dendrobium crassinode, Odontoglossum cirrhosum, Epidendrum Endresii, Oncidium Forbesii, Dendrobium Wardianum, &c.; and an Importation from British Honduras, comprising fine masses of Brassavola Digbyana, B. venosa, Epidendrum Stamfordianum, &c., and 10 fine Trunks of Cyathea dealbata, &c.

On view morning of Sale, and Catalogues had.

Gonville Nursery, Cambridge.

CLEARANCE SALE OF NURSERY STOCK.

J. SWAN AND SON will SELL by AUCTION, at the above Nursery, on WEDNESDAY, October 16, at 11 o'Clock precisely, the first portion of the valuable stock of GREENHOUSE and STOVE PLANTS, including Camellias and Azaleas, well set with bloom; winter blooming Heaths, Epacris, Solanums, beautifully grown and finely berried; Poinsettias, Maidenhair Ferns, mixed Ferns, Begonias, and a large variety of Blooming and Ornamental Plants, all grown on and prepared for winter blooming; also a choice Collection of Specimen Plants, including large Palms, Ferns, Azaleas, and others that have been exhibited so successfully in the neighbourhood for some years past.

Catalogues will be forwarded on application to the Auctioneers, 19, Sidney Street, Cambridge.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Stations on the South-Western Railway.

IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey, to SELL by AUCTION, in October, the STOCK upon the above Nurseries, Chertsey.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

Brox and Woodham Nurseries, Chertsey, Surrey.

One Mile from the Addlestone and Two Miles from the Woking Stations on the South-Western Railway.

By Order of the Executrix.

NOTICE of an IMPORTANT SALE of NURSERY STOCK.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Gray to SELL by AUCTION, on MONDAY, October 28, and four following days, the very valuable and well-grown Stock, on the above Nurseries, comprising 7000 Standard Pyramid Trained and Maiden FRUIT TREES, all true to name, and best leading sorts; 3000 Green HOLLIES, 2 to 3 feet; 500 Variegated Hollies, 16,000 SPANISH CHESTNUT, 3 to 12 feet; 4000 POPLARS of sorts, 6 to 10 feet; 11,000 HORSE CHESTNUT, 6 feet in the stem; Golden and Flowering ASH, 5000 BIRCH, 4 to 10 feet; 500 LIMES, 6 to 10 feet; large quantity of ASH, OAK, ELM, SYCAMORE, ALDER, Purple BEECH, and other FOREST TREES, 500 Laburnum, 8 to 10 feet; 1200 Spruce, 2 to 3 feet; Acer Negundo, Variegated and Common ditto, 6 to 10 feet; 300 Standard Thorns, of sorts; 7000 Pinus insignis, Strobus, austriaca, excelsa, Laricio, 2 to 6 feet; 5000 Larch, 3 to 4 feet; Weymouth Pine, 5 to 6 feet; 700 Cedrus Deodara, 3 feet; 1500 Cupressus Lawsoniana, 3 to 5 feet; 300 Abies Douglasii, 7000 Thuja Lobbii, 5000 Cob Nuts, 5 feet; 3000 Yews, 2 to 3 feet; 3000 Hornbeam, 5 to 7 feet; 5000 Common and Portugal Laurels, 2 to 3 feet; 10,000 Transplanted Quicks, STANDARD ROSES of the most choice sorts; 5000 Manetti Rose Stocks, Ponticum and Hybrid RHODODENDRONS, BERBERIS, about 125 lots of Choice Mixed Shrubs, suitable for immediate Ornamental Planting.

The Auctioneers have pleasure in inviting the attention of Gentlemen, Nurserymen, and others to this Stock, which is in perfectly safe condition for removal.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises; and of Messrs. R. & J. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

Potter's Bar, Middlesex.

To FRUIT GROWERS, MARKET GARDENERS, and OTHERS.

A Valuable FREEHOLD PROPERTY, comprising the Holly Bank Nursery, Potter's Bar, about 1 mile from the Railway Station. It contains 3 acres, and the buildings comprise a capital Dwelling-house, Two Cottages, Stabling, Sheds, and Eighteen Greenhouses, including Vineries, Peach-houses, Cucumber and Melon-houses, &c., varying in length from 40 feet to 200 feet, the whole having been arranged and planted within the last few years by Mr Monro, the well-known Fruit-grower. Immediate Possession.

MESSRS. WILKINSON AND HORNE are instructed to SELL by AUCTION, at the Mart, on FRIDAY, October 11, at 12 for 1 o'Clock, by order of the Trustees of the Estate of John Monro, the above very valuable FREEHOLD PROPERTY.

Particulars may be had of Messrs. WENHAM, ANGUS AND CO., Accountants, 43, Finsbury Circus, E.C.; of F. CAPE, Esq., Accountant, 61, Cheapside, E.C.; of J. E. COXWELL, Esq., Solicitor, 6, Martin's Lane, Cannon Street, E.C.; and of Messrs. WILKINSON AND HORNE, Land Agents and Auctioneers, 7, Poultry, and 37, Bucklersbury, E.C.

Goldworth, near Woking Station, Surrey.

IMPORTANT NOTICE, to all who contemplate planting this autumn, of three days' Sale of very choice NURSERY STOCK in the best possible condition for removal. It consists of 5000 Green Holly, from 1 to 9 feet; 3500 Variegated ditto, 1 to 6 feet; 20,000 English Yew, 1 to 10 feet; Cedrus Deodara, 9 to 10 feet; Pinus Pinsapo, P Nordmanniana, and thousands of the following: Common and Portugal Laurel, Golden Yew, Aucuba, Thuja Wareana, T. aurea, Tree Box, Junipers, very fine; Irish Yew, 3 to 9 feet; Laurustinus, 120,000 Seedling and bedded Quick, 15,000 Currants, Sweet Bay, 10 feet, handsome; Standard and Maiden Fruit Trees, and many other items, which will be Sold by Auction by

MR. WILLIAM ABRAHAM, on the Premises, Goldworth, near Woking Station, South-Western Railway, on WEDNESDAY, October 16, and two following Days, at 12 o'Clock each day punctually, by order of Messrs. J. & W. Trigg.

Catalogues free by post, at the place of Sale, or of the Auctioneer, Woking Station, Surrey.

Preliminary Notice of

FORTHCOMING SALES by PROTHEROE AND MORRIS, HORTICULTURAL VALUERS AND AUCTIONEERS.

EVERY MONDAY.—Sales of first-class Dutch Bulbs, at the Auction Mart, Tokenhouse Yard, City, E.C.

OCTOBER 28 and 29.—EXOTIC NURSERY, Tooting. By order of Mr. R. Parker. Annual Sale of General Nursery Stock.

OCTOBER 31.—The NURSERY, West Wickham. By order of Mr. Kirkcaldy. General Nursery Stock.

Date not yet fixed.—The ROYAL NURSERIES, Merriott, Somerset. Important Sale of Nursery Stock. Three days.

NOVEMBER 5 and 6—OXTON HILL NURSERY, Birkenhead. By order of Mr. W. Henderson. Two days' Sale of General Nursery Stock.

NOVEMBER 5, 6, 7, and 8.—AMERICAN NURSERIES, Leytonstone. Two days' Sale of Nursery Stock. Also two days' Sale at the NURSERIES, Wanstead.

Catalogues may be obtained of the above, when ready, at the Auctioneers' Offices, 98, Gracechurch Street, E.C., and Leytonstone, E.

Gentlemen desirous of Purchasing Nursery Stock this season can, by sending their names and addresses to Messrs. P. & M., have Catalogues forwarded from time to time.

N.B.—The NEXT SALES of Properties take place at the Auction Mart on WEDNESDAY, October 30; also on MONDAY, November 11.

PRELIMINARY NOTICE.—A most important SALE of CHOICE and VALUABLE NURSERY STOCK, to take place about the MIDDLE of OCTOBER, of which due Notice will be given.

The Royal Nurseries, Merriott, Somerset.

To Market Gardeners and Nurserymen.

TO BE LET, from Michaelmas next, a NURSERY, of 3½ acres in extent, on the Reigate and Sutton Turnpike Road. Ground rent £14 per annum. Planted with Shrubs, Fruit Trees, and Market Garden Produce. For further particulars address,

F., Mr. Allingham, Market Place, Reigate.

TO LET, a Small NURSERY, little over 4 acres, with thorough good Business (over thirty years' standing), with Dwelling-house, Out-houses, Vinery, Greenhouses, Propagating-houses, Pits, &c. If required, 6 Acres of rich Meadow Land adjoining, at Shipston-on-Stour. For particulars, apply

JOSEPH CURTIS, Charlbury, Oxon.

TO BE LET, a SHOP facing the Flower Market, Covent Garden, suitable for an Agency or Office. Apply at

2, Tavistock Court, Covent Garden, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained gratis at 98, Gracechurch Street, E.C.

NEW GIANT FRENCH ANEMONES.—Superior to the Dutch varieties, producing an abundance of brilliant flowers of immense size.

NEW GIANT FRENCH ANEMONES.—Finest mixed double, 6s. per dozen, 40s. per 100; finest mixed single, 1s. 6d. per dozen, 10s. per 100.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Gloire de Nantes" (blue-violet), 4d. each, 3s. per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "La Brillante" (bright crimson-red), 6d. each, 5s. per dozen.

NEW GIANT FRENCH ANEMONES.—Double Chrysanthemum-flowered "Mauve Clair" (beautiful pale mauve), 6d. each, 5s. per dozen.

Prices and full particulars of other Flower Roots, post-free.

SUTTON AND SONS, The Queen's Seedsmen, Reading.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE is hereby given that an Addition to the PENSION LIST of this Institution will be made in January next. That in consequence of there being a large number of applicants coming under Rule No. 6, who have been Subscribers for fifteen years and upwards the List of Candidates will be confined to those persons. Persons desirous of becoming Candidates are requested to send in their applications to the Committee on or before November 8 next, after which day they will not be received.—By order,

EDWARD R. CUTLER, Secretary.

14, Tavistock Row, W.C.—October 2, 1878.

P.S. Printed Forms of Application and all requisite information may be obtained from the Secretary.

Great Eastern Railway Company.

DUTCH BULBS.

THE GREAT EASTERN RAILWAY COMPANY have now made special arrangements for the conveyance of Bulbs and Roots from Holland at a rate of 25s. per ton from Rotterdam to London, including delivery within the ordinary cartage limits. Traffic sent by this service will usually be delivered in London on the second day after shipment in Rotterdam. The Company have also instituted an Express Service for the carriage of Bulbs from Rotterdam to London at 45s. per ton, including delivery within the usual cartage limits. The Company guarantees delivery (against forfeiture of freight) the day after shipment in Rotterdam, the act of God alone excepted. The Company are prepared to quote Throughout Rates from any town in Holland to any town in England. The Bulbs should be consigned to the Company's Agents, Messrs. Hudig & Pieters, Rotterdam, to whom full instructions (stating whether the Bulbs are to be forwarded by ordinary or express train) must also be sent. Senders are requested to address their cases in full, and to mark them "Bulbs" in large letters, so as to avoid the possibility of error or delay.

For further information, address The CONTINENTAL DEPARTMENT, Liverpool Street Station, London, E.C.

Rhododendron ponticum.

J. MARRIOTT begs to intimate to Noblemen, Gentlemen, and the Trade, that he has an immense stock of the above to offer in ages and sizes as follow, at very moderate prices :—

2, 3, and 4-yr. seedlings.

4-yr. seedling,	2-yr. bedded.
4 to 6 inches.	9 to 12 inches.
6 to 9 inches.	12 to 15 inches.

Highfield Nurseries, Matlock, Derbyshire.

SURPLUS STOCK of INDIAN AZALEAS.

Bushy plants, 10 to 12 inches, without flower-buds, 9s. per doz. Good flowering plants, 15s. per doz.

Good flowering plants, extra large, 24s. per dozen.

In twelve good varieties. Descriptive LIST on application.

Also could spare about 2000 DAPHNE INDICA RUBRA, healthy plants, 9 to 18 inches, 9s. to 18s. per dozen.

ISAAC DAVIES, Nurseryman, Ormskurk.

For Immediate Disposal.

SPECIMEN STOVE and GREENHOUSE PLANTS.

WM. MILES has for disposal some splendid specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Trees and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to

WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

STRAWBERRY PLANTS.—Moffat's Duke of Edinburgh, fine strong plants at 7s. 6d. per 100. Trade supplied on moderate terms.

Awarded special prize at Edinburgh, July, 1878.

GEORGE SINCLAIR, Phantassie Orchard, Prestonkirk, N.B.

Special Offer to the Trade.

ASH, 1-yr. seedlings, 2s. per 1000; 1-yr. transplanted, 1 foot, 5s. per 1000. BEECH, 1-yr. seedlings, 1s. 6d. per 1000. CHESTNUTS, Spanish, 1-yr. drilled, 6s. per 1000. OAK, English, 1-yr. drilled, 3s. per 1000. SPRUCE FIR, 2-yr., fine, 1s. 6d. per 1000; do., 2-yr. transplanted, fine, 5s. per 1000; do., 3-yr. transplanted, 12 to 15 inches, 8s. per 1000. PINUS LARICIO, 1-yr., 1-yr. transplanted, 7s. 6d. per 1000. Cheaper by the 100,000. ARALIA SIEBOLDII, extra fine, bushy, pots 6-inch, 20s. per 100.

GARLIES MITCHELL, Nurseries, Stranraer.

EUONYMUS JAPONICUS, 12 to 15 inches, 25s. per 100, £10 per 1000.

" " MEDIO PICTA, 9 to 12 inches, in pots, 28s. per 100.

" " AUREA MARGINATA, 9 to 12 inches, 28s. per 100, £13 per 1000.

" " DUC D'ANJOU, 9 to 15 inches, 35s. per 100.

" " MACROPHYLLA, 6 inches, 30s. per 100.

" " MICROPHYLLA, 6 inches, 25s. per 100.

IVIES, named varieties, in pots, 30s. per 100.

STANSFIELD BROTHERS, Southport.

CLEMATIS.—Jackmanni, rubra violacea, Miss Bateman, Lucy Lemoine, Gem, and others, very strong, 50s. per 100, £20 per 1000.

RICHARD MASON,
Windlesham Nursery, Bagshot, Surrey.

SPECIAL OFFER.—Manetti Stocks, good, 18s. per 1000. Standard Roses, 80s. per 100, Dwarf on Manetti, 40s. per 100. Acer Negundo variegata, dwarf maidens, 30s. per 100; nice feathered do., pyramids, 12s. per dozen, 75s. per 100; standards, 9s. to 18s. per dozen. Platanus occidentalis, 2 to 2½ feet, 50s. per 1000; 2½ to 3 feet, 10s. per 100; 3 to 4 feet, 20s. per 100; 4 to 5 feet, 30s.; 5 to 6 feet, 40s.; 7 to 8 feet, 60s.; 8 to 9 feet, 80s.; 10 to 12 feet, 18s. to 24s. per dozen. Gooseberries, strong Crown Bobs, 12s. 6d. per 100. Black Currants, 8s. per 100, 75s. per 1000. Spiræa japonica, fine, 15s. per 100.

EDMUND BLYTON, The Nurseries, Woodhall Spa, Horncastle.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.

SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)

Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

FOR FORCING.

SPIRÆA JAPONICA, 20s. per 100.

" PALMATA, 25s. per 100.

By 100 or 1000. " An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s, and 20s. per 100. Extra large clumps at moderate prices.

ROSE QUEEN OF BEDDERS,
Booked for autumn, 12s. per dozen, 75s. per 100.
CHARLES NOBLE, Bagshot.

Notice to the Trade.

W. G. CALDWELL AND SONS are now sending out their well-known AZALEA AMŒNA CALDWELLI, strong plants, 18s. per dozen; larger size, 24s.

Also splendid plants of GLEICHENIA DICHOTOMA, at 3s. 6d. and 5s. each, 36s. and 50s. per dozen.

The Nurseries, Knutsford, Cheshire.

Rhododendrons, Hollies, Seedling Mezereons, and FOREST TREES.

SPECIAL OFFER.—Hollies, Laurel-leaved, Shepherdii, and common, 1 to 6 feet; Rhododendrons, common and choice, named, 1 to 3 feet; Aucubas, fine plants, 1 to 3 feet; ovalifolia Privet; Beech, 3 to 8 feet; Seedling Mezereons, 2-yr., 1 foot or about; Mezereons, 2 feet; Forest Trees in sorts, 3 to 8 feet; Thorn Quicks, 2 to 4 years old; and other Nursery Stock. The above will be sold very cheap, as the land must be cleared for farming purposes.

PETER LEIGH, Nurseryman, Scholeses Nurseries, Elton, near Bury, Lancashire.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 9s. per dozen.

POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz.; smaller plants, 6s. per doz.

BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.

ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.

PRIMULA ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 9s. and 10s. per dozen.

ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s. per dozen, £4 per 100; smaller plants, in 2½-inch pots, 5s. per 100.

MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen—offered to make room for smaller stuff.

PTERIS SCABERULA, good plants, 12s. per dozen.

ADIANTUM FARLEYENSE, 2000 fine plants, in 4-inch pots, 24s. per dozen; in 3-inch, 18s. per dozen.

PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.

CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.

GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.

CYCLAMEN PERSICUM, fine strain, 12s. per dozen.

GENISTAS, splendid stuff, 5½-inch pots, 30s. per 100; ditto, in 4-inch pots, 30s. per 100.

HEATH AND SON, Nurserymen, Cheltenham.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.

CATALOGUES free by post on application.

THIRTY THOUSAND CAMELLIAS, alba plena and other best sorts, all home-grown, well set with bud and very forward. Also many thousand AZALEA INDICA, best sorts, well set for bloom; and hard-wooded HEATHS, half and quarter specimens, fine healthy and well-formed plants. For price and particulars, see *Gardeners' Chronicle* of September 21, 1878.

B. WHITHAM, The Nurseries, Reddish, near Stockport, has the above unequalled collection on Sale.

Pinks—Pinks—Pinks.

WOOD AND INGRAM have a large Collection of the best Exhibition Varieties in strong, well-rooted plants. This is the best season for planting.

Price 4s. per dozen.

For Names and Descriptions see their new CATALOGUE of imported and other Carnations, Picotees, &c., which is now ready, and will be forwarded free on application.

The Nurseries, Huntingdon.

HENRY WALTON, Edge End Nursery, Brierfield, near Burnley, Lancashire, begs to offer the undermentioned, in good strong plants, at the following cheap rates :—

12 CAMELLIAS, very choice English-grown, 21s. to 42s.
12 AZALEAS, very choice English-grown, 18s. to 36s.
12 FLOWERING STOVE PLANTS, very choice, 12s. to 18s.
12 ORNAMENTAL STOVE PLANTS, very choice, 12s. to 18s.
12 GREENHOUSE PLANTS, very choice, 12s. to 18s.
12 EXOTIC FERNS, very choice, 12s. to 18s.
12 EPACRIS or ERICAS, for winter blooming, very choice, 12s. to 18s.
12 TEA and NOISETTE ROSES, on own roots, 12s. to 18s.
12 H.P. ROSES, on own roots, new sorts, 1876 and 1877, 12s. to 18s.
12 BOUVARDIAS, fine plants, just coming into flower, 12s. to 18s.
12 CHRYSANTHEMUMS, strong blooming plants, 9s.
12 CINERARIAS, fine named sorts, fit to pot on, 6s.

Half of any of the above sorts may be taken.

All of the above are H. W.'s selection.

H. W. also begs to offer the following New Plants, all free by post :—

COLEUS, splendid new sorts, including Kentish Fire, Lord Falmouth, George Bunyard, Exquisite, Fascination, Royalty, Novelty, Garnet, and Favourite, 2s. each, the set for 8s.

GERANIUMS, Zonal, New Life and Salmon Vesuvius, 2s. each.
" Zonal, Dr. Denny and White Vesuvius, 2s. 6d. each.
" Zonal, twelve of Pearson's new set for 1878, 2s. each.
" Zonal, six of Williams' new set for 1878, 2s. each.

H. W. is at present sending out a Basket, containing twelve choice WINTER BLOOMING PLANTS, composed of Camellias, Azaleas, Bouvardias, Epacris and Ericas, all warranted to bloom, for 21s.

A fine lot of three-year-old well ripened FRUITING VINES, will fruit well next season. Prices on application.

P. O. O. payable at Brierfield. CATALOGUES on application.

CHOICE ORCHIDS.—Many thousands of good plants to select from. Mr. WILLIAM BULL is constantly receiving large importations from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago, and can offer many of the rarest and most beautiful kinds at extremely low prices. Customers can choose their plants from eleven large houses full of Orchids. An inspection is invited.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

To the Trade.

C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices :—

100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.
100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
1000 SPIRÆA JAPONICA, colossal clumps, at £6.

A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Vines—Vines—Vines.

W. G. CALDWELL AND SONS beg to inform their Friends and Customers that their stock of the above is unusually fine this season. Samples have been exhibited at various Shows in the North of England, and they have been highly commended for their excellent quality.

Orders are now being booked from the following varieties :—

Black Hamburgh	Foster's Seedling
Black Alicante	Lady Downe's
Buckland Sweetwater	Madresfield Court
Duke of Buccleuch	Muscat of Alexandria.

Strong Planting Canes, 5s. to 7s. 6d. each.
Extra Fruiting Canes, 7s. 6d. to 10s. 6d. each.
The Nurseries, Knutsford, Cheshire.

STRONG CLUMPS for FORCING.

	p. 100	p. 1000	p. 10,000
DIELYTRA SPECTABILIS ..	£1 5	£10 17	..
ISOTEIA (Spiræa) JAPONICA	0 14	5 17	£56
SPIRÆA PALMATA ..	0 18	7 10	..

Orders to the amount of £2 free throughout Great Britain.

A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, ARACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

CLEARING OUT STOVE PLANTS.—Any one desirous of procuring cheap good collections should apply at once, as the room must be cleared for forcing.

ORCHIDS, fine sorts, in 7 to 9-inch pots, 30s. per dozen.
IXORAS, CROTONS, 9s. per dozen, fine plants.
ARAUCARIA EXCELSA, two, 7 feet, fine plants, £3.
CYCAS REVOLUTA, one, stem 1 foot high, in fine condition, £5.
SOLANUMS, splendid stuff, full of berries, 75s. per 100.

Also a few large PALMS, &c.

THOMAS MILNER AND SON, Nurserymen, Bradford.

SUCCULENTS.—Agaves, Aloes, Yuccas, Gasterias, Haworthias, Echinocactus, Echinocereus, Echinopsis, Mammillarias, Euphorbias, Opuntias, Cereuses, Pilocereuses, Astrophytums, Rhipsalis, Anahlonium Williamsii, Pelicyphora asseliformis, Lophophora Lewinii, echinocactus Williamsii, Echeveria, &c. The above will be disposed of in one lot by private sale. It is well known to growers, and was formed and collected many years ago and since added to from time to time. To any one desirous of forming a collection of the above, this is an opportunity not to be missed with. Many of them are very old, and some very rare, and comprize sizes varying from 1 inch to 8½ feet high, and one specimen 4½ feet diameter. Apply to

J. STRONG CORDEROY, Blewbury, Didcot.

W. HANDSCOMB, The Nurseries, Aspley Guise, Woburn, Beds, has to offer :—

10,000	LARCH FIRS, 2½ to 3 feet.
10,000	PRIVET, Evergreen, 3 to 4 feet.
5,000	OAK, 3 to 4 feet.
2,000	" 5 to 8 feet.
5,000	GORSE, 3 to 4 feet.
2,500	HOLLIES, 1 to 2 feet.
2,000	BEECH, 5 to 6 feet.
1,500	LAURELS, 2 to 7 feet.
1,500	" Portugal, 2 to 4 feet.
1,500	LAURUSTINUS, 1¾ to 2½ feet.
1,600	LIMES, red twigged, 6 to 10 feet.
1,000	CHESTNUT, Horse, 9 to 10 feet.
700	BOX, 6 to 9 feet.
5,000	EVERGREENS, of sorts.

The whole of the above have been recently transplanted, and are in excellent condition for removal.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.

Hale Farm Nurseries, Tottenham, London.

NEW AND RARE LILIES.

LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. 7s. 6d.
LILIUM COLUMBIANUM, extremely rare, 7s. 6d.
LILIUM BATEMANÆ, quite new, 7s. 6d.
LILIUM JAPONICUM KRAMERI, 5s.

Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30s., 42s. and 60s. per dozen.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

SUTTON'S PRIZE CYCLAMEN,
GIGANTEUM ROSEUM SUPERBUM.

This very large and beautiful variety was awarded a First-class Certificate by the Royal Horticultural Society. The bulbs are in the finest possible condition for flowering.
Fine bulbs 5s. and 7s. 6d. each.

GIGANTEUM ROSEUM—Sutton's New Variety of 1877.
Fine bulbs 3s. 6d. and 5s. each.

Persicum album, pure white, 1s. 6d to 2s. 6d. each.
Persicum marginatum, rosy white with red base, 1s. 6d. to 2s. 6d. each.
Persicum roseum, rose with carmine base, 1s. 6d. to 2s. 6d. each.
Persicum rubrum, bright crimson, 1s. 6d. to 2s. 6d. each.
Persicum purpureum, purple, 1s. 6d. to 2s. 6d each.
Persicum roseum album, white with red base, 1s. 6d. to 2s. 6d. each.

N. B. — Cyclamen bulbs can be sent, free by post, for an extra 3d. on the price of each bulb.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN, READING.

ISAAC DAVIES

HAS now to offer a fine stock of the choice early-blooming Rhododendrons and Azaleas raised by him, and which have been exhibited at various Flower Shows, and have received First-class Certificates of Merit.

SWEET-SCENTED RHODODENDRONS.

COUNTESS OF DERBY, 5s., 7s. 6d., 10s. 6d. and 21s. each; a few extra large 42s. and 63s. each.
COUNTESS OF SEFTON, 2s. 6d., 3s. 6d., 5s., 10s. 6d., 15s. and 21s. each; extra large 42s. each.
LADY SKELMERSDALE, 2s. 6d., 3s. 6d., 5s., 10s. 6d., 15s. and 21s. each; extra large 42s. each
MRS. JAMES SHAWE, 2s. 6d., 3s. 6d., 5s., 10s. 6d., 15s. and 21s. each; extra large 42s. each.
DUCHESS OF SUTHERLAND, 2s. 6d., 3s. 6d., 5s., 10s. 6d. and 21s. each.
The above are admirably suited for growing in cold houses without the necessity of artificial heat.

I may refer to the following persons, who are highly competent judges of this class of plants, five of whom have been purchasers a second time—which I consider a better guarantee of their value than the above-named certificates of merit:—
W. E. Gumbledon, Esq., Queenstown, Co. Cork, Ireland; Samuel Barlow, Esq., Slattocks, near Manchester; Bruce Findley, Esq., Curator of Botanical Gardens, Manchester; Mr. F. Harrison (Gr. to Earl of Derby), Knowsley, near Liverpool; Mr. B. Barham (Gr. to Earl of Sefton), Croxteth, near Liverpool; Mr. J. Kefford (Gr. to Lord Skelmersdale), Lathom, near Ormskirk.

SWEET-SCENTED AZALEAS.

DAVIESII, good plants with buds, 2s. 6d., 3s. 6d. and 5s. each.
HYBRIDA ODORATA, good plants with buds, 2s. 6d., 3s. 6d. and 5s. each.

RHODODENDRON MULTIFLORUM, fine bushes, covered with flower-buds, 2s. 6d., 3s. 6d. and 5s. each.
RHODODENDRON PRÆCOX, bushy plants with buds, 1s., 1s. 6d. and 2s. 6d. each.
R. præcox is a hardy early-blooming evergreen, bearing flowers of rosy lilac colour. In addition to other purposes for which it is useful it has been found to do well as a window plant, as it will keep healthy and bloom in February when garden flowers are scarce.
All the above having been raised by myself, I can recommend them with confidence.
Full descriptive LIST on application.

SURPLUS STOCK.

GREEN HOLLIES, 1 to 1½ foot, 15s. per 100, 1½ to 2 feet, 25s. per 100.
CUPRESSUS LAWSONIANA, green and well-rooted, 5 to 6 feet, 8s.; 6 to 7 feet, 10s.; 7 to 8 feet, 12s.; 8 to 9 feet, 18s. per dozen.
ENGLISH YEWS, 2½ feet, bushy, 35s. per 100.
PICEA NORDMANNIANA, 2½ to 3 feet, 1s. 6d. to 2s. 6d. each.
HANDSWORTH BOX, handsome bushes, 3 feet, 6s. per dozen.
IRISH IVY, transplanted last spring, 3 to 4 feet, strong, 1s. 6d. per dozen.
SKIMMIA JAPONICA, 12 inches, bushy, and covered with flower-buds, 5s. per dozen, 35s. per 100.
ANDROMEDA FLORIBUNDA, 10 to 12 inches, bushy, 9s. to 12s. per dozen.
AZALEA MOLLIS, seedlings, 6 to 8 inches, bushes with about twenty shoots, 9s. per dozen.
AZALEA PONTICA, 2 to 2½ feet, bushy, 9s. per dozen; 8 to 12 inches, 16s. per 100.
RHODODENDRONS, hybrid seedlings raised from the best varieties, crossed to obtain brilliant colours, bushes about 2 feet, 9s. per dozen; 2½ to 3 feet, 18s. per dozen; seedlings from the best scarlet, rose, and white varieties (each colour separate), bushy, transplanted stuff, 6 to 10 inches, 16s. per 100
RHODODENDRON CAUCASICUM ALBUM, 15 inches, very bushy, 9s. per dozen.
„ ROSEUM SUPERBUM, 18 inches, with flower-buds, 9s. per dozen.
LIMES, 6 feet, 4s. per dozen.
WHITE BEAM (Pyrus aria), magnificent trees, straight, and bushy, 10 feet, 9s. per dozen.
LOMBARDY POPLARS, 10 to 12 feet, stout, bushy, and well-rooted, 9s. per dozen.
All the above are as fine stuff as could possibly be grown.
Terms.—Cash or reference from unknown correspondents.

ISAAC DAVIES,
NURSERYMAN, ORMSKIRK, LANCASHIRE.

GEO. JACKMAN & SON,
(ESTABLISHED 1810.)



Cultivators of
FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

TEA ROSES
FOR
WINTER FLOWERING.

ADAM
BELLE LYONNAISE
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JEAN DUCHER
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ALBA ROSEA
CATHERINE MERMET
GLOIRE DE DIJON
MADAME FALCOT
MADAME WILLERMOZ
NIPHETOS
SOUVENIR D'ELISE
MARECHAL NIEL.

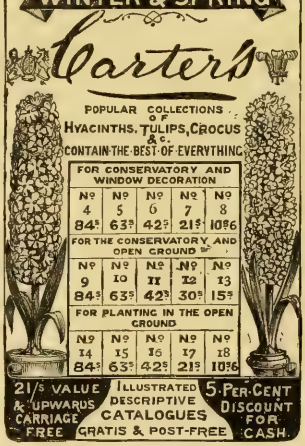
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15 to 16 " " " " 6 inches.

SYCAMORE (Acer Pseudo-Platanus).

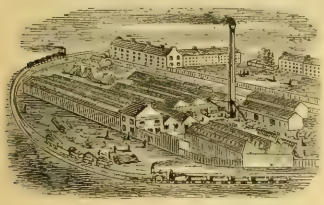
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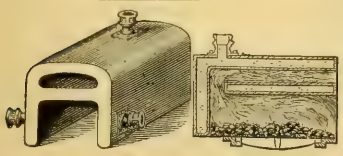
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SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.



SATURDAY, OCTOBER 5, 1878.

STOWE.

AFTER the Conquest, that fountain-head of family history, Stowe and the title of Earl of Buckingham were granted to the family of Giffard, who incurred the fate which has unhappily befallen so many families of note and wealth since the world began. They failed in regard to heirs male. Within two generations the house of Giffard, the wealthiest in Bucks, terminated in a daughter; the lady married, and the estates of the Giffards passed to the house of Clare.

About this time the founder of another family who owned and adorned Stowe in later times, settled at Cobham, near Gravesend, and in John's reign the head of this family became Henry de Cobham, afterwards Lord Cobham. For a long period the successive generations of this very eminent family were distinguished for their virtues and high merits, and then came a Cobham of another sort.

At the old hall at Cobham, the present seat of the Earl of Darnley, the Lord Cobham of James the First's time entertained his illustrious friend and victim, Raleigh, and here the conspiracy was hatched for which several of Lord Cobham's friends suffered, while he escaped, dishonoured and despised, with the loss of Cobham Hall. The first decorator of Stowe was descended from his sister Margaret, the mother of Miss Christiana Leveson, who married Sir Peter Temple of Stowe, and became the grandmother of Sir Richard Temple, who was created Baron and Viscount Cobham—a title still enjoyed by his descendants, the Dukes of Buckingham.

Stowe was converted from a plain manorial residence in the early part of the last century. Carpenter's gothic was then the mode in garden architecture; squirting waterworks and dribbling fountains were in fashion, and Stowe became a striking illustration of the taste of the eighteenth century. Bridgeman was one of its embellishers, and one of the most eminent despoilers of scenery of the last century; Launcelot Brown began his career here, married a young woman of the village, and became head gardener in the flower and kitchen department; and he would have tried his hand upon the landscape, but Lord Cobham preferred Kent for his own improvements, and sent Brown into Northamptonshire to manage for his friend, the Duke of Grafton. Kent was not to blame for the monstrosities of Stowe. The garden contained 400 acres enclosed within a sunk fence, and he laid it out extremely well. Lord Cobham was the author of the meretricious work, the arches, temples, obelisks, hermitages, and pavilions; and in the middle of a large lawn encircled with trees he erected a rotunda upon ten Ionic columns, with a statue of Bacchus posed in the centre. Near a temple of Venus he placed a statue of Queen Caroline, whose fair form was reflected in pellucid water; but as the site was rather damp this statue required scrubbing frequently.

The classic ages were illustrated by the Elysian fields, which you entered from the parterre by a Doric arch. Apollo and the Muses were sometimes dripping with rain; and heroes, poets, and philosophers were partly swaddled thick in straw to protect them from the frost.

There were five illustrative temples, those of Friendship, of Ancient Virtue, of British Worthies, of Concord, and of Victory. Appropriate inscriptions were composed for each by George, Lord Lyttleton, and of these the briefest are the best. In the Temple of British Worthies there is this inscription :—

"Sir Isaac Newton, whom the God of Nature made to comprehend His works."

John Hampden, the patriot, is commended here ; his defence of liberty is mentioned and his heroic death. Two poets of Bucks—Pope and Milton—are here appropriately glorified, as are Socrates and others in the Temple of Ancient Virtue. Pope's laudatory verses were inscribed on Lord Cobham's pillar with those on landscape gardening, which begin—

"Consult the genius of the place in all,"

and end—after urging the rules of procedure —

"Nature shall join you ; Time shall make it grow
A work to wonder at, perhaps a Stowe."

Pope was a frequent visitor at Stowe.

The Temple of Friendship was appropriated to the busts of friends, and on the same side of the garden were the Pebble Alcove and Congreve's monument, with a monkey on the top viewing himself in a glass, with this inscription—

"Comedy is the Imitation of Life and the Mirror of Fashion."

Horace Walpole speaks in his younger days with pleasure and respect of Stowe's "multiplicity of temples and obelisks ;" some outdoor and rather damp festivities later on diminished his pleasure, and occasioned rheumatism.

The magnificent reign of Sir William Temple, Viscount Cobham, ended in 1749. His sister, Hester Temple, who succeeded to the peerage by special remainder, married Richard Grenville, of Wotton, and their son became Earl Temple at the death of his mother, and inherited the estates of Stowe and Wotton. He lived magnificently. Lady Temple's waiting-maid describes a garden entertainment during a royal visit. She says (*Grenville Correspondence*, vol. ii., p. 406) :—

"July 22.—Arrived Earl of Ashburnham, Mr. Pelham, Sir Jeffery Amhurst, and Mr. Offley. July 23.—Arrived at 1 o'clock Her Royal Highness (the Princess Amelia), accompanied by Lady Mary Campbell, Lady Barrymore, Mr. Middleton, Earl of Bessborough, Earl of Coventry, and others whose names I could not learn. At 3 went to dinner, the first course consisting of twenty-one dishes, elegantly served and well arranged ; a second course of twenty-seven dishes—the capital dishes in the first course twice removed, and a well-filled side-table of wholesome cheer, all served in plate. Her Highness eat off gold. Nothing can exceed the grandeur and order by which everything was conducted. Twelve gentlemen well dressed waited at table, and twenty-four in livery waited in the next room, and in the grand hall near the dining-room was a grand concert of music. The same thing every evening. During Her Royal Highness' stay the state apartments were illuminated with 120 wax lights. At half-past 10 Her Royal Highness retired to her bedchamber, and the nobles to supper, consisting of twenty-one dishes and a fine dessert. July 24.—Her Royal Highness, attended by the nobles, went round the gardens to view the curious works of Nature and Art, which were in great variety. The buildings, plants, and walks, together with the fine pieces of water Her Royal Highness beheld with great astonishment and admiration, answering far beyond any former reports, descriptions, or conceptions. After dinner Her Highness went round the park, and returned highly pleased with everything she saw.

"July 25.—Her H. walked in the garden, in order to take a second view, but was prevented in great measure by a heavy shower of rain, which obliged Her H. to take shelter in Venus' habitation. July 26.—Very rainy. July 27.—All day a number of people were preparing the grotto and garden for Her H. and company to sup there, the badness of the weather not permitting any entertainment there before. At ten the gardens were illuminated with about a thousand lights, and the water before the grotto was covered with floating lights. At the further end of the canal, on the ship, which was curiously figured with lights, was a place for the music, which performed all supper time. Upwards of one thousand people came from all parts to see the company at supper, which greatly added to the grandeur and magnificence of the place. The mixed assemblage, which deserves a better appellative than a mob, behaved with the utmost discretion and civility. Her Highness walked down to the grotto at half-past ten, and was pleased and delighted with the grand prospect which was presented to her view ; nothing was seen but lights and people, nothing was heard but music and fireworks, nothing felt but joy and happiness."

The "waiting maid" adds that she never saw any entertainment conducted with more care, order, and decorum in all her days, "every one endeavouring to outdo another in the places appointed for them by their noble master and mistress, whose approbation and acknowledgment they in general received after the company departed."

In referring to the several Premiers who have been connected with the county of Bucks, Mr. Disraeli spoke of Chatham having nursed his love of freedom among the *templa quam dilecta* of Stowe. He was one of a school of youthful politicians encouraged by Lord Cobham—the Grenvilles, Lyttleton, and other young men of talent, commonly known as "Lord Cobham's cubs." They were all his frequent visitors at Stowe—"the fair majestic paradise of Stowe," praised by Thomson in wooden verses, the best he could command on such a theme.

There was a common cause of sympathy between the old Cobham and the young Pitt—they had both been badly used by Sir Horace Walpole. Pitt entered the House of Commons a cornet of dragoons, and at the first sound of his melodious voice attacking the venal minister and his government Walpole had exclaimed, "We must muzzle that terrible cornet," and the cornet was dismissed his regiment. Field-Marshal Lord Cobham was as roughly handled for rearing Cobham's cubs among the *templa quam dilecta*. At Stowe the young cornet's marvellous voice and his charms of eloquence and conversation proved irresistible. He was the most agreeable of companions, the most versatile of wits ; even the fastidious Chesterfield confessed him perfect. Lord Cobham said of him, "In a short quarter of an hour he can persuade any one of anything."

The cornet (who was an excellent gardener) married Lord Temple's sister, and became the "great Commoner" and Lord Chatham. Writing to his kinsman, the Earl of Chatham thus refers to Stowe :—"I hope pleasure has constantly attended your steps, and that health herculean enables you to pursue, without fatigue, the herculean labours of magnificence and taste in which you are engagaed. All here, thank God, are well, and our Hill knows no complaint but want of rain." Lord Temple had written a poem of sixteen stanzas calling Stowe "the Hill of Hills." Here is a specimen :—

"Tell me no more of Temple's vale,
Nor boast of Arno's flowery dale ;
Taste must confess superior still
The charms which decorate my Hill."

Lord Temple's death occurred through a fall from his pony-carriage in the park ridings at Stowe in 1779. He was succeeded by his nephew, George Grenville, who married the daughter and heiress of Earl Nugent of Gosfield Hall, Essex, and was created Marquis of Buckingham. A third magnificent reign at Stowe terminated with the thirty days' sale of art-treasures in 1848. *H. E.*

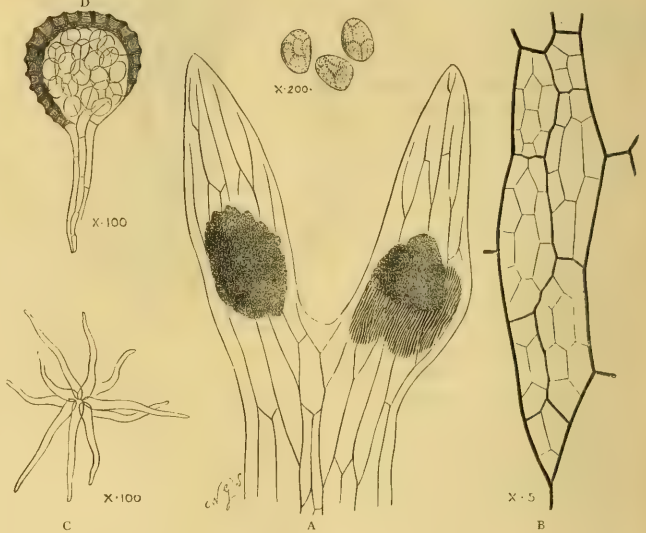


Fig. 74.—Platycerium hillii. (See p. 429.)

A, Fertile segments, nat. size. B, Venation. C, Scales. D, Spore cases. E, Spores. (B to E magnified.)

New Garden Plants.

Agapanthus umbellatus var. Leichtlinii, *Baker*.

This is a new form of Agapanthus, recently imported from the Cape by Herr Leichtlin. It has the dwarf habit of A. minor, Lodd. *Bot. Cab.*, t. 42, but differs from that species or variety by its shorter broader leaves, denser umbel and larger individual flowers. The leaves under cultivation do not reach 1 foot in length, and are about ¾ inch broad. The slender common peduncle attains a length of not more than 1½ foot. The pedicels are not more than a ½ or ¾ inch long. The perianth is in colour a deep bright hyacinthine blue, 1½ inch long, with inner segments ⅓ inch and outer ¼ inch broad. Altogether it has the dwarf habit of A. minor, leaves in breadth and flowers in size approximating to those of typical umbellatus and a more compact umbel than any form previously known. It flowers in June. *J. G. Baker*.

Platycerium Hillii, *sp. n.**

This Queensland Elk's-horn Fern appears to be hitherto undescribed. It has recently been received in this country by Messrs. Veitch & Sons from Mr. W. Hill, after whom it has been named, and is, as our illustrations (figs. 74 and 75) show, quite distinct from the species previously known. The "root-stock" is convex, obliquely ovate, forming a solid mass about 8 inches through and 9—10 inches high, closely investedby the sterile fronds, which are glossy brown and veiny when mature, with the growing point near their centre. These terile fronds are greyish when young, sessile, roundish with a sinus where attached to the growing point, thin and entire at the margins, the veins conspicuous on the surface, the principal ones flabelliform, with irregular hexagonal areoles between. Perfect fronds erect, 1½ foot long, unaided sight. The basal portion is narrowly cuneiform, about 1 foot high, and measuring below the segments about 8 inches broad, tapering gradually downwards to the short stipes, which is 1 inch long, and is continued upwards as a thick prominent costa half way up to the lobes, where it parts into a flabellate series of primary veins forking as they proceed outwards into the lobes. This portion becomes green almost before the segments begin to develope themselves, and at a very early period of their growth the fronds appear to be both green and glabrous. The ramifications of the lamina are confined to its upper third. There are two deep incisions near the central part of the apex, the middle segment thus formed being much smaller than the outer ones, usually with only a short lateral segment on one or on both sides near the top. The lateral divisions are



Fig. 75.—Platycerium Hillii, mature plant.

several springing up close together (9—10 in the plant before us); in the young state clothed with white stellate scales, which also clothe the ultimate lobes in the incipient state after the basal portion is fully developed. The mature fronds are very thinly covered with minute stellate scales (see fig. 74c), which are eventually rubbed off, the under-side being also dotted with scales, but appearing to be glabrous to the more compound, being divided by about three successive furcations into oblong lobes narrowing towards the bluntish apex, these lobes ¾ inch, or in the few broader ones 1 inch across. Sori irregular, but forming small roundish or somewhat oblong patches ⅛—⅛ inch across, situate at the base of the ultimate lobes, or about an equal distance from the apex if there is no side lobe. These are shown in fig. 74a, the sporecases being represented as partially removed from one of the sori, in order to show the closely reticulated receptacular veins.

The decided green colour of the plant, which we have observed in various living specimens, is one remarkable feature in this plant, the Platyceriums being usually of a greyish hue, from the abundant white stellate scales scattered over their surface, and which appear to be usually more pronounced and persistent than in this species. In size and general aspect the plants bear a certain resemblance to P. alcicorne, but the ramification is different, being confined to the upper one-third of the frond; while the position of the sori separates it both from this and from all other described species. The specimen from which the foregoing notes were drawn up was kindly furnished by Messrs. Veitch & Son in August last, and by whom the plant has been produced in public on one or two occasions, notably at the Preston show, in our report of which the principal figure here given (fig. 75) was introduced. *T. Moore.*

* Sterile fronds sessile, suborbicular, spreading, with a sinus where attached to the crown of the rootstock, convex, 9–10 inches across, lying closely over each other, quite thin and entire at the margin, greyish with stellate hairs when young, and becoming brown and glossy when mature. Fertile or leafy fronds 18—20 inches high, clustered, erect, with a stout terete stipes about 1 inch long; frond cuneate, tapering downwards to a long narrow base, the basal portion undivided, upwards of 1 foot long, the upper portion (about one-third) dilated, 15—18 inches across, three-parted, the central segment with one or two side lobes near the apex, the two lateral segments broader and twice or thrice forked into 5—10 ultimate lobes. Sori in small roundish patches near the base of the ultimate segments—not in the sinus; mature fronds green and nearly glabrous. *T. M.*

HERBACEOUS PLANTS AT KEW.

Indications of the approaching winter are seen with no pleasure, except in the beautiful foliage tints and in the flowering of many fine herbaceous plants; these claim an interest second only to that of the first harbingers of spring. The consideration how to prolong the floral season is the more important now that all tender bedding plants may any morning be found a frost-bitten unlovely mass. Poor indeed is the garden that has no resource in a well-ordered herbaceous border.

Under a south wall the first flowers of the Belladonna Lily are just expanding; its beauty and perfume need no praise, but we wish to point out that its outdoor culture need not be the monopoly of favoured spots. Here it is quite hardy without protection. Colchicum speciosum may well be compared to this for size and delicate colour; in its own genus it is without equal. Also beautiful is C. autumnale with its white and pink double varieties; another is C. variegatum with well-marked tesselation. Several species of autumnal Croci recommend themselves to notice, none are more showy than C. speciosus and C. nudiflorus, while for delicacy of

mauve tint C. pulchellus stands without rival. Then follow C. Boryi, pure white, and C. Kotschyanus, somewhat pink. Others will almost immediately open.

Few plants are more effective than Pyrethrum uliginosum; it grows 5 or 6 feet high, bearing immense white-rayed flower-heads unsurpassed amongst daisy-like blooms. Rarely is this grown in sufficient quantity, but we can well imagine its effect, especially with a backing, for instance, of dark shrubs. Ophiopogon spicatus is now in its beauty: with a fountain of dark narrow leaves it sends up numerous spikes of blue flowers. Kniphofia Macowani, well known at least to many readers, is still in bloom, and K. sarmentosa, a rare and distinct species, is just on the wane. Anemone vitifolia and japonica, with the form known as Honorine Jobert, are in fine condition, and stand among the most essential of border flowers. Asters yearly receive attention; the best at present are A. Amellus and its variety bessarabicus, A. grandiflorus, A. Novæ Angliæ and variety pulchellus, A. turbinellus, A. ericoides, and A. Novi Belgii var. minimus: all these are very select. Galatella dracunculoides, of bluish lilac, is the most effective of a genus closely resembling Aster. Vernonia noveboracensis is distinguished among the tall-growing Compositæ by its neat habit and rich purple flower-heads. Silphiums are commanding in appearance from their large foliage; the two best are S. perfoliatum and S. laciniatum (the Compass-plant), both with large yellow flower-heads. Helianthus orgyalis stands alone among generally coarse relations in its slender and gracefully flowing leaves. H. multiflorus fl.-pl. is valuable for its double flowers and dwarf habit. Rudbeckia speciosa is one of the best herbaceous plants of this season; it grows about 1½ foot high, and is justly admired for a profusion of large bright yellow flower-heads.

Annuals, by special exhibition and culture, have recently made, as they justly should, a further step to the front. Coreopsis tinctoria is now very fine, and for its deeper colour the variety purpurea is admirable. In another part of the ground Impatiens glandulifera and I. amphorata are highly effective. The former in particular deserves note; growing with vigour to even 5 or 6 feet high, it produces an elegant profusion of purple flowers; in any wild part it may be allowed to care for itself, coming up every year from self-sown seed, and that without making a weed. Convolvulus mauritanicus, a beautiful blue trailer, is justly a favourite; C. Dorycnium is a neat twiggy species with pink flowers, and C. Scammonia, forgetting its drug-yielding value, should also be grown for its white flowers and distinct foliage. A medical contemporary suggests its culture in the newly acquired island of Cyprus; we might further enquire if its value has been tested when grown in this country. It is quite hardy, and like Rhubarb might prove of value. Too much cannot be said in favour of the perennial Lobelias now in great beauty. In good garden soil they cannot be excelled for brilliant colours, L. splendens is fiery scarlet, and the variety ignea deeper still; L. fulgens, carmine, and the variety Milleri, bright lilac, make an equal display. L. littoralis carpets the ground with its trailing stems and at this season is usually covered with reddish berries. On rockwork its white flowers are often effective. Phygelius capensis and Salvia farinacea we noticed a short time since, and still they continue in equal perfection. Crucianella stylosa and its deeper variety coccinea are commendable for their long season of bloom; the flowers commenced early in summer and yet still they come.

The South American Eryngiums, scarcely known a few years ago, are now a feature in every good collection. E. eburneum, E. paniculatum, E. Lasseauxi, E. Serra, and E. pandanifolium, one of the finest, have now fine panicles. We gave an account of these in our issue of September 21, and all are included in the Kew collection. Sedum spectabile is well-known as one of the finest, and only requires a mention. It is in good condition on the wild rockery at the head of the ground, where also the nearly hardy Verbena venosa will make a display when its tender brethren have been gathered from off the ground. Erigeron mucronatum is here in charming profusion of bloom, and doubtless will long continue to be. On the rockwork we find in flower the delicate Omphalodes Luciliæ, and another of its order in Lithospermum prostratum, with also the yellow-flowered and scarce L. orientale, which appears to flower nearly all the year. Polygonum Brunonis, with a dwarf tuft of foliage, has numerous spikes of pink flowers. Senecio pulcher still continues to flower. Lastly, we have to mention the flowering of Meconopsis simplicifolia; its leaves form a rosette on the soil, and from its centre arises a scape bearing a single purple flower.

THE TREES IN THE PARKS.

I HAVE read with much interest the notices which have appeared in your columns relating to the trees in the Parks, the last being from Mr. Newton, who signs himself "Landscape Gardener." I would now ask you to publish a communication from an amateur and owner of trees. I am very fond of my trees, and never willingly leave them, but circumstances oblige me to be much from home, and many months in each year in London; but wherever I am, at home or abroad, the contemplation of trees affords me my favourite recreation, so that perhaps my remarks may be worth insertion in your columns.

First, as to the general treatment of the landscape gardening of the Parks; that is more in Mr. Newton's line than mine, but I could point out that his recommendations can only be partially carried out in Kensington Gardens. We are tied to its main feature, the broad avenues radiating from the Round Pond. It is not a style which I admire, or which I should recommend to be adopted in laying out a new park, but it has a certain stately beauty of its own which should be maintained. I see, however, no reason for retaining dense masses of trees behind the avenues. I quite agree with Mr. Newton in what he says of the treatment of the ground on the east side of the Serpentine—glades can be obtained in other places without interfering with the main features of the gardens, such, for instance, as exists where the old Scotch Firs once grew on the north side. This, I think, should not be planted up—indeed I think there are other places which have been replanted which might have been judiciously left bare of trees.

Next as to the treatment of existing trees. I think the criticisms regarding the state of the old trees in Hyde Park and the charge of neglect against the present management are most unjust. Nearly all the old trees in Hyde Park are Elms in a hopeless state of decay; if their condition be the result of neglect, it may have occurred many years, even centuries ago. The Elm, like a revengeful man, never forgets an injury, the wound may grow over and have been forgotten, but the decay caused by it spreads inwardly, unsuspected till some storm proves that what appeared a thoroughly healthy tree is a mere shell. This is more or less the case with many trees, but more with the Elm than any other that I am acquainted with. In Kensington Gardens the worst trees are the Oaks; their condition, too, I look on as hopeless; this is probably partly caused by defect of soil, partly by London smoke, which appears to be fatal to Oaks, this latter cause having destroyed nearly all the Scotch Firs, which were once such an ornament to these gardens. Then come the Lime and Horse Chestnuts: they have apparently been much neglected till of late years, having been left much too thick; but, generally speaking, I do not regard their condition as hopeless. Though very many are stagheaded they appear to have profited by recent thinning; let this be continued cautiously year by year and I do not despair of many of those most drawn up becoming handsome trees: but though they have suffered mainly from want of thinning, I doubt if it is the only cause of their unhealthiness. It appears to me that the nearer the trees are to the Round Pond the more unhealthy they are, and that excessive moisture percolating the subsoil from the pond may be the cause of some of the mischief. I think, too, that the present want of thinning has been much exaggerated; there are certainly spots towards the west end of the gardens where a good many trees might be judiciously taken out, but not to the extent of every other tree, as recommended by Mr. Newton. There are other trees in Kensington Gardens, such as Spanish Chestnut, Beech, and Ash, which will, I think, be exterminated by London smoke in a few years.

Then, as to the kind of trees to be planted, I would strongly deprecate the planting of any quantity of trees of any kind not proved to be able to bear London smoke; these are comparatively few, the best being Plane (the best of all), then perhaps Poplars of different kinds for moist places (I would strongly recommend that Poplars should be planted exclusively near the Round Pond), then Horse Chestnut and Lime. There are others which probably would for a time make a show, but not seeing them except as miserable specimens in London, I should fear that the westward spread of the great city would be fatal to them before they became large trees. The list is a scanty one, but it comprises some of our noblest trees. I have not the pleasure of Mr. Newton's acquaintance, but I should think poorly of his professional abilities if he could not produce beautiful effects with them.

I could not recommend experimental planting in the London parks for general purposes of instruction. Who, for instance, could learn anything of the general effect to be produced by planting Oaks or any of the Coniferæ from a study of the specimens to be seen in London? With this exception, however, that experiment might be made to ascertain the suitability of new trees to the climate of London, I quite agree with Mr. Newton as to the desirability of thinning the trees by the side of Rotten Row and elsewhere. Of course, ignoramuses will howl, as when the Elms were removed from the Green Park by the side of Piccadilly, where more still may be done with advantage. *C. C. H. G.*

ZONAL PELARGONIUMS AT CHISWICK.

THE nearer we approach the winter season the more effective and striking in appearance do the Zonal Pelargoniums become. In all cases where there is glass accommodation a collection of Zonals should be grown as late summer and autumn flowering plants. As the duration of daylight sensibly wanes and the night lengthens, the flowers take on greatly intensified hues of colour, and it is difficult to recognise some of them. The tints of purple mount up to an almost regal brilliancy, while pinks deepen to violet, and salmons to orange-carmine. At Chiswick there is a very interesting set of these plants, they are blooming freely, and appear likely to flower for a long time to come; and a selection of varieties as follows gives a batch that are well adapted for cultivation in pots for flowering under glass through the autumn and winter. Perhaps a leaf might be borrowed from the books of the market growers, small plants in 48-pots being most likely to stand and flower well through these dull days.

Of pink varieties our selection should include Mrs. Wright, Mrs. Leavers, deep in colour and very fine; Blanche Gordon, very dwarf in growth, free blooming and fine in colour; Louisa Squires, purplish pink, very pretty; Lady Sheffield, Octavie, a charming light variety, but described as Apple-blossom, tinged with delicate violet; and Paddy, pale pink, delicate, and very pretty. The depth of colour taken on by some of these pinks at this time of the year is most remarkable, and it is difficult to find in the richness of the violet tints the flowers grown under the brilliancy of the summer sun, and the full light of a long June day.

The salmons are like the pinks—they become very deep in colour, and what might be termed orange-carmine shades prevail; the flowers of the type of Vanessa are very fine and striking just now, so novel and distinct do they appear. In addition to Vanessa there are Merry Duchess, Mrs. Bourne, which might be best described as a warm salmon, so glowing does the tint become; Beauty of Allendale, very bright; Lady Eva Campbell; Gertrude, very good; Pierre de Perthus, in the way of Vanessa, but very bright in colour; and Charles Smith, also in the same way, but very striking. All the salmons are very pleasing indeed at this time of year.

Of white varieties—if purity be sought for—Jeanne d'Arc, Madame Edgar Quinet, and Snowdon are decidedly the best. The great value of Jeanne d'Arc lies in the fact that in its flowers can be noted an almost entire absence of the red stamens that disfigure some of the white, or, at least, detract from their purity. Jeanne d'Arc must stand at the head of the whites, Snowdon coming in next.

If any particular type can be said to kindle one's liking for these gay flowers into something like enthusiasm it is the purple-flowered varieties. They have taken on quite a rich and uncommon glow of purple now, like that which gives a lustre to an imperial robe. The purples are grand in their warmth of floral expression, especially such a fine variety as Dr. Denny, but it has a bad habit of growth [Which however is remediable. EDS.]. Then there are Louis,

Zuleika, Æolia, Atalanta, very fine; and Irene, all furnishing fine and rich tints. There are many others, but the foregoing represent the cream of them now in bloom.

The crimsons too are very fine and showy, the colours very deep, even to a rich blackness of crimson. This is eminently true of such fine forms as J. C. Musters, Samuel Plimsoll, Charles Schwind, very good; Empress Maude, very rich in colour; Lustrous, well named, for it is exceedingly bright; Nyanza, very rich in colour; and Walter Scott, also very fine. The cool autumn weather appears to give a noticeable consistency to the pips, which in size and stoutness of texture make them of great value as decorative agents.

Lastly come the scarlets and those having touches of magenta on the petals. Two scarlets were particularly good, viz., Colonel Seeley and Gnome, both very bright and effective. Those having cerise-scarlet flowers, the scarlet preponderating, comprised some very fine sorts, especially Mrs. Newdegate and Mrs. Pearson, both grand in form and size; and Lizzie Brooks. Of those having magenta-tinted flowers, Spelling Bee, Miss Wakefield, and Mrs. Jacob were specially attractive.

Plants grown on from spring or summer struck cuttings will be found the best for flowering in autumn and winter. Having been well grown during the term of probation, and the pots filled with roots, the plants with ordinary attention bloom freely and finely in a sufficiently warm temperature. *R. D.*

GILDABROOK, ECCLES, NEAR MANCHESTER.

The love of gardening is not confined to any class or condition of men, nor is the pleasure to be derived from a garden to be measured by its extent. The cottager with a rod or two of ground in front of his cottage cultivates his little plot, tends his flowers with loving care, and is in many cases happier in the enjoyment of them than the owner of 10,000 acres is of his vast possessions. The garden also brings a solace to the business man from the worry and anxiety of his daily life. A gentleman in business in the East-end of London told me that if it had not been for the relief that he experienced from tending his flowers, during a severe crisis in his business, that he would have given up in despair. There is much to be learned by visiting gardens where the owner understands the culture of his flowers, and takes a personal interest in them.

The owner of Gildabrook is Mr. Gorton, a florist, and the flower that he has given most of his attention to is the Carnation and Picotee. Of these he has a very large collection, comprising all the best varieties in cultivation. They are cultivated in pots and beds, and they are also well grown. The time has now arrived to take the layers from the parent plant, this is done about the last week in September or the first in October. I rather incline to the later date, as I have found, when potted very early, even if they are well rooted at the time, the plants do not succeed so well; the reason of this I have not been able to determine, and it may not be the experience of all growers. Mr. Gorton had not noticed this in his own experience. As a proof, too, that some varieties thought to be in the highest position only a few years ago are gradually being displaced by better sorts, Mr. Gorton told me that he must this year discard such as Mrs. Lord, heavy rose, and one or two of the light purples of the character of Mrs. Little.

The opinion of Mr. Gorton and others of the Northern florists on the "exhibiting and dressing" controversy is that much that has been written against it has been by men who know nothing about what they write, and that their arguments, if such they can be called, are unworthy of notice. The carping critics alluded to delight in misrepresenting the facts, using the word mutilation in a sense that conveys an erroneous impression to the general public. There is another aspect of the case that has so far been lost sight of, and that is the fact that in the eye of a botanist a double Carnation is a monstrosity, and has been made such by the art of the cultivator. Art and Nature have been combined to produce the flower before it has been "seized by the scurf of its tender throat" by a barbarous florist. If you blame the florist for dressing a flower, you must also blame him for producing it. However, let us hope that the misused phrase, common sense, will prevail.

The Auricula is another of Mr. Gorton's flowers, and if it occupies the second place in his regard it is because he cannot obtain the best sorts. Many varieties of the Auricula are slow of increase, still, with a better knowledge of the flower than we yet possess, much greater results will be obtained. Few florists would care to cut the head of a choice and scarce sort, but I have practised this very successfully, and will give one case as an illustration. I cut over Taylor's Glory on April 30, 1875. The top was placed in a very small pot, and speedily formed roots; from the old stump came six offsets, and by the end of the season I had seven Taylor's Glory. Since that time two more plants have been beheaded, and the result is thirty plants. It will be readily observed that in three more years nearly 300 plants might be produced.

I admired Mr. Gorton's arrangements for his glass coverings. The plants are in frames, with the pots plunged in sand in the usual way; but overhead is a light glass framework, raised sufficiently to allow a tall person to walk comfortably underneath. Chrysanthemums are grown as well at Eccles as I have ever seen them, even at Stoke Newington in its palmiest days; and notwithstanding that the plants have been grown with the greatest luxuriance they are still very dwarf. It is the custom with most cultivators to grow on their plants without pinching the growths back, but these plants were stopped in May and started from quite near the surface of the ground. Four or five growths only were allowed to grow from each plant, and now each of these shoots has a well-formed flower-bud at the end of it. The foliage on these Chrysanthemums I have never seen surpassed. One plant is grown in a 10-inch pot. With such extreme luxuriance in the growth of the plants I have never seen such a dwarf habit, and this can only be attributed to pinching over the growth in May. The other elements of success is potting in good turfy loam with a fourth part of rotten manure, and liberal supplies of manure-water when the flower-buds are set. *J. Douglas.*

NOTES FROM THE POTATO SHOW.

A mere record of the awards at such a show as was the recent International Potato Exhibition affords but inconclusive evidence of the general results that, to any one versed in Potato lore and culture, seems to follow such displays of the tuber. To the majority of readers these records present solely the gains or losses of various individuals, but the cultivator is rather interested in noting the progress made in the development of the Potato in the hands of the many able growers who stage the vast numbers of exhibits, and in comparing the features displayed in the several sorts shown that have been grown in all kinds of soils and in all parts of the kingdom.

A captious critic of a certain knowing school may perchance be heard to exclaim, "Why, the old Fortyfold was better than any new Potato here." This is just the sort of criticism that enthusiasts have to contend with, as it emanates from persons who are practically ignorant, or having in years past grown their typical kind steadily refuse to believe that the world has prospered since their day. No more tangible evidence of the advance made in the development of the Potato could be found than is seen at the International Potato Show, as the Fortyfold is not only never seen on its tables, but is rarely grown in gardens. If any one would care to test Potatos in relation to table quality, they will find that in this sense there has been no retrogression since the days of the Fortyfold. The Lapstone, Victoria, Rector of Woodstock, King of Potatos, Schoolmaster, Woodstock Kidney, McKinlay's Pride, Radstock Beauty, Early White Kidney, Magnum Bonum, Blanchard, Covent Garden Perfection, and scores of others testify that there has been no falling back, whilst we have added beauty, refinement, and greatly increased cropping qualities—features that are worth something, and enable us to say that, if rowers, cricketers, racehorses, and other fallible things succumb to the foreigner, at least in Potatos we can lick creation, the prolific United States not excepted.

In the simple matter of the production of bulk, what a stride has been made since the old Fortyfold days! What sorts could then compare with Snowflake, Trophy, Manhattan, Magnum Bonum, International, and Schoolmaster, which present but a few examples of kinds that will produce great size in tuber and enormous bulk in crop, if those features alone are all that growers look for? Even in the limited sense of bulk only, the Potato produce through the introduction of these kinds has been enormously increased. There can be no reason for doubting but that the committee of the International Potato Show have reason to be proud of the success that so far has resulted from their efforts to promote these annual gatherings; an immense impetus is thus given to the cultivation of the tuber as well as to the production of new kinds, some of which may prove to be *bonâ fide* sterling kinds, and growers will not grudge the little expense and trouble involved in the growing of many and various sorts, if out of the mass eventually shall come some that shall give us our ideal of disease-resisting, large cropping, beauty, and the most refined quality.

A notable feature in the show was the constant repetition of various kinds in the several collections, and we cannot but draw from that fact the inference that these said kinds, in addition to being favourite exhibition kinds, must also be generally good doers in all soils and situations. In this respect some of the most recently introduced sorts present evidences of special value over older kinds. The premier place was taken by Mr. Fenn's fine kidney, International, undoubtedly the largest cropping and handsomest white kidney ever sent out; this, in addition to some twenty dishes in the special class allotted to it, was also found in fifty-three separate collections—a strong proof of its popularity with growers. Next to this came that very fine and valuable white round, Schoolmaster, which was found in forty-seven collections. Blanchard came in thirty-five lots, Rector twenty-nine, Grampian twenty-eight, Porter's Excelsior twenty-five, and the new large red kidneys, Garibaldi and American Trophy, twenty each. No other kinds exceeded these numbers amongst sorts of recent introduction, but of old ones the most favoured were Snowflake and Lapstone under its various synonyms, which were found in twenty-seven and twenty-nine collections respectively. Trophy is perhaps less known than other sorts, and of this it may be said that what Snowflake is amongst whites Trophy is amongst reds. It is even, smooth, very handsome, needs only moderate cultivation, and then produces a very large crop of good-sized tubers. It presents a very decided advance upon Late Rose, Superior, Ruby, and all other American red kidneys. Manhattan, another new American, resembles the Old Farmer's Glory, but less uneven in appearance. It is a very heavy cropper, but the flesh is somewhat coarse when the tubers are big. Triumph is a very pretty red American, resembling a refined Flourball. The bright colour of the skin is perhaps its chief commendation. One other new American sort, shown yet only by Mr. McKinlay, Shelburne, is almost an oval-shaped tuber, the skin presenting not the whiteness of our best white kinds, but "pallid," like the countenance which is "sicklied o'er with the pale cast of thought," but, curiously enough, the nose tinted with red. In form, however, it is very handsome. The Messrs. Hooper exhibited about twenty kinds of recent American introduction, but none of these displayed special features of cultural value in advance of those just mentioned.

English raisers have not been idle, and have perhaps more than in times past sought for size attached to the best table quality, and have not been unsuccessful. The new Woodstock Kidney, raised by Mr. Fenn, is one of the grandest Potatos ever raised by any one. Samples of this were exhibited only by the Messrs. Sutton & Sons, of Reading, who hold the stock, and by Mr. McKinlay, who had several dishes of it, and whose samples ranked amongst the handsomest seen in the show. Mr. McKinlay found when this kind was lifted that it gave at once the best crop and literally handsomest sample of any white kidney he ever lifted. Further than this, it combines all the best features of a table Potato—it is simply perfect. The Vicar of Laleham, raised by the Rev. Mr. Peake, of Laleham, is a very fine flat round, having a bright violet-purple skin and flesh of pure white; it is a seedling from Red Emperor and Victoria, and presents all the best features of these two fine kinds. This was shown only by Mr. R. Dean. Emerton's Advance is a decidedly improved Victoria, from which it is a seedling. This was quite free from disease, whilst Victoria suffered severely. Beckenham Beauty is a very early and handsome white kidney of Mr. McKinlay's raising, and is a fine promising kind.

Mr. Fenn had several samples of his Anglo-American crosses, all very fine taking kinds. These present the fine cropping features of the American parents with the excellent table quality of our best English sorts in alliance. In a year or two hence some of these will make a noise in the Potato world.

This somewhat slight reference to the seedling kinds presented at the show naturally leads up to a reference to the singularly critical and elucidatory remarks upon the raising of new kinds and the Potato show generally offered by outsiders, especially in the columns of the *Times* and the *Daily Telegraph* newspapers. The *Times* report of the Potato show tells us that, although in agriculture the plant is usually propagated by dividing the tuber into "several slices," each of which contains an eye or stem-bud, the "farmers" of new varieties resort to a different method. They mingle the pollen of the blossoms of two kinds of Potato as the bees or the wind might mingle it in a state of Nature. When a Regent is thus combined with a Fluke, the offspring may be expected to have the weight and solidity of its female parent with the level eyes of the Fluke, that nothing may be lost in the peeling; and thus has this veracious reporter been coached up to write drivel. The acme of the absurd however is reached when we are gravely told that to "avoid introducing the Colorado beetle the American Potatos sent out to English growers by the principal seed merchants are "raised from American seed in this country, not imported direct;" and other nonsense, all of which is so utterly stupid and positively untrue as to make us blush for the character of our daily Press.

After such exhibitions of ignorance as these can we afford to laugh at the eccentricities of the French newspapers? But the most amusing feature of these criticisms is found in the fact that in the leader which the *Daily Telegraph* devoted to the Crystal Palace exhibition on the 27th, almost the very words and exact fallacies shown in the *Times* report were reproduced—the writer being either the same in both cases, or else a veritable appropriator, who did not scruple to filch from the *Times* and work it up as original. The leader writer opens with a cutting from the leader in the *Gardeners' Chronicle* of the 21st ult.; then we are told that a contest for pre-eminence lies chiefly between the "American and the English exhibitors," and that it speaks well for the persistence of our native cultivators that they can hold their own against their Transatlantic rivals. But mark this: "The artful coercion of Nature practised by the husbandman from time immemorial is not now the only device adopted through the stress of competition. Grafting, it seems, is now being followed by the "newer" expedient of "pollination," all of which is said to be due to Mr. Darwin. What say you to that you Fenns, Clarkes, Patersons, and others? Then comes the passage I noted previously from the *Times*, but somewhat dressed in the fashion of the *Telegraph* leader, and the story of the Regent and the Fluke is retold. After this need it be said that in matters horticultural the cobbler of the daily press should stick to his last?

Somewhat nearer the mark, still not devoid of a humorous aspect, were the remarks made upon the advance in the Potato by some of the speakers at the luncheon, which so fitly followed the judging. One gentleman propounded the theory that just as you produced refinement in the tuber by filling up its eyes, beautifying its form, and reducing its bulk from moderate size to suitable table development, so also did the tuber manifest greater weight in comparison with the big coarse kinds—that is to say, a medium-sized smooth Rector of Woodstock would weigh as heavily as a deep-eyed kind of coarser texture, even though somewhat larger. That this is correct there can be little doubt, as the improved weight is obtained not so much by the mere filling up of the eyes as in the elimination of water in the composition of the tuber and the introduction of more starch. This is a point which the admirers of the big coarse deep-eyed sorts lose sight of, as it has been proved over and over again, not only in relation to the Potato but also in reference to all roots, that increase in bulk means a less percentage of nutriment and an increase of water, whilst in smaller roots the result is exactly the converse.

The Chairman created some amusement when, jumping too hastily to a conclusion, he pronounced at once in accepting the above theory in favour of "chats" as presenting the most concentrated form of Potato food. This was, of course, somewhat burlesquing a honest theory; but even in relation to "chats," which are somewhat contemptuously spoken of, it is an undoubted fact that these, even when cooked in bulk in a copper, excel all big Potatos in the qualities of delicacy and flavour. It will thus be seen that outside of the discussion connected with the disease, which has from time to time evoked the writing of more nonsense perhaps than any other horticultural topic, it is possible to write and talk some nonsense about the tuber itself; still all this discussion and notice shows how potent a factor the Potato has become, not only in a horticultural sense but also as an element of food.

The committee, and especially the promoters of the International Potato Show, may well be proud of the results that have followed from their efforts to popularise the tuber, when leading journals, both in the daily and gardening papers, devote leading articles to the exhibition and to the esculent. This ought to encourage the promoters to labour on with energy, and strive even yet to accomplish more than has been done in the past. That so far nothing has been done to gather up from exhibitors and growers the results of all their labours and experiences is to be deplored. The gathering together from all parts of the kingdom of the most successful Potato cultivators might be taken advantage of, and be utilised for some more efficient object than the mere staging of their best tubers and the taking of them away again. It is impossible to say what valuable hints or experiences many of these men may be able to give—it is impossible to say how anxious some may be to learn from others if the chance were offered; but so far nothing has been done. Having gone on well so far, has not the time arrived when something higher and more valuable might be accomplished? *A. D.*

A HOLIDAY IN CARDIGANSHIRE.

(*Concluded from p.* 309.)

THE Lampeter meeting being virtually over, the Rev. Charles Chidlow, the Rev. D. R. Thomas, and the writer of these lines determined to spend a few days on an exploring expedition on the mountains by themselves. The opportunity for executing this project was entirely due to Mr. Chidlow, who knew the ground and offered every hospitality to his two companions. The points chosen for exploration on Saturday, August 24, were Bryn-mawr, Esgair-Fraith, Craig-pillbo, Craig-twrch, &c., situated some ten or twelve miles east of Lampeter. These places are reached by the steep and often rugged old Roman road named Sarn Helen; the roadway is even now as perfect in many places, with large slabs of stone, as when first made. The mountains, and even the mountain-tops, are everywhere boggy. Growing in these bogs of peat the Cotton Sedge, Eriophorum vaginatum, is abundant; as are Narthecium ossifragum, Viola palustris, and many other bog plants. The peat is everywhere covered with fungi. The rare Agaricus oniscus is abundant, and different species of the subgenus Omphalaria are common; indeed the species of this subgenus seems to abound on the peat in the most extraordinary manner. Deep in the peat itself are branches and roots of Birch and Oak, often of great size, showing that these mountains were in past ages well wooded. The principal Heath is Erica Tetralix, whilst Pinguicula vulgaris grows in every wet place, principally amongst the stones, and the Corn Marigold in the cultivated patches.

The hills, of course, are marked on the Ordnance map, as are many of the cairns in this district, but on making a careful examination of the first place reached about Craig-pillbo, it became manifest that we were on the ruins of an ancient British town of great size. Ruinous hut-circles were dotted over the mountain sides (generally in groups) in scores if not hundreds. Cairns (often more or less thrown down) were met with in many new positions, whilst kist-vaens (ancient graves of stone) were seen in plenty. At one position there was a huge overturned cromlech, with a prostrate capstone 10 feet long. In many places the grassy surface had been disturbed, and although all these places were searched over, as well as all parts of the hills traversed, yet they did not produce a single worked instrument of stone, or a single flake of stone struck off by man. Many of the kists, cairns, and stone-huts had been demolished for making walls; for this purpose many hundreds, if not thousands of loads of stone had been taken from these prehistoric structures. A rustic told us that a skull had been found amongst some of the stones. Nine structures were carefully examined, measured, and drawn, and it was decided to visit the place again on the following Monday. Before quitting the mountain the fungological member of the party had the misfortune to get up to his knees in one of the peat-bogs, but some comfort may be secured in all our trials if we only look at things aright. We thought of one of the general secretaries who a short time previously had got up to his neck in a similar bog, and who had to wait in the bog till ropes and a horse were fetched for his extrication. After the secretary had been drawn out he had to be scraped.

Sunday, August 25, was spent in a quiet way, in first listening to a Welsh sermon, and then noting the objects near the vicarage at Caio, close to which building there was growing a fine edible Giant Puff-ball (Lycoperdon giganteum). Noticed how badly the larger fruit trees grew on the stony soil, and how well the Potatos looked in the kitchen garden and on the table. Found the Potatos to be Sutton's Magnum Bonum, and heard that they had been grown in the kitchen garden for three years in succession without the production of one bad tuber. Noticed—as I had often noticed before—that all the Convolvuli open in the dusk of evening; they are night-blooming plants, as is Batatas paniculata, figured in a recent number of the *Gardeners' Chronicle* (p. 341). Noticed for the first time that in exposed positions the house-martin builds two lateral bracket-like supports to hold the nest of mud firmly up against the eaves; in some instances the supports are almost invisible, in others they are large and distinct, one on each side. Sedum Rhodiola is a very common plant in the hedges about Caio, where it grows in company with Oxalis Acetosella.

When Monday, August 26, arrived, the two *reverend* archæologists dressed themselves in old clothes in readiness for rough work; the secretary, nothing daunted by his previous mishap, had a patch of alarming size and foreign colour and material on the back of his coat. The Roman road, and at length the mountain side by Carn-Esgair-Fraith were reached, and then all three, aided by three hired assistants, set to work in earnest. No Government or British Association grant was forthcoming, or indeed had any permission been asked for excavation; but if the commoners are allowed to cut and carry off peat without permission, why should not uncommoners open a cairn? After sketching was over the clergymen used the crowbar and shovel, whilst your artist, after gathering specimens of Lycopodium clavatum, laid aside his pencil and lustily plied the plebeian pickaxe. The first place experimented upon was an immense ditched tumulus, 60 feet in diameter from centre to centre of ditch. Upon the tumulus is a truly gigantic prostrate stone of quartz conglomerate, 17 feet 6 inches long and 4 feet 6 inches square; it is termed the Carreg-y-bwgi—the Bogey or Goblin Stone. One piece has been blasted off with gunpowder, and a neighbouring farmer, in a fit of unparalleled liberality, has offered 5*s.* to any one who will split the stone into pieces. An excavation of considerable size was made in the mound, which disclosed a series of stones radiating from the centre. Under 12 inches of mould there were 12 inches of red clay, with fragments of burnt wood, and under this a stratum of grey marly clay brought from a distance: the lower bed of fine clay was no doubt the bed upon which the bodies of the dead chieftains were laid, but every trace of the bodies had vanished, and no pottery, worked stones, flakes, or objects of human manufacture whatever, were found. We were told by our three assistants that if we disturbed the mounds and cairns we should be overtaken by fearful storms, and, as if to prove the truth of this common belief in Wales, we were directly afterwards overtaken by a drenching storm of rain and driving wind. Mr. Chidlow unwisely refreshed the assistants with claret, and it had a bad effect, for it made the men suspicious: they had not tasted claret before, and they took it for some Mephistophelean compound better avoided than drunk, and over which they made grimaces horrible to behold. After the tumulus, four kist-vaens, under what had once been cairns, were carefully opened: with the assistance of the pickaxe, the crowbar, and the shovel, the covering stones were removed, and the stone chambers which once enclosed the dead exposed. One was a double kist for two interments: the chambers were about 3 feet by 2 feet, and 1 foot 6 inches deep, this gave sufficient room for the dead body as the bodies were

nearly always buried on their sides, with one hand under the face, and the knees drawn up to the chin. In every instance the bed of fine clay was found, but in no instance was there the slightest trace of the body or of any manufactured object. The nature of the soil, and the constant heavy rains passing over these hills, would be more than sufficient to destroy every trace of a body laid in the grave so many centuries back. A writer in the *Athenæum* last year denied that there were any grounds for placing a very high antiquity, *i.e.*, more than say about 2000 years, on some of these structures in Wales, especially in North Wales; but there are reasons, in the extreme rudeness of the structures, in the almost total absence of worked stones and instruments about the positions, and there is a philological reason in the name by which the hut circles are known, viz., Cyttiau Gwyddelod. This term to some thinkers indicates the presence on these positions of a pre-Celtic race, as the words mean the huts or styes of the Gaels or foreigners, and not of the forefathers of the Celts themselves. By the time the kist sand huts had been examined the whole mountain was enveloped in clouds, and such a terrific Woolhopean downfall of rain and driving wind had rarely been expended on the most weather-beaten of the three men, who now returned to a somewhat late dinner at Caio at 9.30 P.M.

It had been arranged to visit Traws-nant and Brynglas on the following day, but Mr. Chidlow's horse was so tired that it was decided to make the next mountain day Wednesday instead of Tuesday, especially as Mr. J. M. Davies of Ffroodvale had asked the three resurrectionists to dinner on the Tuesday. A visit was therefore made to the ruins of Talley Abbey (Tal-y-llychau), the old bell of which is now in Exeter Cathedral. Near the Abbey there are some truly magnificent Ash trees; one of these, which is known to be 150 years old, measures more than 30 feet in circumference at 4 feet from the ground. A few years ago several hundreds of human skeletons were dug out of the ground close to the tower of the Abbey. Amongst plants growing amid the ruins may be mentioned the Elder and Gooseberry, the Hemlock, Chelidonium majus, and Cotyledon Umbilicus. A visit was also made to Llansawel and its Fern-clad church, with its Norman font, its two built up squinches, and its curious seat in the south wall. During the drive to this place many species of fungi were observed, and especially a magnificent group of Boletus Satanas (fig. 76) in a hedge. This fungus appears to be a rare plant, the writer can only remember finding it once before, and then near Winchester. It seems to be a good and well-marked species, with blood-red tubes and a livid-white top. On being touched it immediately changes to red, then blue. It is said to be a dangerous plant, as its name indicates, but snails appear to eat it with a relish. B. purpureus, B. luridus, and B.



Fig. 76.—Boletus Satanas, showing change of colour when touched.

erythropus were found during the same drive. We were very kindly received in the evening at Ffroodvale by Mr. and Mrs. Davies. The latter, not knowing she was in *the presence*, said the Cambrian archæologists had geological, philological, entomological, botanical, "generalological," and even a fungological man amongst them; she thought the specialities of the first pleasant enough, but as for the fungologist—at this moment the fungologist was introduced! The party got back to Caio rather late; the night was as black as pitch, the roads stony, in some places rivery, and glowworms sparkled in the hedge sides.

Wednesday, August 28, was the last day of real hard work, and then the Rev. J. A. Williams, of Llansawel, joined the party (on horseback). This party consisted of the Rev. D. R. Thomas, the Rev. C. Chidlow, the writer, and at length a learned blacksmith to show the way. A stoppage was made at Aber-brandду to examine a gigantic old Yew, now preyed upon by Polyporus sulfureus, and to inquire after an old stone not then to be found. From this



Fig. 77.—"Carnivorous plants" on side of wet rock.

place the unfrequented road became uncommonly bad, and the carriage was put up at the farm. The mountain scenery, with its torrents of water, is here grand in the extreme; a ledge of Roman age leading to Dolo-Cothy is cut on the rocks to the right, and the heights are here and there impressively dotted with cairns belonging to the stone age. Not far from Aber-braddu there is a deep and dangerous gorge and echoing waterfall. The lowest depth of this unsafe and echoing place is known as the "Bottomless Pit," and into the lowest level of this place the three clergymen descended; the fungologist keeping on the heights, having little interest in any infernal matters beyond Boletus Satanas. The Bottomless Pit produced Chrysosplenium oppositifolium and some different Jungermannieæ. The road from here to Traw-nant is of the most complicated and contrary nature—often steep and stony, and then so wet and boggy that it is only by a special providence that the traveller does not get up to his middle in slush. The streams sometimes flow down the roads as their natural bed. The scattered farmers use vehicles of the sledge sort, without wheels, for greater convenience in ascending and descending the hills. Various cairns were visited, sketched, and measured; one was oval, 45 by 36 feet—one was covered with earth, and a third had been demolished to build the walls of a farmhouse. At our nearest point to Traws-nant there was a magnificent crop of the edible and delicious Agaricus rachodes growing on the rotten thatched roof of an old stable. Near here a most interesting relic of very ancient ploughing was seen on the top of the mountainous hill named Brynglas (fig. 78); no habitations are now near the place, and it can only be reached with difficulty: the ancient furrows are not regular and parallel, they come to a point on one side of the hill summit. The object of the visit was to reach a kist-vaen on Traws-nant, and for this purpose the pick, the shovel, and the crow-bar were again brought into service; the result was the same as in the other instances, the last bed of fine clay was easily laid bare, but no relics of or belonging to the late occupant were to be seen. During the whole time of the visit to the Lampeter district not the slightest trace of a stone instrument, flake, spall, nucleus, or waster could be lighted upon. It was dusk when the party prepared to return, and then it was found that one of the clergymen had lost the artist's coat: a quest on horseback was instituted, and fortunately the missing garment was recovered. All the party took equestrian exercise on these mountainous boggy hills. The Bog-bean, Menyanthes trifoliata, grows here in abundance, together with Narthecium ossifragum, Pinguicula vulgaris and Drosera rotundifolia. Pinguicula is everywhere, not only in the bogs, but on the perpendicular sides of wet rocks (see fig. 77), and commonly in the middle of the damp rocky roads and paths; though carnivorous in its propensities it appears to suffer no inconvenience from a deficiency of flies on these mid-Wales hills. Drosera rotundifolia, a notorious meat-eater, is evidently in a similar position, for after a searching examination of a large number of plants a few midges only could be discovered upon the leaves. Neither Drosera nor Pinguicula seemed the worse for their enforced fast—the stems produced fifteen flowers in a row; many plants threw up two stems, and these often branched—just, in fact, as if some *savant* had been covertly feeding them with chopped up beef-steak. Out of many hundreds of Pinguicula plants examined on the Welsh mountains in this district none were seen with insects on the leaves—perhaps the feeding season had gone by. As we descended the hills we could hardly see the yellow of the Gorse and the purple of the Heather, and when we reached Aber-brandda Egyptian darkness had fallen over the country. There was a surprise for us here, for the farmer's wife told us the inscribed stone had been discovered in an adjoining yard: so, stumbling over logs and stones and agricultural implements, we were led through the darkness and wet air to see the stone by lantern-light. Only Rembrandt could do justice to such a picture. A prostrate stone was found covered with lichens, earwigs, sowbugs, beetles, snails, and slugs, but no amount of rubbing, scratching, and turning over could make clear an inscription big or little, so the stone was left again to the insects and mollusca.

On driving home in the darkness one could not but call to mind the great kindness and consideration shown to the archæologists in the Lampeter district, not only by the well-to-do, whose motto always is (or should be) *noblesse oblige*, but also from the poorest of the poor who had little to give. More than once the sketchers and diggers were so famished with hunger and thirst that anything in the form of bread

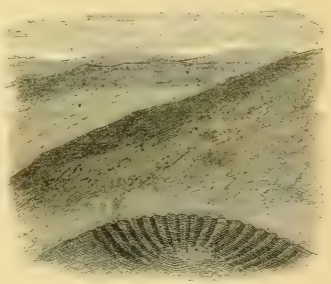


Fig. 78.—Remains of ancient ploughing on Bryn-glas.

and drink was most welcome. In the poorest hill-side cottages bread and butter and milk were generously given to four or five hungry men, and no gratuity was looked for. It was sometimes only possible to hurriedly place some coins in the hand of a child and gallop off. The London hucksters and their coarse sons and stupid wives and daughters have not yet contaminated the district. May it be long before they reach the hilly and boggy places north, east, south and west of Lampeter.

Dinner was late on Wednesday—we did not sit

down till 10.45 P.M. This was enough to try the temper of even a Welsh cook. After dinner the writer was bound to go to the village of Caio by himself. It was more than dark. He took the fields, where brooks, ditches, and slippery banks abound. At length, getting into the middle of a large field of muy a'tes and muy pitfalls, he "found himself lost" as an Irishman would say. He soon found himself in a brook, and then in a hedge, and then on his back down a slippery bank. After some hours of this amusement in the utter darkness, he at length found a gate, and only in the early hours of the morning discovered his bed-room. *W. G. Smith.*

NOTES FROM A LANCASHIRE GARDEN.

Sept. 27. The "great September gales," as Longfellow calls them, have come down upon us with unusual violence, and the year of the garden is almost at an end. The trees here do not turn russet and red and orange as in more favoured places, but the leaves shrivel up as if a hot blast had breathed upon them, and become brown and perish and fall away. The flowers on the borders look untidy and ragged. The Apples do not wait to be pulled but tumble of their own accord. Everything speaks of the coming winter.

It is time then to garner up the memories of the year. Our spring was cold and ungenial, and, except indeed the Rhododendrons, the flowering shrubs all did badly. The Desfontainea, which flowered twice last year, has not given us a single blossom. The Lilacs, the Laburnums, the Thorns, even the Brooms, were less good than usual. The little Rhodora, hardly "rival of the Rose" though Emerson so calls it, gave us some few blooms, and the Azaleas were very fair; but, on the whole, our shrubberies contrasted sadly with last year's glorious display.

Our spring annuals were also a failure, but we had some lovely beds of Myosotis, and indeed it has so taken possession of a corner of the garden that it threatens to become a weed with us, and I shall be able to supply half the neighbourhood with plants.

Like everybody else we had some very hot weather in the early summer, and that, following on the chilly rainy spring, seemed rather to be injurious than serviceable. Nor have I ever known more garden pests than there have been this year. The caterpillars took early possession of the Currant trees, and I had to employ a boy, morning after morning, to pick them off by hundreds, and now, strangely enough, a second brood has made its appearance, and though it is too late for them to do me real harm, it is hardly pleasant to see the bare twigs of Gooseberry and Currant, with every leaf stripped off. Then the slugs were troublesome;—Sweet Peas disappeared, Mignonette wouldn't come up, a row of Linum was a failure, and young Vegetable Marrows vanished. Birds of course did their share of mischief, as they always do in my garden, for they know I do not like to shoot them, but two live cats and a terrible creature made of tin with a bell to it, have, I am thankful to say, had some effect. Then a mole was at work, heaving up little hillocks in all sorts of uncomfortable places, and he had to be suppressed. Then came the wasps, who committed fearful havoc upon the few Apricots that I had,—and worst of all has been the green-fly: one Peach tree in my new Peach-house was so infested by them and by ants that I resolved to get rid of it altogether. It was pretty clear to me that an ant's nest was at the roots, and that the aphis had been (as Sir John Lubbock tells me) kept down below,—"stabled" for the winter, and brought up again in summer. There was nothing for it but literally to *eradicate* the mischief. So up came the Peach tree, and then we dug deep down below, pouring boiling water with lime and sulphur upon the nest, and I trust we may now hope for success with the new Peach tree, which I plant this autumn. In the vineries too we have had trouble with mildew and red-spider both, and the Grapes in our second house have been absolutely destroyed.

On the other hand we have had some successes. Our forced Strawberries were good, and our outdoor Strawberries were simply excellent. Gooseberries, which failed with our neighbours, were abundant, and Cherries, which we never manage well, were far better than usual. We never had such a crop of Plums, or Pears, and not often a better crop of Apples. Forced Figs did capitally, but the outdoor Figs hardly so well as usual. Melons failed; they were very fine and large, but they cracked, and became sour and uneatable. Peaches and Nectarines, both out-of-doors and under glass, have also failed, and, as I have already said, our Apricots were few in numbers, and were devoured—not by us.

Certainly one of the prettiest sights in a garden is when the fruit trees are in bloom. I remarked them this year as I never did before, and was struck with the variety of blossom on the Pear. On the whole it seemed to me that the Jargonelle blossom was the handsomest in size and shape and in the appearance of the cluster. The Winter Nelis, and even the Marie Louise, are very inferior; and as the three trees were growing side by side I could easily compare them.

There is also a marked difference in the various Cherry blossoms, and I noticed, what I have never seen mentioned, that in the May Duke Cherry the pistil is so much longer than the stamens that it cannot fertilise itself, and *must* be dependent upon insects. This is not the case with other varieties of Cherries, so far as I can see, and certainly my May Duke is always a very poor bearer. I was so impressed with this that I have for the first time got a beehive and placed it not far off, and shall be curious to see if there is any good result next year.

Another little discovery which I have made, and, oddly enough, just before a controversy on the subject in your columns, was in reference to galvanised wire. I had had some placed all round my house two years ago for the creepers, and since then they have never done any good. The Escallonia showed bare branches in many places, the Magnolia never flowered, the Ceanothus looked shrunken and brown, and though a Clematis seemed unaffected, a Rose was obviously unhappy. I never dreamed that the galvanised wire was to blame, and put it down, now to lead-droppings from a gutter, now to the east wind, now to an early frost. It was my gardener who suggested the galvanised wire. I had it all taken down, painted, and put up again, and all the Creepers at once seemed to start into fresh life and vigour, and are now growing rapidly.

Our bedding-out this year has somewhat varied from that of former years, but many of the main features are the same. I cannot improve upon them. What can be finer than that bed of Lilium auratum, (each spike with eight, or ten, or twelve blossoms), carpeted with Heliotrope? Or what more effective than those azure clusters of Agapanthus, among the brilliant red of the Lobelia cardinalis? or than this group of scarlet Gladiolus piercing a way through a cushion of the little blue Lobelia? A bed of hybrid Begonias also mixed with blue Lobelia has done well; and, better still, a bed of many-coloured Phlox Drummondii.

However, the bed of all others of which I have felt proud has been one of Canna indica. It never did so well with me before, throwing out grand broad leaves and spikes of crimson and yellow blossom. It is now seeding, and I really believe the seed will ripen. Why is not the Canna far more common in all our gardens? At present one sees it in great parks, and where gardening on a large scale is carried on, but in smaller gardens it is very rare, and yet it is easy enough to grow, and once I think it must have been more known than it is at present. Gerarde speaks of it as "the flowering reed," and gives a very fair illustration of it; he adds, however:—"Myself have planted it in my garden divers times, but it never came to flowering or seeding, for that it is very impatient to endure the injury of our colde climate." Cowley, too, speaks of the "lustre of the Indian flowering reed," and Dr. Darwin, in his *Loves of the Plants*, tells how—

> "The tall Canna lifts his curled brow
> Erect to heaven."

adding in prose that, "The seeds are used as shot by the Indians, and are strung for prayer-beads in some Catholic countries." A long row of Sweet Peas has also been good, and so have the Rose borders, and so a little trellis covered with the large Convolvulus, "Morning Glories," as they are often called,—and this reminds me of a curious name for the Pansy which I heard the other day for the first time from an American gentleman who visited this Lancashire garden of mine. "We always call them *Johnny-jump-ups*." Was this ever an English name? But on the other hand our annuals have done badly, Zinnias were scanty indeed, Petunias were poor, and many things never came up at all.

I have still to speak of my Magnolia grandiflora, of which one has given me ten, and the other five, of that most magnificent and richly scented of all blossoms. The Indian corn, of which I always have a row, and which generally ripens with me, has interested me very much. I have tried three varieties. One, I believe, is Bulgarian; the stems are tall and strong, and the cobs are extremely fine. The second is Australian, rather taller, but with the corn hardly so well developed. The third was given to me as "Giant Peruvian" seed, and a giant it is. One stem has shot up to a height of 11 feet 6 inches, and measures 6 inches round, but I think it was planted later than the rest, and I have no hope of its ripening its corn this year.

And now for this year I close my notes from the garden, which some, at least, of your readers must feel they know hardly less well than I do. *H.*

Garden Operations.

KITCHEN GARDEN.

The root crops in this department which will require to be lifted shortly, comprise Beet, Carrots, Salsify, Scorzonera and Parsnips. Amongst these Beet is very tender and soon susceptible of injury from the effects of frost; these roots should therefore be taken up very carefully so as not to cause them to bleed and be stored away before frost comes upon us severely. An increasing taste for Salads has necessarily augmented considerably the cultivation of this edible, so much so that a supply of it is generally required throughout the whole year. Remember that colour and plumpness combined are the qualities most needed; see therefore that a suitable situation is provided for its reception when it is lifted. We select for this purpose the northern side of an angle which is formed by south and east walls running transversely, and take out the soil from 2 to 3 feet deep, and 5 or 6 feet wide, as far as will be necessary, and the roots are stacked closely together, leaving a way in the centre to get to them when required; after this they are covered with straw, and some boards or shutters laid over them to prevent rain and snow penetrating. Under such conditions the roots will keep perfectly sound, and may be had all the year round if necessary. Carrots should also be taken up when the leaves indicate that the roots are developed and matured. Early sown ones will be fit for the operation almost immediately, but late ones may be left in the ground still longer. The practice of cutting off the tops of these closely when they are lifted should be avoided, as under such circumstances decomposition is encouraged and they will not keep satisfactorily for a long period. We leave at least 4 to 6 inches above the crown, and find it to be highly beneficial for this end. Whenever the roots are lifted, under any circumstances they should be fully exposed so that they may become dry before being put into stacks together. When this is done be cautious in the matter, as when too many are placed together fermentation will sometimes ensue, and under such conditions decomposition will likewise speedily follow. Both Salsify and Scorzonera are roots that will keep well almost under any circumstances, so that the place is cool. These should also be placed in stacks similar to Carrots, and have a little sand or soil mingled with them. Parsnips being considerably hardier than any of the foregoing subjects can, if desirable, be left out nearly the whole of the season, at least as long as growth does not proceed. This plan is commendable in poor soils on upland places, but not so in soil wherein manure abounds, or in moist positions, and therefore they had better be taken up by-and-by, and stacked as before advised for other roots. Continue, as before advised, to persevere in the destruction of weeds, and keep the surrounding surface about the newly-made plantations of Lettuce, Endive, Cabbage, Onions, be occasionally stirred. Frequent dustings of ashes, with a little slacked lime added, will also be required to abate in some degree the attacks of slugs, &c. The sowings of Lettuce, Endive, &c., which were made on August 24 last, will by this time have formed plants fit to be transplanted; as these will form a staple and important crop next spring, they should have good places where the soil is highly enriched and pliable; the spaces between where the early crop of Peas are to be planted will be suitable for them. We put the rows of Peas 6 feet apart, and between these have five rows of early Lettuce, the centre three rows of Black-seeded Brown Cos, and the other Stanstead Winter Cabbage Lettuce. When these plantings are completed prick out into beds for spring planting as many as will be necessary, taking care to provide sufficient plants to cope with the destructive agencies of frost and moisture, and do likewise in the case of Cabbage plants. Asparagus stems are already indicating a ripening off; let these be cut off and cleared away before the seeds fall, to avoid the trouble which would be given next season in eradicating self-sown plants. Lose no favourable opportunity to hoe up for blanching a good quantity of Endive and Lettuce, and make preparations for the reception

of a good stock of these subjects for the early winter supply; as Lettuce is much more tender than Endive, give the former a place where frost cannot injure it: pits having a 2-inch pipe in them are suitable places for these. In the frame ground let all tender subjects be well ventilated and kept as dry as possible, and be prepared for any emergency which may arise to necessitate covering up. Let all the fruits of Tomatos, Capsicums and Chilies be gathered as soon as they begin to ripen, and those which have not attained such a condition should also be got in if frost be likely to ensue. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

Excepting very late ripening Pears, such as Easter Beurré, Joséphine de Malines, Bergamot Esperen, Beurré Rance, and others of that class, most kinds will now be fit to gather, in doing which it is of the greatest importance that they be handled tenderly, as otherwise they are sure to get bruised, and the slightest abrasion or injury soon brings on decay. In storing there is no place answers better than a dry airy room or loft, where the temperature can be kept low and equable, and where frost can be excluded without having recourse to fire-heat. A thatched roof aids these conditions best, as, being of a non-conducting nature, external changes do not act on it in the way they do on tiles, slates, and such-like materials that are more generally used for the purpose. Besides being such an excellent non-conductor, straw or reed absorbs moisture much better than plaster, and is therefore altogether more preferable as a covering to fruit-rooms, for damp and a variation of temperature are the two chief things to be guarded against. It is the practice with many to use straw for laying their Apples and Pears on, or for putting over the same, but however sweet and clean it may be it invariably imparts an unpleasant flavour, and is one of the first things to engender mould or fungus. Shelves made by nailing thick narrow strips of board with just the sharp edge taken off and placed within half an inch of each other, so as to let air pass between, are much the best for keeping fruit, and on these it should be laid singly and without a particle of covering of any kind. Arranged in this way it is an easy matter to look over it daily, and take out any for immediate use that show symptoms of decay, for although Pears may not be ripe enough for dessert all come in well for stewing, thus saving waste.

The season has now arrived when it is time to be thinking about making preparations for planting young trees, and to take in hand the renovation of such as are old and in an unsatisfactory condition, or any which are gross and unfruitful from making too much growth, the remedy for which is judicious root-pruning. This will be found an effectual measure to take, and is far more satisfactory than transplanting, especially in the case of large trees, one side of which can be operated on now, and the other a year hence, thus affording them a chance to make fresh fibres, and so obviating too great a check at one time. Root-pruning, however, is only necessary in strong rich soils, or in such as are wet and undrained, as a proper stopping back of the vigorous shoots during the summer forces them to form spurs at their base. No amount of autumn or winter pruning will do this, and it is useless therefore to attack the tops, as the removal of one strong piece of wood is only the prelude to the formation of several others at some other part of the tree. In the case of such as have become decrepid through over-bearing, or other causes, fresh soil is the remedy, and it is surprising what a change this will make in a short time, if applied early, while the foliage remains on to aid the formation of feeders. In carrying out work of this kind it should be borne in mind that the principal roots are deep-seated, and that mere surface dressings are of no value, as any fresh soil placed there cannot be made use of. The top foot or so should therefore be carefully removed, and from 6 to 9 inches of good stiff turfy loam worked in in its place, and on this sufficient of that which had been previously dug out, to bring the ground again to its original level. Trees thus treated soon send out quantities of fresh fibres, and in a year or two become quite rejuvenated, especially if in addition to the new loam they receive a good mulching of rotten manure. Numbers of cultivated fruit trees are starved from want of this, or sewage in lieu of it. *J. Sheppard, Wolverstone.*

FRUIT HOUSES.

Pines.—In the case of all young growing stock in this department it will be essential at this period of the year to embrace every opportunity which may happen to be suitable for well ventilating these plants, so that any existing tenderness in growth may be somewhat hardened prior to the advent of dark and sunless days; and for this object it will likewise be necessary to keep the glass clean and free from any impediment which may prevent the rays of sunshine penetrating to the plants. Let the temperature, as indicated in the foregoing Calendar upon this subject be still continued at 57° as a minimum at night, and from 70° to 80° daily, with 80° at the roots continuously, and as daylight and sunshine decrease in force proportionately reduce the amount of moisture in the pits, &c. Large and arid houses are most unsuitable places for these plants, and therefore the above conditions will be more applicable to such places as those named; in the other case scarcely too much moisture can be had for such plants.

Plants which have already made a good growth and require to be kept gently moving preparatory to their being re-started into fruit, should also have the full benefit of sunshine now. See, therefore, that such plants, if at a distance from the glass, be brought up, so that its effects may be operative. In the fruiting department let water be plentifully thrown about, and every means be employed to encourage growth in the fruit. The temperature here at night should range from 70° to 75°, and from 80° to 90° during the day-time; ventilate slightly at 85°, and close up the house at this point if sunshine is declining. Water liberally whenever necessary with tepid water, to which should be added a dash of guano, or some other stimulating agent. This matter should be seen to regularly about once a week. *G. T. Miles, Wycombe Abbey.*

Peaches and Nectarines. — The numerous failures in unfavourable situations having again proved the uncertainty of the crop on open walls, the loss of time, and in many cases the destruction of the trees, go far to show the necessity for providing some kind of glass shelter for ensuring a good supply of fruit annually. Where a good return is the first consideration, houses of the plainest description well glazed and ventilated can always be depended upon for giving full crops of Peaches and Nectarines of the finest quality, and under judicious management they may be kept quite as late as fruit on open walls. The principal points in the management of trees in these structures are few and simple. To ensure thoroughly ripened wood biennial lifting or root-pruning should be adopted, and the compost—strong calcareous loam, with a liberal admixture of old lime rubble resting on ample drainage—will produce clean healthy short-jointed growths thickly set with triple buds. Fan-training on a trellis 12 inches from the glass answers best, as fruit and wood then get the full benefit of warmth and light. The trees should be rather severely disbudded in the spring, pruned as soon as the last Peach is gathered, and kept dry and warm until the foliage is ripe, when the ventilators may be thrown wide open for the winter. As spring advances the blossoms should be retarded as much as possible, to keep them safe from spring frosts, and when ready artificial fertilisation will ensure the quantity and increase the weight and quality of the fruit. In large gardens, where these houses succeed others that have been forced, good midseason and late varieties, such as Bellegarde, Barrington, and Walburton Peaches, Pitmaston, Elruge, Albert Victor, and Stanwick Elruge Nectarines will be found suitable. In smaller gardens the season may be lengthened by the introduction of one or two good early kinds. From a lean-to house, unheated, treated as above, I have this day (September 25) gathered the last of a heavy crop of fruit, many of the Peaches weighing upwards of ten ounces each. The early house from which Peaches are usually gathered about the end of May, will now be ready for pruning, cleansing, and tying-in. The wood should be carefully washed with strong soap and water, and when quite dry any composition in favour with the cultivator may be laid on with a painter's brush. For my trees I use Gishurst Compound, twelve ounces to the gallon of water, to which a little strong loam and soot is added for the purpose of giving substance to the dressing. Get all root-pruning and top-dressing finished without delay, and where large trees have to be taken in from open walls the ripening of the wood may be facilitated by digging and leaving open a trench a few feet from the stems. Meantime the stations should be got ready for their reception, and the trellisses well washed and painted. Trees that were properly prepared by root-pruning last autumn may be lifted at once, and if carefully tended with shade and moisture until the leaves fall they may be forced with the other trees with most satisfactory results. *W. Coleman, Eastnor Castle.*

Melons.—Plants swelling their fruits must be pushed on with all possible speed consistent with their treatment, though, as I have stated in my last paper, Melons as a rule are not much worth after September, but of course much depends on the condition of the weather in and during the month of October, as also on the palate of employers. However, they should be pushed on rapidly by shutting them up early, and maintaining a night temperature of from 65° to 70°, and 75° by fire during the day, running up to 90° with sun. The plants should be kept well stopped and the fruits fully exposed to light and sun. Perhaps I may here remark that our latest fruits are growing on plants from which we cut ripe fruit on April 29 last; and, notwithstanding that they have been bearing "on and off" ever since, the foliage is as healthy and as clean as when the first crop was cut. *H. W. Ward, Longford Castle.*

Cucumbers.—The stopping, thinning, and tying of the plants should be regularly attended to, also the removing of superfluous fruit; and any decayed portion of wood or leaf that may appear on the plants should be removed forthwith. Give plenty of tepid liquid manure, in a weak state, to plants in full bearing. Should green or black fly be troublesome, syringe with a weak solution of Gishurst Compound, or fumigate with tobacco-paper a couple of evenings in succession, which will be better and safer than filling the house too full at one time. Syringe the plants thoroughly the succeeding mornings, and ventilate freely, weather permitting. Maintain a night temperature of from 60° to 65°, and 70° to 75° during the day with fire will be sufficient; evening up to 85° with sun. Encourage a short-jointed and consolidated growth of vine, upon which successful and satisfactory results so much depend; to obtain this, ventilate freely on all favourable occasions, and avoid an over-humid atmosphere and too high a temperature. Autumn-planted plants will be the better of having some more soil added to the hillocks, pots, and boxes so soon as the roots appear through the soil, and remove any young fruit that may prematurely show, until the plants have fully established themselves; avoid over-cropping, and in other respects treat them as above recommended. *H. W. Ward.*

PLANT HOUSES.

The housing of all plants should now be pushed on with as much speed as possible. Callas planted out or plunged in open borders should be taken up and housed if required for immediate blooming; they should be placed in an intermediate temperature, and those in small pots should have repeated doses of liquid manure. Solanums should be taken up, potted, and put into a cold pit; syringe repeatedly overhead and keep close until root-action has taken place, then expose more freely. All kinds of Heaths should be put in their winter quarters either in the Heath-house proper or the coldest end of the greenhouse. Look well after mildew, which spreads quickly and soon disfigures the plants. Genistas may also be put at the coldest end, as near the light as possible. Camellias should be taken in, as heavy rains would be detrimental to the plants, and cause them to drop their buds.

If not already done thin out the buds and clean the plants from any trace of vermin or dirt. If flowers are wanted early give them slight heat, but great attention is necessary on this point, for should the plants by any means get overdone with fire-heat they will drop all their buds. In mild weather they would be safe in a temperature of 60°, while that temperature in cold weather would cause them to drop their buds. Do not by any means allow them to get too dry at the roots, for this evil would be attended with the same results.

Azaleas for late flowering, when housed, should have abundance of air and light, except such as are wanted to bloom early, say Christmas and onwards; these should be treated according to the state of their buds. If properly prepared by early growth in spring and pushed on until their buds are well formed, they will require a very little amount of heat now to get them into flower; but, on the other hand, if this matter has been lost sight of, more heat will be required to get them into bloom, and this will be at the expense of the bloom, both as regards size, substance, and keeping qualities. Much fire-heat is also very favourable to the spread of thrips, which should at all times be kept in subjection.

Disbud Chrysanthemums, both as regards bloom-buds and side-shoots; do not allow them to carry more buds than the plants can develope; give frequent waterings with liquid manure or guano-water, and do not house until really necessary. Keep the soil in the pots free from worms. Fuchsia cuttings struck this autumn should have plenty of ventilation, and should not be excited into weak growth. Keep them as near to the glass and light as possible.

Give the necessary protection to Cinerarias and Calceolarias in cold frames or pits. The plants should have plenty of room for the air to get about them, as overcrowding will cause their leaves to rot, much to the detriment of the plants. When foggy or damp weather comes on they should be removed to drier quarters, where they will not suffer from excess of damp. Give abundance of air to Mignonette, to prevent weakly growth; the same applies to Heliotropes. Tuberoses pushing up their spikes for very late blooming should have plenty of top-air, but avoid draughts and sudden changes of temperature. Tea Roses planted in pits should have a little warmth to expel damp and keep down mildew; ventilation should be given from the apex. Sericographis, Justicias, Linums, Poinsettias, Hebecliniums, Libonias, Eupatoriums, and similar winter blooming plants that have filled their pots with roots will be much benefited by frequent waterings with liquid manure or a top-dressing consisting of sheep or deer dung and soot, rubbed through a small sieve. *J. Ollerhead, Wimbledon House, S.W.*

THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 5, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Oct. 7—Sale of Dutch Bulbs, at Stevens' Rooms

WEDNESDAY, Oct. 9—Royal Agricultural and Horticultural Society of Jersey: Fruit Show. Sale of Plants from Ghent, and Dutch Bulbs, at Stevens' Rooms.

THURSDAY, Oct. 10—Sale of Orchids and Tree Ferns, at Stevens' Rooms.

SATURDAY, Oct. 12—Sale of Dutch Bulbs, at Stevens' Rooms.

THE Paris Botanical Congress has come and gone without much progress having been made towards, we will not say the completion, but even the commencement, of the "HORTUS EUROPÆUS." It will be remembered that the idea of this catalogue of cultivated plants originated in Belgium, and that lengthened discussions have taken place in Brussels, in Amsterdam, and elsewhere, as to the best method of preparing such a list. It was hoped that some definite practical result would have been arrived at in Paris. But this was not the case, and we seem as far off as ever from the realisation of the scheme. There is no need to insist upon the desirability of preparing such a work, the difficulty seems to be how best to set about it.

If merely a list of names were required a revised edition of LOUDON'S *Encyclopædia*, with all the requisite additions made, would suffice. But we take it that all who, like ourselves, have to make use of such compilations pretty frequently, have proved by painful experience how slight is the value of that work when compared to the immense labour and cost of preparation. Some supervision and rectification of names is absolutely essential if the list is to possess any permanent value. But supposing the existence of botanists with sufficient general knowledge of cultivated plants, how can they be expected to find the time requisite for so vast a labour as would be involved in this work of rectification? Even where such facilities exist as are available at Kew in the way of specimens, dried and living, of books and of plates, hours sometimes are required for the identification of a single plant. It is true that in other cases it is an affair of minutes only, still when an average is taken the time required to identify a plant and to hunt up the literature referring to it is always considerable. Even when all the available material is gathered together so as to be accessible at once, it is not easy to describe more than five or six plants a day for botanical purposes.

At this rate of progress the formation of a *Hortus Europæus* would be slow indeed. The only way it seems to us would be to employ several botanists at the work under a competent Editor, responsible for the work as a whole, and capable of so controlling details as to ensure uniformity of treatment so far as possible—to work for instance on a plan similar to that followed in the *Flora of British India* and in the colonial Floras prepared at Kew.

Nowhere indeed do greater facilities exist than at Kew for forming a *Hortus Europæus*. The collections of living plants are very large and are daily augmenting. The herbarium is the largest and the best organised in the world—the library, which is also of first-rate importance is in juxtaposition to it. Important as the colonial Floras undoubtedly are a new edition of the *Hortus Kewensis* is not less so. Indeed the number of persons who would be benefited by the *Hortus Kewensis* is much larger than that of those who are likely to profit by a colonial Flora. Still, of course, the colonial Floras are admirable preparations for the task we speak of, and so much material has been by their means accumulated and arranged that to a considerable extent the material for a new *Hortus Kewensis* is already to hand. It must, however, be borne in mind that the point of view of the botanist in drawing up a Flora is somewhat different from that of the framer of a garden catalogue. Details which for the one purpose would be essential would for the other be comparatively unimportant. And this brings us again to the mode in which a *Hortus Europæus* should be constructed. What seems to us to be wanted is, in the first instance, an authoritative catalogue, not a mere compilation of names, meaning in many cases nothing. Each plant, after proper identification, should be entered under its appropriate name, authority for the name should be given, reference should be made to the book in which the original description was made, to the monograph or other work in which the best description of the plant will be found, and to the book in which a correct figure, if any, is to be found. Then should follow the indication of the native country and of the altitude at which the plant is found wild. These latter details would suffice in most instances to indicate in a general way whether the plant was hardy or required greenhouse or stove treatment. Most troublesome of all would be the details of synonymy, but they would have to be encountered or the value of the list would be seriously diminished. Another and most important point would be the question of provisional or "garden names." These, as we all know, are often applied hap-hazard or to serve a mercantile rather than a scientific purpose; and it is therefore a question how they should be treated in such a catalogue as we are contemplating. To ignore them would be to deprive the book of much of its value to those people who want it most. To make them conformable to botanical usage would often be wholly impracticable, and in other cases would, from a horticultural point of view, be undesirable. But this is a portion of the subject too large and too intricate to enter upon at the end of an article. We shall probably revert to it on another occasion. In the meantime, while our friends at the Congresses have been talking, we in this country have been working. In addition to the hosts of scattered notices of cultivated plants in the *Botanical Magazine* and similar publications, and to the eclectic notes on certain genera which have appeared in the *Garden* and others of our contemporaries, we may allude to the numerous contributions to a *Hortus Europæus* made in our columns by Dr. LINDLEY, Professor REICHENBACH, Mr. BAKER, and others.

The following genera have been more or less completely worked up in our columns in this way:—Agave, Ceanothus, Crocus, Escallonia, Funkia, Hæmanthus, Helleborus, Holly (Ilex), Iris, Ligustrum, Lilium, Narcissus, Sempervivum, Sedum, Yucca. Of less systematic but still authoritative and descriptive notices, the list alone would in smallest type occupy a whole number of the *Chronicle*. Truly the compilers of the *Hortus Europæus* would do well to begin before the list gets bigger!

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We learn that at the next election of pensioners, in January, 1879, it is supposed that there will be six or seven vacancies to be filled. All of these will be occupied as a matter of right by those claimants who have acquired the right to the benefits of the Institution by an annual subscription for fifteen years. It is of course quite right that the preference should be given to those who have complied with the requirements of the Institution, but when we learn that there are no less than thirty applicants who have little or no chance of success on this occasion, as they have not yet subscribed long enough to entitle them to the pension, we have said enough to show the advantage of gardeners making provision for the future by a small annual payment now. Should they not require it themselves they will at least have the satisfaction of knowing that they are lending a helping hand to those may who do so. The number of applicants shows the necessity for largely increasing the subscription list, for it is not creditable that there should be so many applicants doomed to disappointment. Gardeners have the matter to a large extent in their own hands. Large dinners and donations from the wealthy and kind-hearted are no doubt important, but the backbone of the Society, if we may so speak, should be constituted by the annual subscriptions of the gardeners of the country. The funds, we have every reason to believe, are carefully administered, and the amount invested is gradually increasing in a very satisfactory way.

—— THE COMMON BAY LAUREL.—Laurus nobilis is in some senses a test shrub, so far as climate is concerned. By the sea it often thrives, whereas inland in the same latitude it perishes or drags on a crippled enfeebled existence. Our present illustration, fig. 79, represents a specimen in the grounds of G. C. HANNAM, Esq., of Ramsgate. It is some 30 feet in height, 120 feet in circumference, and 40 feet through. The Bay seems to vary considerably in the shape of the leaves; in the present instance the leaves were very narrow.

—— SALE OF A DUBLIN SEED BUSINESS.—The interest in Messrs. FERGUS FARRELL & SON'S seed business, carried on at 119 and 120 Capel Street, Dublin, was sold by auction, on September 27, for the sum of £1700. The purchasers were Messrs. WALTER TAIT & Co., the well-known seedsmen of Dublin, who for several years have carried on a large and successful business at 45, Capel Street, immediately opposite their newly-purchased premises. In addition to the interest in the concern, Messrs. TAIT & Co. have also purchased the fixtures, and it is their intention to continue the business as heretofore. The *Gardeners' Record* mentions that the firm of FERGUS FARRELL & SON has been in existence over a century, and that the premises are amongst the largest, best-arranged and most suitable for carrying on the seed trade in the kingdom.

—— LANTANAS AS BEDDING PLANTS.—We are unfortunate on this side of the Channel in having a climate that will not allow of our being able to use the Lantana as a bedding plant so freely as is done in the Paris parks. A few weeks ago some of the most remarkable beds that came under our notice were composed entirely of those soft, yet richly-coloured flowers, and one example especially, a large oval in the Parc Monceaux, well deserved the use of strong adjectives. The centre of the bed was white, then came a broad band of crimson, followed by one of orange-scarlet, with an outer margin of a dwarf mauve-coloured variety. It was one mass of blossom, as level as a well-finished bed of Coleus, and rich in the extreme. The like of this in either of our London parks would run the "Lobster Salads" a rare race for popularity.

—— DOUBLE WHITE PELARGONIUM NYMPH.—This is one of M. LEMOINE'S latest productions, and it is remarkable as being the purest white yet raised. A comparison of its flowers will demonstrate that they are without a trace of the green tint in the centre which disfigures the whites hitherto cultivated. It is something to get purity in the flowers, and it is had, too, in combination with well sized flowers, good breadth and substance in the petals, and a fair habit of growth. The collection of double varieties of the Zonal Pelargonium is still in good condition at Chiswick—Nymph being included in it, and with other newer varieties will well repay an inspection.

—— YELLOW-FLESHED POTATOS.—Why is it such a prejudice exists in the minds of some gardeners against yellow-fleshed Potatos, as if a tinge of yellow in the substance of the tuber is to be associated with an inferior flavour? This question is suggested by the fact that at certain horticultural exhibitions held during the summer we have seen the judges cut the Potatos competing in these classes, and put by all not having a white flesh as undeserving an award. Grave mistakes are committed in this way, and inferior varieties are preferred to good ones, on the assumption that a white flesh is a standard of quality. We have recently been eating one of Mr. FENN'S varieties, Onwards, which possesses a deep yellow flesh, but it is remarkable for high-class quality as a table variety. Others might be named, but one example will suffice.

But judges who make their awards according to colour would pass by a variety like Onwards, and give the preference to the Early Rose, or some other inferior white-fleshed Potato.

—— Amicia Zygomeris.—A half hardy (or perhaps wholly tender) herbaceous or suffruticose Papilionaceous plant of striking appearance and singular structure. Its branches are hairy and hollow, the leaves alternate, remote, and unequally pinnate, 4 to 5 inches long. The stalk rounded, thickened at the base, and hollow like the stem. The leaflets are in two pairs, separated by an internode and with a solitary terminal leaflet. Each is about 3 by 2 inches, with a very short hairy stalk, obovate obcordate, with a central very fine triangular point, glabrous on both surfaces, paler beneath, and studded with a number of fine translucent dots as in an Orange or a Myrtle. The leafy stipules at the base of the leaf form protecting scales for the young bud; they are suborbicular and increase in size for a time, assuming a purplish colour: ultimately they fall off, leaving a scar. The flowers are borne in racemes, the stalks of which are as long or longer than the leaves, and are invested by bracts of the same general character as the stipules. The individual flowers are like those of a Laburnum or other papilionaceous plant, but two of the sepals of the calyx are much larger than the remaining three, and, indeed, show the same characteristics as to form, size, and colour as the stipules and bracts. In this respect they resemble the enlarged lateral sepals of Polygala. The corolla is yellow splashed with purple on the keel, and presents the usual papilionaceous structure. The stamens are very unequal in length and are rolled inwards. The pod is knotted, with a curved style. The plant in this country forms a loose growing somewhat shrubby plant, flowering in autumn, and being a very attractive plant, its beauty being directly proportionate to the singularity of its structure, which is by no means the case with botanical curiosities in general, which demand a botanist's eye to appreciate their charms. The specimen we have lately had the opportunity of examining came from Carclew, but even in that part of Cornwall the plant is too tender to bear much frost, though Mr. Ellacombe, in his wonderful garden at Bitton, does not find it so tender as we have stated.

—— Helenium autumnale.—A remarkably showy autumn-flowering perennial, 4—6 feet high, branching towards the top, so as to form an inversely pyramidal corymb of clear yellow flower-heads, each 2 inches and upwards in diameter. The ray-florets are oblanceolate, and divided at the fine edge by rather deep notches into three rounded lobes. The leaves are sessile, decurrent, lanceolate, remotely saw-toothed, and not so rough to the touch as in most plants of the kind. One of the best hardy perennials, suitable for the back rows of the herbaceous borders, or in front of dark shrubs.

—— The Beurré Lefèvre Pear is not much known amongst us, but it is a popular October variety in some districts in France. The fruit is large, obovate in form, and richly flavoured; the tree hardy and a free bearer. It was raised at Mortefontaine (Oise), and the original tree still exists in vigorous health, in the nursery of MM. Chantrier, where it is most popularly known as the Beurré de Mortefontaine. The Messrs. Chantrier state that it comes very fine on the Quince stock.



Fig. 79.—specimen laurus nobilis. (see p. 436.)

—— Lilium nilgherrense.—The forms of this handsome Lily are various and extremely interesting, as we saw at Mr. Bull's nursery a few days since. What is grown as the typical form has the long funnel-shaped tube widened gradually to the mouth, the segments of the perianth being rather expanded than recurved, and the flowers being of a creamy white. L. nilgherrense flavum is of similar form, but of a deep cream-colour, decidedly more yellow than in the former. L. nilgherrense tubiflorum has the tube much narrower up to the mouth, where it reflexes suddenly, so as to display more of the inner surface; in this form

the base of the tube is stained with reddish brown, and the whole flower often dies away with a tinge of purple. There is also a yellower form of this type—the form of which shows very distinct on the plant—called tubiflorum luteum. It is in any of its forms a most beautiful plant, and remarkable for the freeness with which it produces blossoms.

—— A MONSTROUS PINE-APPLE.—We have received from Mr. J. HART, the gardener at King's House, Jamaica, a photograph of a Pine-apple grown on the Liquanea Plains near Kingston, and which is what is there called the sugar-loaf variety. Its weight was 7 lb. 8 oz. when photographed, and it has seven surrounding heads. Mr. HART states that the variety has before been known to produce a similar specimen. The surrounding heads are placed in the same manner as the gills which usually occupy the same position. The flavour of this variety is very inferior, and is only cultivated in the gardens of the negroes. A monstrosity of a similar kind, but with only four or five fruits, was shown lately at the Crystal Palace.

—— AN INTERESTING HYBRID CONIFER.—In his private garden at Verrières, M. HENRY VILMORIN has, amongst other choice coniferous trees, an interesting and very handsome hybrid Conifer, obtained from a cross between Picea Pinsapo and P. cephalonica. We do not remember at the moment which was the seed-bearing parent, but whichever it may have been, a dozen cones were fertilised. Of these only one "set," and in this there was only one fully developed seed, which gave birth to the plant in question. The specimen, which measures 8 feet in height, and as much in diameter of branches near the ground, is thickly furnished, differs from both its parents in the arrangement of its leaves, and promises to make a distinct and noble looking tree.

—— SCOTTISH HORTICULTURAL ASSOCIATION.—The monthly meeting was held on Tuesday, Oct. 1, at 5, St. Andrew's Square, Edinburgh. The Vice-President, Mr. HUGH FRASER, occupied the chair. Mr. CHARLES TAYLOR read a paper on "The Theory of Fern Reproduction," illustrating his remarks by diagrams. He described the views generally held on this subject, and after tracing the development of spores, concluded by urging the members to give more attention to this question than they had hitherto done, as it opened up a wide field for fresh and important inquiry. Mr. ANDREW KERR continued the subject by another paper, in which he gave his experience in the treatment and culture of Ferns in a very elaborate manner. In the discussion which followed it was stated that Adiantum gracillimum was a sport from Adiantum cuneatum. This was borne out by the personal observation of several of the members present. The following plants and flowers were exhibited :—By Mr. L. DOW, Aralia spinosa, two varieties of Hibiscus, Spiræa Foxii, and Myrtis communis, all in a profusion of flower, growing out-of-doors; by Messrs. DICKSONS & Co., stand of Violas and Cyclamen europæa album; by Mr. A. MCKENNA, four varieties of the autumn Crocus; by Messrs. DOWNIE & LAIRD, a splendid stand of seedling Phloxes of their own raising, and Rhododendrons Duchess of Edinburgh and Princess Royal; by Mr. R. MORRISON, a Fern case, admirably adapted for raising Ferns from spores.

—— CROCUS SPECIOSUS.—This beautiful Crocus is now in fine flower on the rockery at the Chiswick Gardens of the Royal Horticultural Society. It appears to be perfectly at home in a somewhat exposed position high up, nearly to the crest of the rockwork, and there can be seen numerous flowers of large size and beautifully coloured.

> "The last Geraniums still shed
> On manor-lawn a scarlet glow,"

but while the blossoms show signs of harm from cold and mist this Crocus shines out clear and beautiful, with a freshness peculiarly its own. It comes in with, or immediately after, the Colchicums, with fragrant Violets and pretty Primroses bearing it company. There is a handsome purple species in bloom also, planted as C. speciosus, but quite distinct from it; but it is purple, while the blue in the blossoms of C. speciosus realises, to a great extent, our ideal of what a blue Crocus should be. If gardeners could only be induced to plant it much more than they do, they would find it a welcome floral visitant in autumn.

—— PLUMBAGO LARPENTÆ.—Here is another plant that in autumn yields a very cheerful hue or blue in its blossoms. A large clump of it in the hardy border at Chiswick is blooming freely, though probably not so freely as it would were it in a more open and exposed position. The best site for this species is a raised bed, or rockwork, where the plant can receive the full benefit of the sun. In such a place it flowers gloriously, provided, of course, that it is kept sufficiently moist at the roots. Plumbago Larpentæ is one of those fine old things that gardeners are apt to overlook in these later days.

—— MIRABILIS MULTIFLORA.—This is one of the finest hardy herbaceous perennials closely allied to the Marvel of Peru, with fleshy, cordate, ovate-stalked leaves, often oblique, and clusters of lilac flowers enveloped in a large leafy cup. We lately saw a most effective bed of the plant in the garden of Mr. JOAD, at Wimbledon.

—— EARLY AND LATE BLOSSOMS.—"A.," writing to the *Times*, from Sidmouth, Sept. 29, says :—"It is a curious fact that Rhododendrons have been in full bloom in my garden for the last ten days. I have never seen them blossom here before the middle of November, and even that time was considered very early." The Rev. E. LEATON BLENKINSOPP writes from Springthorpe Rectory on Sept. 30 :—"Not only are the Laburnums in my garden in bloom, but a Laurel and a climbing Devoniensis are flowering, Lilacs are bursting their buds, a Plum tree is showing a second crop of Plums, and a Pear tree a second crop of Pears."

—— GOLDEN TREES.—At this season of the year golden-leaved trees are not uncommon among the Maples, the Robinias, the Tulip trees, the Liquidambars, and many others, but these are golden but at this season, while those we have now in view are golden throughout the whole summer. Foremost among these chrysophyllous trees or shrubs we should place the golden Elder, which is always fine; then the golden Catalpa, which is gloriously resplendent, but rather dearer, we imagine, than the more homely Elder. The golden Oak, Q. concordia, does not do well in all places, but the golden Poplar, on the other hand, is pretty sure to please; the contrast between its golden leaves and the red footstalks is striking. At Messrs. PAUL & SON'S, at Cheshunt, the entrance to the nursery is flanked with these Poplars, and very effective they are.

—— SENECIO PULCHER.—We do not see this splendid Groundsel about so freely as might be expected, so we presume that cultivators in general have not found the secret of growing it. In the garden of Mr. JOAD, at Wimbledon, lately, we not only saw the plant in bloom, but also several seedlings raised from the plant. It requires a little shade.

—— A ROCKERY UNDER GLASS.—One of the most interesting houses we have seen lately is one in the garden of Mr. JOAD at Wimbledon; it is simply a rockery under glass, no heating apparatus being employed. The "rockery" was constructed by Mr. PULHAM, and consists of tufa and artificial stone so placed as to leave deep pockets, wherein the plants are placed. In the present instance the plants are many of them of the description known as botanist's pets, comprising many rare and interesting species. A perforated pipe at the top of the house allows of irrigation being practised at will. It is, of course, common to see ferneries so treated, but it is a novelty to see alpines and plants of that character so placed. In other houses in this remarkable garden the plants are planted out in raised beds.

—— FRAXINUS EXCELSIOR VAR. AUCUBIFOLIUS.—This is a remarkable variety of the common Ash, with the leaves variegated and speckled with yellow markings, just as in the common Aucuba. In the nurseries of Messrs. WILLIAM PAUL & SON, at Waltham Cross, this tree is very effective at this season.

—— AUTUMN ROSES have been carefully looked after this year, in some cases perhaps because the early flowering ones were sadly injured by untoward weather in late spring, but in any case those Roses which gladden our eyes at this season have at least a double claim on our notice. Among most useful Roses at this season are Gloire de Dijon: surely the man who invented that Rose—we use the word advisedly—has earned a title to the enduring gratitude of his fellows; Souvenir de la Malmaison will go on flowering nearly up to Christmas if the weather prove open; Aimée Vibert and Céline Forestier are in fine bloom still, but perhaps the finest bed of autumn Roses that we have ever seen is one, at Messrs. W. PAUL & SONS, Waltham Nursery, of Safrano. The plants are on their own roots, and were planted, we are informed, in May of last year. They have been in bloom all the summer, and are full of bloom now. Mr. NOBLE'S Rose Queen of Bedders is also deserving mention for its free blooming qualities, which are prolonged into late autumn.

—— A NEW VEGETABLE MARROW.—While ones ears are ringing with the "coster's" cry of "Marrers," it may be interesting to note that Mr. HENRY VILMORIN has a new warted and orange-coloured variety, which has the reputation of coming into use in half the time taken by the ordinary variety in cultivation.

—— CLETHRA ALNIFOLIA.—This fine dwarf deciduous white flowering shrub is largely grown in some of the French nurseries—as, for instance, that of MM. CHANTRIER at Mortefontaine, to meet a demand that exists for it on the *fête* day of Saint MARIE, August 15. It is a free-growing, hardy plant, producing terminal spikes of small white flowers, and stands the process of potting up three or four days before required.

—— REMOVAL OF THE LEAVES OF STRAWBERRIES.—We have always been inclined to look on this as a barbarous practice; but we perceive the editor of the *American Gardeners' Monthly* recommends the practice, in certain cases, especially in the case of shy bearers. There is something in this, the more so as we do not look to the Strawberry for a supply of timber.

—— SALIX ARGYREIA is a garden name for a Willow with long linear lance-shaped leaves, like the white Willow, but covered on both surfaces with close white silky hairs. The young shoots are covered with velvety down, and the young buds have a pinkish tinge. We met with the plant lately in the nurseries of Messrs. WILLIAM PAUL & SON, of Cheshunt, and were much struck with its beauty as an ornamental tree.

—— CENTAUREA BABYLONICA.—This is one of the most striking hardy herbaceous plants, having erect rigid stems, 6 to 8 feet high, covered like the leaves with white cottony down. The lower leaves are oblong, toothed, and more or less pinnately lobed or partite toward the base, the upper or stem leaves are narrow lanceolate acuminate, finely toothed and decurrent at the base along the sides of the stem which is thus winged. The flower-heads are compact and arranged along the sides of the stem in the axils of the leaves; each is about 1½ inch long, and consists of a number of tightly packed overlapping spine-pointed scales enveloping a tuft of yellow florets. For the back row of the herbaceous border or other similar situation, the plant is well adapted from its stately appearance. It is a native of Asia Minor. We lately saw fine specimens in the garden of GEORGE JOAD, Esq.

—— HEDERA RŒGNERIANA (COLCHICA).—This bold-looking Ivy, as generally seen, has large leathery cordate-ovate leaves. It is of rapid growth, and is altogether one of the most distinct and best of the Ivies. The correct name is H. colchica (CARL KOCH). It is a native of China, Japan, Northern India, and the Caucasus.

—— ROSE DE LA GRIFFERAIE AS A STOCK.—Mr. WILLIAM PAUL recommends the use of this as a stock, and certainly the growth made upon it in his nurseries, as contrasted with that on the seedling Brier or the Manetti, is very striking.

—— LIKENESS IN LEAVES.—Two leaves are before us taken from two widely different trees, and yet so much alike that, did we not know their origin, we should feel it impossible to distinguish them one from the other, unless perhaps in size. Both are narrow, lanceolate, entire, very shortly stalked, like

those of a Weeping Willow ; both have the same stiff texture and dark-green colour. In both the venation is the same. The one is the dwarf Almond and the other is the Quercus salicifolia. Botanists who occupy themselves with fossil leaves and correspondents who send us leaves to name, without other evidence, would do well to bear these matters in mind.

—— Clematis orientalis has been recently flowering at Kew, and is a distinct and noteworthy species, little seen in gardens, though long known. It has the habit of C. flammula, but the leaves are glaucous, the segments coarsely toothed, and the flowers, which measure 1½ to 2 inches diameter, are greenish yellow in colour. The plant is a native of the Levant, extending into Affghanistan, and is quite hardy against a wall.

—— Clematis Henryi.—This is highly thought of by Mr. Fraser for its robust habit, good foliage, and large white flowers of good substance. This and Otto Froebel both show to advantage in the Lea Bridge Nurseries.

— - Dimorphanthus mandschuricus is a very handsome plant, but the name is decidedly objectionable. It may be useful to know that by calling the plant Aralia mandschurica we shall be acting in strict conformity with botanical propriety, and be diminishing somewhat of the uncouthness of the name. Dimorphanthus as a separate genus is not acknowledged by those who know the Araliaceæ best.

—— Marriage of Mr. John Methven.—Mr. John Methven, of the firm of Messrs. Thomas Methven & Sons, nurserymen and seedsmen, Edinburgh, was married on the 26th ult. to Miss Alice Wemyss Williamson, only child of the late Capt. Williamson, of the 41st Bengal Native Infantry, who with his wife and infant fell victims in the massacre of Cawnpore. The firm entertained the chiefs of the various departments of their establishment to dinner in the evening, Mr. Hugh Fraser being chairman, and Mr. William Murphy croupier. In proposing the health of the young couple, the chairman adverted in warm terms to the kindly relations which had existed between the firm and its *employés* during his nearly thirty years' connection with it, and congratulated his colleagues upon its continued prosperity.

—— Gardening Changes.—Mr. Coombes, at present foreman to Mr. Westland, at Witley Court, is engaged to succeed Mr. Searle in the management of the gardens at Himley Hall, near Dudley, Staffordshire, the residence of Lady Ward.—Mr. J. Taylor, who was gardener and general manager to the Hon. P. Wyndham, M.P., Isel Hall, Cockermouth, has been appointed to a similar situation at The Craggs, Broughton, *viâ* Carlisle, the residence of J. J. Harris, Esq.—Mr. Thomas Rowlands, foreman to Mr. Bennett in the gardens of M. T. Bass, Esq., M.P., at Rangemore, Burton-on-Trent, has been appointed gardener to the Viscountess Downe, at Baldersby Park, Thirsk, Yorkshire.

SELECT TREES AND SHRUBS FOR OUTSIDE WALLS.

Within the past few years much has been done in regard to testing the relative hardiness of many trees and shrubs from various parts of the temperate regions, which formerly were submitted to even stove temperature, a proceeding doubtless owing either to an imperfect knowledge of their native habitats or to their rarity. It is now generally known that many of these not only attain a more vigorous growth when exposed to the full rigour of our climate, but that they flower and even fruit regularly, whereas, hitherto they could never attain sufficient size when under glass except in the spacious houses in large establishments. There is yet much need of further experiments in this direction, and it should be one of the chief aims in horticulture to advance, as far as practicable, the acclimatisation of plants from the rich storehouse of other climes, and thereby obviate, to a great extent, the necessity of protecting them in elaborate glass structures, so that they may be enjoyed in the open air not only by the few but by every one who has a garden or a naked wall to clothe.

Already the recorded results of the few past experiments have tended considerably to augment the list of ornamental shrubs for wall decoration from which to make a selection. In lieu of a garden of acclimatisation in this country, if trustworthy statistics could be obtained from various parts of the kingdom and published, with respect to the relative hardiness of reputed tender exotics, and also as to the conditions under which they are growing, such as the state of the soil, situation, &c., it would be a great service to horticulture, and rapid progress would soon be made, and cultivators would then risk their choice shrubs, &c., in the open air with less fear of failure. In many recorded instances of the unhardiness of certain plants the failure may be frequently attributed to the unsuitability of the soil, aspect, or other local causes, for it is a well fact known that many exotics perish, not so much from the severe coldness as from the excessive humidity of our ordinary winters, and if the mechanical condition of the soil be not a primary consideration but ill success may be expected. It is a frequent occurrence to see a border with one kind of soil planted promiscuously with trees and shrubs, which in their respective habitats are found growing under extremely diverse circumstances ; for though it is impracticable in cultivation to carry out these in minute detail, they should to some extent be observed. If this branch of horticulture could be developed, not only by the above suggestions, but also by grafting those of weakly constitutions on those more hardy and robust—which has been tried to some extent with very favourable results—it would be source of much interest, and would open a fresh field for some of our horticultural talent.

Enumerated below is a selection of the most desirable for the purpose ; many are old hardy wall plants, and several have withstood the past few winters with impunity near London, and others are of doubtful hardiness, but of which the writer would be glad to have any further information. All are in cultivation, and the majority may be obtained from most nurseries, and all may be seen at Kew in the various collections, notably that of the large temperate-house, which is a rich storehouse of a host of rare and beautiful plants. The appended brief descriptions are intended to give an idea of the merits of each. Though the list has no pretension to be exhaustive, it is hoped that it will ere long be greatly augmented by the results of further observations. It may be conveniently divided into sections according to the geographical areas of their distribution. Beginning with South America, which is particularly rich in trees and shrubs adapted for the purpose, the absence of those of the deciduous class is very conspicuous.

Berberidopsis corallina.—This beautiful climbing evergreen shrub was introduced from Chili a few years ago by Messrs. Veitch, but it is seldom met with in gardens. It has long, trailing, slender branches, with ovate, spiny-margined leaves. The flowers are produced in terminal racemes, and are globose in shape, of firm texture, and of a deep red colour. The slender pedicels are about 2 inches long, and are also red. It has proved hardy in sheltered situations in the South, with the protection of a wall, and flowers as freely as when grown under glass. Whether grown in a cool greenhouse or on outside walls it is one of the most desirable of evergreen shrubs of recent introduction.

Embothrium coccineum.—This remarkable proteaceous shrub is a native of South Chili, and is one of the finest plants from that region. It has proved hardy in various parts of this country, forming handsome specimens over 20 feet high in some instances. It is of erect habit, with alternate lanceolate leaves, which are very glaucous on the under surface. The brilliant scarlet Honeysuckle-like blossoms are produced very freely in dense terminal racemes, and it is usually in full beauty about the beginning of May, when it forms a highly attractive object. It requires a sheltered and well drained situation, and planted in free and open soil. Slight protection should be given when it is forming its flower-buds, as late spring frosts are apt to injure them at that stage. It is very difficult to propagate, hence its comparative rarity, but it should be included even in the choicest selection.

Lapageria rosea.—The unrivalled and now rather common Lapageria rosea has proved much hardier than was formerly supposed, as it has withstood several winters in various places in the South, for instance the portion of a plant outside one of the houses at Gunnersbury Park which flowers freely and regularly ; true, the main part of the plant and also the roots are inside, and it goes far to show that if the roots of many of these tender exotics are in well-drained borders which are prevented from becoming too cold, the foliage will not suffer from severe cold, and this to a great extent could be carried out by thorough drainage and ample mulching in winter. It should be planted against a warm wall, with partial shade in summer, such as is afforded by any deciduous tree, which is preferable, as an evergreen excludes the light, and tends to increase the dampness of the spot in winter.

Philesia buxifolia.—The beautiful dwarf Philesia buxifolia, which much resembles the preceding in its flowers, is probably as hardy, and it would be of much interest to give it a fair test.

Mutisias.—The species of Mutisia are amongst the most beautiful of the vast family of Compositæ. There appear to be but three species in cultivation at the present time in this country, though others equally as beautiful have hitherto been introduced, but now are probably lost to cultivation, doubtless in consequence of the unfortunate fact that they are difficult to manage. M. decurrens is a charming plant when seen in perfection. It has few twining slender stems and evergreen, lanceolate, glaucous leaves, with the midrib terminating in a tendril. The flower-heads are borne on stalks 6 inches to 1 foot in length, and are 4 inches to 6 inches in diameter. The outer florets number from twelve to twenty, rather long and narrow and gracefully reflex. The colour is deep orange, with the central florets a shade darker. It flowers from June till August, and lasts a long time both on the plant or in a cut state. It is an old introduction, and has been a choice object of culture in many places and under various conditions, with a varying degree of success. The finest specimen the writer has seen was in the present year, growing against a south wall, planted in rich and stiffloam with the stems nestling amongst the foliage of an Escallonia, from which stood out in bold relief nearly a hundred of its truly gorgeous blossoms. The success was apparently owing to the partial shade afforded to the stems, which when not so protected against a hot south wall generally present a rusty-like appearance and often perish, so the experiment is well worth further trial. M. ilicifolia is another beautiful evergreen climber, with slender stems and Holly-like dark green leaves. The flower-heads are of less size and with fewer outer flowers than the last, and of a colour varying from white to deep rose. This has been cultivated very successfully in a cool greenhouse, and doubtless it would thrive equally well outside, but no information is at hand in reference to it. M. Clematis is a very distinct species, extremely unlike either of the preceding in general habit, and strikingly resembles some of the leguminiferous plants. Its stems, which attain 20 to 30 feet in height, are somewhat angular and slender. The leaves are compound, with from seven to nine pairs of leaflets, ending in a branched tendril. The flower-heads are large and of a rich red colour, and well established plants flower freely in the open air in warm localities in this country.

Escallonias.—The genus Escallonia is exclusively confined to South America, and includes some highly ornamental species. The well known E. macrantha scarcely needs description here, as the bright evergreen foliage and the almost perennial show of its rosy coloured blossoms has entitled it to rank amongst the most desirable shrubs for wall decoration. There are several forms of it which vary in colour, the variety sanguinea is very distinct, even more showy than the type. Scarcely inferior to it is the somewhat rare E. floribunda, which inhabits the mountains of New Granada, also an evergreen with lanceolate, slightly toothed leaves, and producing about the end of August immense panicles of pure white and fragrant blossoms. It is much in the way of the better known and more southern E. montevidensis, but a much finer plant in every way and quite as hardy. The preceding species are of sufficient hardiness to withstand our ordinary winters with the protection of a wall with a southern or western aspect, in the south and western counties, but farther north and in exceptionally severe winters they would probably require protecting by mulching the surface of the soil, and a mat or like material to cover the foliage. There are several other species of about the same degree of hardiness, but which are inferior in point of beauty, such as E. illinita, pterocladon organensis, &c. The best of the hardier species is the handsome E. Philippiana lately introduced by Messrs. Veitch, and figured in this journal a short time since. We must not forget the common E. rubra and its variety albiflora, which with the last would thrive well against a wall. For further information on this interesting genus, an excellent note will be found at p. 978, 1873, of the *Gardeners' Chronicle.*

Cantua buxifolia.—This is another fine illustration of the floral wealth of the Peruvian region, as it is one of the showiest of all polemoniaceous plants. It is an evergreen shrub, growing from 4 to 6 feet in height, of neat and compact habit, with numerous branches and small oblong bright green leaves, ciliated at the margins and downy beneath. The flowers are large and showy, produced singly on short spurs. They are tubular, about 1½ inch long, with a wide-spreading mouth of a bright carmine colour, the tube being of a rich yellow. Unfortunately it flowers rather irregularly, but amply repays careful culture. It is hardy with wall protection in the south and west

parts of this country, and should be planted in a rich and well drained soil and be placed in a sheltered and partially shaded situation.

Azara.—Of this genus there are a few valuable species. A. integrifolia, an evergreen shrub, growing about 12 feet in height, with small, roundish dark green leaves, from the axils of which a profusion of short spikes of bright yellow feathery blossoms are produced in autumn, and which are of aromatic fragrance. The variegated form is highly ornamental. The variegation of the leaves consists of greenish yellow with a blotch of dark green, and in a young state are edged with deep pink. It is as yet rather rare, but will without doubt become deservedly popular. It is a native of Chili, and thrives vigorously in the open air with the protection of a wall. The hardier A. microphylla, which forms such elegant specimens as a standard, also makes a charming wall shrub. (See *Gardeners' Chronicle*, 1874, p. 81.) The somewhat scarce A. Gillesii has large ovate and coarsely toothed leaves, with long racemes of bright yellow flowers. It is also a native of Chili, and probably will prove as hardy as A. integrifolia.

Desfontainea spinosa.—This handsome Peruvian shrub, though not a climber, thrives admirably against a wall in the South and West. It has a rigid habit, with evergreen, leathery, spinose leaves, much resembling those of the common Holly. The long tubular scarlet and yellow blossoms are produced singly from the tips of the branches, and when borne plentifully it forms one of the most attractive shrubs we have.

Discaria longispina, a native of Monte Video, and a near relative of the Colletia, is a very graceful and pleasing wall plant when in flower. It has slender and somewhat drooping branches, with numerous spiny branchlets, at the base of which the tiny slightly toothed leaves are produced. In spring the branches are densely covered with its pure white tubular blossoms, about half an inch long, and lasts a long while in good condition. One or two of the species of Colletia are very desirable, not so much for the blossoms as for the unusual aspect they present by the numerous spiny abortive branches. Among the best are C. spinosa and C. serratifolia, both natives of Peru.

Solanum jasminoides, though generally known as a greenhouse climber, has, however, proved a hardy wall plant near London, and it is one of the most valuable we have for the purpose, as it is in flower throughout the greater part of the year, though in greatest profusion in autumn. The flowers, which are white with a purplish tint (when grown outside), are borne in clusters from the sides of the slender twining branches, and hang very gracefully, and are well adapted for cutting, as they last a long time in good condition. It is a native of Rio Grande. The purple-flowered S. crispum is somewhat hardier, and also forms a handsome wall plant, though less desirable than the preceding.

Fabiana imbricata.—This remarkable Chilian shrub is very unlike any other solanaceous plant, and much resembles an Erica in its erect, rigid growth, in foliage, and also in the flowers, which are about 1 inch long, narrow and tubular, of a white tinted with purple colour; they are borne very profusely in the early part of summer. It thrives best when planted against a wall, though it is sufficiently hard to stand unprotected.

Lardizabala biternata is a hardy evergreen creeper, well adapted for rapidly covering high walls. The leaves are compound, the number of the leaflets varies from two to six, and they are ovate, dark green, and leathery in texture. The flowers are produced in winter, and are of a deep chocolate colour, borne on pendulous racemes from the axils of the leaves. It is found in various parts of Chili. It affords edible fruits, which are sold in the Chilian markets under the name of Coguill-Vichi.

Mitraria coccinea.—This very ornamental evergreen shrub is a native of Chiloe, and was introduced about thirty years ago. Since then it has proved hardy, and is a valuable acquisition to the list of decorative wall plants. It is of a climbing habit, and under liberal treatment attains several feet in height. The bright scarlet tubular blossoms are about 1½ inch long, and are borne profusely, hanging gracefully on slender peduncles about 2½ inches long from the axils of the small oval leaves. It is usually treated as a greenhouse plant, and is remarkabie as being the hardiest Gesneraceous plant as yet introduced.

Eucryphia.—Of this genus there are now two species in cultivation: E. cordata, introduced from Chiloe about thirty years ago, but which as yet is rather scarce in gardens, forms a handsome tree, growing many feet in height, with cordate, ovate, and toothed leaves, and large white flowers produced singly in the axils of the leaves. E. pinnatifida is of recent introduction, with pinnate leaves, and very handsome white flowers, and doubtless will prove as hardy as the last.

Ercilla (*Bridgesia*) *spicata.*—Though not very showy this evergreen shrub is very useful for rapidly covering large spaces of bare wall. It grows many feet in height, and the stems throw out numerous small roots which cling to the wall with great tenacity. The branches are slender and drooping, with oval, dark green leathery leaves, crisped at the edges. The small pink blossoms are borne very profusely in small clusters from the axils of the leaves, and in this state is very interesting and attractive. It is a native of Chili, and an old inhabitant of gardens, but is seldom met with. (See *Gardeners' Chronicle*, 1878, vol. ix., p. 653.)

Heimia salicifolia, which inhabits various parts of tropical South America, is a handsome lythraceous shrub with small linear leaves, and produces a plentiful supply of its small yellow blossoms throughout the greater part of summer. *G.*

(*To be continued.*)

A GARDEN ARCADE.

THE enclosed rough sketch (fig. 80) of a garden-walk represents, I venture to suggest, a more natural and graceful ornament to a garden than studied ornamental arches, wherein intricate iron or wood-work struggle to maintain their own against the beautiful climbing plants that embrace them. The idea in the above sketch, as many of your readers will immediately discover, was derived from a ramble amidst the charming vineyards of Italy. The piers are rough rubble-stone, about 2 feet square, and vary in height from 5 feet 6 inches to 8 feet 6 inches. The subject of the sketch contains six bays (five only are shown), and terminate at the smaller end in a rockery. The piers are covered with Ivy, and this will in another season have met across the overhanging boughs. It is necessary, in setting out such an arrangement, to build the piers in perspective, *i.e.*, to gradually increase the width from pier to pier and the height from one end to the other. If this is done every pier will be seen from either end, no matter how many or few there may be. In the case of the sketch they are some 10 feet apart; but this distance may be varied according to circumstances. It is obvious, however, that if the bays are placed nearer to each other, the perspective must be proportionately reduced.

I am aware there is nothing new in the arrangement, but venture to think there are many villa gardens and smaller plots surrounding large towns where some such an arrangement might be adopted with advantage. For small gardens the piers may be simply rough wood posts, obtained at trifling cost, and which when well covered with Ivy will look equally well winter and summer. There is no limit to the extent the idea may be enlarged upon by cross-pieces from pier to pier, forming indeed, as the Vines do, a beautifully sheltered avenue, on a small scale, from the sun's directer rays. *A Constant Reader.*

Home Correspondence.

Is Scotland a Part of England for Exhibition Purposes?—It was decided by a body of referees at the recent International Potato show, that for show purposes Scotland is not a part of England. It was not the decision of the committee, and it is very probable the committee would repudiate such an inference as opposed to common sense and common practice; but it was come to nevertheless, and under these circumstances. Messrs. Hooper & Co., seedsmen, Covent Garden, offered special prizes for "six dishes of Potatos, distinct new varieties, not in commerce, or in commerce in England for the first time this year, &c." Of some seven collections staged three were disqualified by the scrutineers on the ground that they contained American varieties put into commerce before the time specified. Two other competitors staged Early King Kidney, and the presence of this Potato was objected to on the grounds that it is not a distinct variety, being simply a reproduction of Sutton's King of Potatos, and that, assuming it could be accepted as a "distinct new variety," it had been in commerce beyond the time specified. It may be stated that Early King Kidney is one of Mr. Porter's selections, termed by him an "improved King," and that it was catalogued by Messrs. Cardno & Darling, of Aberdeen, in 1876, they having purchased the stock from Mr. Porter. The matter of the admissibility of Early King Kidney was submitted to three referees, and it would appear they could not controvert the fact that it was not a new variety within the meaning of the schedule. But they went a step farther, and came to the conclusion that there was no evidence the Potato had been offered for sale in England until the present year, that England was not to be confounded with Great Britain, and therefore the protest was overruled. Evidently this idea of the geographical isolation of England as distinct from Great Britain was trailed across the path of the discussion by one of the exhibitors of the Potato protested against; but it is not a little remarkable, and it appears to have altogether escaped the notice of the referees, that this very exhibitor was a successful competitor in class C., for eighteen English varieties of Potatos, three varieties at least of undoubted Scottish origin being staged by him. The fact is, the term "English" has always been used in the schedule of prizes of the International Potato Show in its broadest sense, and in contradistinction to "American," and has always been employed to cover Potatos raised in every part of the United Kingdom. I may add that the protest against the admissibility of the Potato Early King was supported by such authorities as Mr. Porter, of Old Meldrum, and Mr. Peter McKinlay. I have always considered that schedules of prizes should have their conditions interpreted in the broadest sense, and this opinion is held by all competent judges. I might add by way of introducing another technicality that it would probably be very easy for Messrs. Cardno & Darling to show that their seed catalogue for 1876 was sent to some of their customers in England during that year; if so, then it is established beyond dispute that Early King Kidney (apart from its inability to be classed as a distinct new variety) was offered in commerce in England in 1876. *R. Dean, Ealing, W.*

The Judging of Melons.—The remarks which have lately appeared in these pages on this subject seem not to have been taken into account at the recent fruit show at the Crystal Palace, seeing that those engaged in such an exceedingly arduous task as was there allotted to them went through the tasting system of giving their awards in the several classes. That such awards were given with discretion I have no doubt, but at the same time I am fully inclined to believe, as does Mr. Fish, that bewilderment must follow the tasting process, especially when carried to the same extent as at the show in question, to say nothing of the deteriorated condition of the fruit so cut when the show closes. One thing connected with the judges' decisions struck me as being remarkable, viz., that two unnamed seedlings should take first honours in their respective classes against standard varieties such as Scarlet Gem, Eastnor Castle, Read's Scarlet-flesh, Colston Bassett Seedling, Heckfield Hybrid, and others whose merits have been so well tested. Another thing which seemed to occupy great attention was the dissimilarity in the fruit of the same varieties staged by the various exhibitors, the most noticeable being Eastnor Castle; so strikingly dissimilar was the majority of this variety from the one staged by Mr. Coleman in his collection of fruit, that one was inclined to doubt their being correctly named. I would here recommend Cuthush's Prince of Wales green-flesh Melon as one of the best; it combines these essential qualities which few Melons possess, viz., it is a good variety for early work, being a free setter, having a robust constitution, handsome fruit, averaging 4 lb. to 5 lb., and, last but not least, of exquisite flavour. It was certificated by the committee of the Royal Horticultural Society in 1867, and has frequently gained 1st prizes since that time. I think it is a true friend slighted. *E. Morgan, The Butts, Harrow-on-the-Hill.*

Monœcious Hop.—You may remember a specimen of a monœcious Hop which I sent you four years ago and which you described and figured in the *Gardeners' Chronicle* at the time. It may interest you to hear that two of the seeds sown germinated, with the following results:—1. Entirely male: no trace of Hops at the ends of the pendent spikes of male flowers as in the parent plant. (A reversion?) 2. Decidedly monœcious and more inclined to produce Hops than even the parent. The three lowest spikes are male entirely, the next higher male with a single Hop at the tip of the spikes; above this a full production of Hops. The flavour is that of the Golding Hop, the sort planted throughout the garden in which the parent stands. Is not No. 2 a distinct variety, or at any rate on the way to produce such? [Yes.] The parent plant continues every year to produce male and female flowers, and we have one or two more in the grounds there like it. I judge that not above 3 or 4 per cent. of the seed sown germinated. *L. Lewis, East Farleigh, Maidstone.*

Amicia zygomeris.—In your Answers to Correspondents, p. 415, you say that Amicia zygomeris is too tender for outdoor culture generally. It has grown here for many years, and though it does not flower, its curious foliage makes it well worth growing. I believe it has long been grown at Oxford as a hardy plant. *Henry N. Ellacombe, Bitton.*

Paraffin as an Insecticide.—I cannot say as Mr. Rust has done, that by following Mr. Knight's advice I have cleared a house of mealy-bug. Seeing the advice given in vol. ix., p. 666, and having the care of Stephanotis and Gardenias, infested with bug, I began with it directly and continued it twice a day, morning and evening, for six weeks; but the bugs were as healthy and as plentiful at the end as they were when I began it. I used it in the exact manner

described by Mr. Knight—one wineglassful to 4 gallons of water, one squirt into the can and one on the plants. Perhaps your correspondent would kindly inform me if the water should be any exact temperature before putting the paraffin into it, as I used it the same as the house *J. B., Plowhatch Gardens, East Grinstead.* [Probably the paraffin was of "low" quality. It varies greatly in strength. Eds.]

Profitable Apples.—As the planting season is near at hand, I venture to give a list of names of Apples that I have proved to "never fail":—Ecklinville Seedling, Lord Suffield, Cellini, Lord Clyde, Alfriston, Stirling Castle, Annie Elizabeth, Pott's Seedling, New Northern Greening, New Hawthornden, Warner's King, Hanwell Souring, Emperor Alexander, Tower of Glamis, and Irish Peach. Every garden should have one or more of these. The Red Hawthornden is of great promise; Yorkshire Beauty will prove a first-class Apple for crop, &c. Smith's Worcester Pearmain will also prove to be a grand Apple for market purposes. *William Ward, The Gardens, Stoke Edith Park, Hereford.*

Dimorphanthus mandshuricus in Scotland.—There is growing here (in the south-west of Scotland) a Dimorphanthus mandshuricus quite as luxuriant as the one described as being at Dalkeith. It is about 9½ feet high, and has flowered this year for the first time. There are now about ten bunches of blooms on it, and the stem at the ground is 10 inches in circumference. It is a fine plant, and has stood unprotected for several years. *W. H. M., Munches, Dalbeattie.*

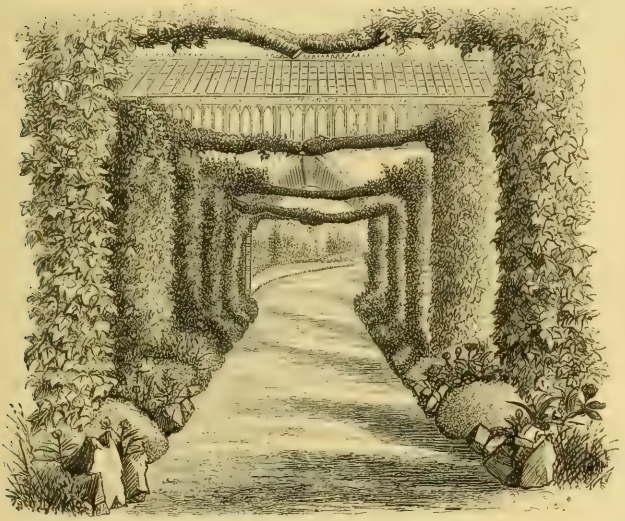


Fig. 80.—Garden Walk at Woodbury Lodge, Withington, near Manchester. (see p. 440.)

Dahlia Paragon.—I do not know what limit is put by the Floral Committee to the time plants have been in cultivation to entitle them to receive First-class Certificates of merit; but having some idea that Paragon Dahlia was associated with my knowledge of Dahlias in the remote past, I searched among some old catalogues, and in one published in 1834, issued by Samuel Appleby, St. James' Gardens, Doncaster, I found Dahlia "Paragon, single, maroon and crimson;" and at the fruit show at the Crystal Palace I met with an old Dahlia grower who informed me (having at the time a flower in his possession that he had obtained from Mr. Cannell) that he grew this particular variety forty years ago. I do not intend to condemn the action of the Floral Committee, but the granting of First-class Certificates leads to the impression that a plant receiving one is new, and it is purchased by some with that conviction. I do think that the decorative value of Dahlia Paragon has been exaggerated, but I am of opinion that ninety-nine gardeners out of a hundred would agree with me that for cutting purposes it is far inferior to the pretty Pompon varieties of which there are so many charming types in cultivation. Is the fact of certificating this flower to be taken as a hint that Dahlia raisers must hark back to the single types, and commence the work of improvement again? That a Dahlia like Keynes' Rosy Morn should be passed over, and a certificate given to Paragon, appears to me to be a matter giving rise to serious regret. *R. D.*

A Notable Eucalyptus.—On a recent visit to Princes Park, Liverpool, my attention was attracted by a remarkably fine specimen of Eucalyptus globulus growing on a bank with a south-east aspect. The rate of growth appeared to me to be something unusual, as well as the exceedingly symmetrical proportions of the bush and its fine glossy foliage. I was therefore tempted to enquire of Mr. Mason, the courteous curator of the park, something of the history of the plant, and he has kindly furnished me with the following particulars. The height of the plant is 20 feet, its diameter through from tip to tip of branches at 3 feet from the ground 10 feet, or equal to a circumference of 30 feet; girth of stem at 1 foot from the ground 11 inches, and at 4 feet from the ground 9½ inches. The plant has but one main stem, which is perfectly straight and uniform in growth all round, forming a beautiful pyramid. It was planted out in the summer of 1876, a small plant, and grew that season to the height of 18 inches or 2 feet. It stood the winter of 1876-77 uninjured, and started into vigorous growth in the spring of 1877, and made a growth that summer of 12 feet in length, clothed with branches to the ground. The tips or points of a few of the branches were slightly injured last winter, but not sufficiently to spoil the appearance of the tree further than giving it a rather brown appearance. The injured points of the shoots were cut away last spring, and the plant has grown this summer to the dimensions stated above, which (as far as I know) is a rate of growth seldom if ever equalled in England. *W. Hinds.*

The Potato Show.—In your report (p. 414) you say that in judging class B. "the censors would seem to have made the award of the 1st prize solely to the feature of size." This is an injurious misconception of the case. Classes A. and B. were judged by Messrs. Earley, Hooper, and Hibberd. They saw what the reporters and the critics, who were outside the ropes, could not see; for they examined the tubers and noted their faults, and when they finally made their awards were in no doubt as to the order in which the winning lots should be placed. They would gladly have given a first position to smaller samples than those of Mr. Cresswell, but they could find none so good, and when they had carefully counted points in all the best lots these were fully a dozen points ahead of all the rest. There was no occasion for "despair," and but little for hesitation; for, apart from the question of size, these tubers were faultless, and in several conspicuous instances were not a shade larger than a proper representation of the varieties required. Take Manhattan for instance, and what is the value of a 6 oz. or 8 oz. tuber? It is worthless. But a 10 oz. or 12 oz. sample may be worth attention, and perhaps a prize. *Shirley Hibberd.*

Tomatos.—We have the finest crop of Tomatos we have ever had, and I thought it might be useful to some young gardeners to know how we got them. The seed was sown at the beginning of March, and as soon as the plants were about 9 inches high we cut the tops all off and made cuttings of them, putting them into good sandy soil, and then into a hotbed, where we were striking Verbenas for bedding. As soon as they were rooted we potted them off, two in a 48-sized pot, using good rich soil, and placed them at the back of a low Cucumber pit near the glass, from which we moved them to the back of the Potato pits, where they had plenty of air all day. We kept them there till the first week in May, and then placed them out-of-doors in a sheltered position, and covered them up at night. In the last week in May we planted them out, some on east, some on south walls. We dug out the holes, putting in some half-rotten manure and mixed it well with the earth. We planted them out in the spaces between the wall-trees, gave them a little water, and tacked them to the wall with a strong thread and nails. As they grew up we tacked them in very carefully, and removed all the laterals so as to throw all the strength into the main stems. As soon as we get four or five trusses of fruit to each plant we took out the top, and gave them some manure-water about twice a week in dry weather. We carefully removed all laterals, and also a few leaves where they were thick, so as to let in the sun and air, and by these simple means we have a splendid crop of very fine fruit. *W. Drewett, Breamore House, Salisbury.*

Fuchsia Venus Victrix.—Mr. Thomas Garrat is correct as regards the period when this variety of Fuchsia was introduced. I recollect, when a lad at the Clapton Nursery in 1842, seeing flowers of it which had been sent for Mr. Low's inspection. It was then shown to the *employés* in the establishment as a new variety, and being the first light-coloured variety we had seen it was made the subject of conversation and comment amongst us for some time. The beautiful Achimenes longiflora was also introduced about the same time. It was the practice with the late much-respected Mr. Hugh Low to offer the young men in his employ an opportunity of seeing any new plants or flowers which might be sent to the offices, and many besides me must recollect the kindness of our employer. The late Mr. Hugh Low was a kind-hearted, generous-minded man, and though long since passed away, his memory lives in the minds of many. This was one of the little episodes of my early correspondence with him, and it remains indelibly impressed in, I hope, the right place. *C. B. S., Jersey.*

—— "Pater" is sadly wrong in his reckoning with reference to Venus Victrix (*vide* p. 379). I well recollect seeing it in several collections previous to 1846, and in the autumn of that year some fine plants of Venus Victrix, Purity, Dr. Jephson and Corallina (the latter crimson tube and sepals and then the best of its class) were shown at the Hull Botanic Society's gardens. Venus de Medici was not raised, or at all events was not in commerce until ten years after that date, and if not a seedling from Venus Victrix it had Victrix sap in its structure. *Antediluvian, St. Lawrence, Isle of Wight, Sept.* 30.

The Royal Horticultural Society's Show at Preston.—Your correspondent "A. B." laments the loss incidental to the late Provincial Show at Preston. Certainly it is lamentable; but in the face of such a fact is it wise to advise the Society to attempt a similar failure elsewhere out of London, especially in such an uncertain month as September? Carlisle is a case in point as to the fickle nature of that month for outdoor exhibitions. But looking at the fact that really fine horticultural exhibitions are now existent all over the provinces, I would ask is it wise to invite the Society to go so far afield to do work which is already being done so well without the Society's aid? Again, who can say that the Fellows or supporters of the Society are as a body one whit the better for a provincial show? "A. B." favours a fruit and vegetable exhibition in September: very good; but why hold that in the provinces when the Society has at South Kensington the finest possible space under cover for the holding of the same? The majority of the exhibits would be fairly portable, and could easily be brought to London. The metropolis is, further, a much more attractive place for country exhibitors to

come to and to spend four days in, and any provincial town can only be home to a few whilst London may be so to many. Why does not the Society strive to rival the recent great show at the Crystal Palace? Surely what a joint-stock company can do so well ought not to be out of the reach of a Royal Society? If they would make a liberal offer with it they could have the International Potato Show almost for the asking, so willing are the committee to give the Society the benefit of the Potato show prestige; in any case I fail to see any good reason why the Society should go ruralising. *A. D.*

Peziza crucifera, Phil. I quite agree with Mr. Phillips that the crystals surmounting the hairs in this species is an interesting phenomenon, but nothing more. If he has satisfied himself that they are inorganic crystals, then they are not permanent characters, and unless other and distinctive specific characters can be found the species is a false one. The name crucifera is unfortunate, because the crosses on the hairs are no essential parts of the plant. Manifestly, if crystals of oxalate of lime, or crystals of a similar character, were found upon the hymenium of Peziza aurantia, Mr. Phillips would not regard it as a distinct species on that account. It is so seldom that my friend Phillips differs from me on essential points, and we are most constantly in correspondence, that I am disposed to regret that we did not discuss this subject previous to the publication of the name. Some time since, when we had this Peziza under review, the inorganic character of the crosses had not been mooted, the determination of this point now places the whole question upon a different basis. Probably, as I suggested twelve months since, the crystals which surmount the hairs of Peziza echinulata, Awd., are also inorganic, and, if so, must have no place in a specific diagnosis. I was led to the conclusion that this was the case in P. echinulata, because, on examining a specimen mounted in glycerine, after twelve months' rest, I could find no trace of the terminal stellate appendages. On remarking upon this circumstance at the time, it was objected that glycerine would in time render these delicate crests so transparent that they would not be recognisable. I have also a memorandum to the effect that similar crystals had been detected on the hairs of fresh specimens of two other folicolous species on which they are not usually found. I have used the term "crystals" in all these instances because they most resemble crystals in form. Moreover, I feel strongly impressed with the suspicion of their being "crystals" in fact, in all these cases, and that they must be left entirely out of account as specific characters. If there are no features but the stellate apices of the hairs to distinguish P. crucifera from P. virginea, I must in candour decline to accept Peziza crucifera as a distinct species. *M. C. Cooke.*

The Fuchsia.—I cannot refrain from endorsing Mr. Fish's statement that the Fuchsia has not had its day. When visiting the gardens at Dogmersfield, Hants, I saw about 170 Fuchsias, each one occupying the centre of a round bed. Leading from the flower garden is a long walk, and about half the length of it is a cross walk, with borders on either side. In one walk were planted ninety-six and in the other seventy-six Fuchsias, and such a display of Fuchsias I never saw before. They were from 3 to 4 feet high, splendidly flowered and the foliage excellent, standing well above the bedding plants of a dwarfer nature which surrounded them. Mr. Fowle, the gardener, who seems to be master of all styles of bedding-out, is here most happy with the Fuchsia. Amongst the kinds he uses are many of the older ones, such as Madame Cornelissen, Venus de Medici, Rose of Castille, and many other newer and good varieties can be seen among them. Every plant is good, and many of them equal to the plants often to be met with in the first-prize lot at exhibitions. Evidently the Fuchsia has not had its day everywhere, but is having it, as it ought to, at least at Dogmersfield; and I have an idea that Mr. Fowle intends to extend his Fuchsia growing, so well does it answer with him. *Charles Ilott.*

—— I think that when "A. D." sorrows for the waning (?) popularity of the Fuchsia he should restrict his remarks to his own immediate neighbourhood. Many plants have other missions than to meekly be carried to shows; that they are not as popular now as formerly for decorative purposes I entirely deny. I speak for my own locality and the surrounding neighbourhood, that I know—and I emphatically declare that so far as to their popularity declining it is quite the other way. I know a cottage, the front of which is covered with Fuchsias; amongst the plants one of Gazelle, occupying a space 9 feet high by 8 wide, and literally hung from top to bottom with beautiful flowers—in fact, this one plant is worth going a journey to see. Then there are Madame Cornelissen, Souvenir de Chiswick, and others, light and dark, growing and flowering in the greatest luxuriance. Waning popularity indeed! No one passes this cottage without stopping to admire; and more—these plants have been planted two years, and have not been covered in any way. Again: I know a terrace with a 5-feet piece of turf on each side of the walk, and running along this on each side are alternate plants of Dracæna australis, graceful and beautiful, and circular beds of the better kinds of Fuchsias; these have grown together in the freest possible way, and are masses 3 feet or so high, and fully as wide, of beautiful flowers, that sweep the turf—in fact, I think I never saw better flowered plants. Waning popularity! Why, people come miles and miles to see these beds. Again: I know some rockwork, planted in a beautiful manner with flowering plants, and where the Fuchsia plays an important part; there are trim bushes of microphylla, discolor, coccinea, thymifolia, &c., running down from the tallest to the shortest, and these finished below with that gem of gems, pumila: this is in the form of dwarf compact bushes 8 to 12 inches wide by 8 or 10 high, and dense masses of beautiful crimson flowers. There are groups of fulgens that have been flowering for months and are still as beautiful as ever; there are groups of globosa, with their most gracefully arching shoots and extremely pretty flowers; there are odd plants of some of Mr. Low's hybrids, than which none have better habits or are freer to bloom, and which are also quite distinct in foliage and colour from all the modern hybrids, and quite carry us back to some of the popular sorts of twenty and more years ago; there are stones and ledges covered, as with a carpet, with the curious procumbens, which is still flowering freely and bearing in profusion its unusually large fruit, varying from green to deep red, and many others. No one who sees these, even dreams that the race is losing in popularity. I know a bed of that lasting favourite, Madame Cornelissen, edged with pumila, both of which (in fact the latter always is) were killed to the ground last winter, and which is now a profuse mass of bloom varying from about 9 inches in the edging to about 18 inches in the centre. I know the roof of a greenhouse, part of which is covered with that marvellous Fuchsia, Champion of the World—and rightly named it is, for although it cannot boast of much form, it can of size, and thus grown is really grand. I know many more cases where both species and hybrids play the most important part in the embellishment of a garden, producing effects that most assuredly cannot be approached by "A. D.'s" Violas or Potatos. There never was a time, as no doubt many in the trade could affirm, when more Fuchsias were disposed of than the present, and not only are the old and new hybrids disposed of readily, but the old species, those nearly forgotten, are also coming to the fore again. I am glad to see W. D. Prior mentioning the names of some of the old favourites. I do not know any modern sort with the waxy sepals, tube, and grace of Duchess of Lancaster; and where now have we the peculiar vivid corolla of Queen of Hanover, which I have not seen for years? and I do not think we have any modern sort with the peculiar deep purple corolla of old Sidonia. We have not only lost in the modern sorts some of the peculiar colours of the old ones, but most assuredly we have lost constitution. It may be admitted that perhaps in some neighbourhoods other novelties have crowded the Fuchsia out; this is mainly because you cannot grow two plants where there is only room for one: but depend upon it the Fuchsia has not had its day, and even where it has for a time given way to newer subjects, like high-heeled boots, it will come back again, and this quite on account of its intrinsic merits (I don't mean the boots), for there is no race of plants grown in the garden that comprises in itself so many diverse habits, colours, and styles—suitable, in fact, for all and every decorative purpose, and for every season. All that is required is a little free discussion in order to make these merits better known, and then will the Fuchsia's new morn arise and break into a glorious day, longer and brighter than ever. *T. Smith, Newry, Co. Down.* [We should be sorry to admit that such a beautiful plant as the Fuchsia has had its day, but there is no gainsaying the undoubted fact that Fuchsias are not grown to the extent that they used to be, nor are they now exhibited in anything like the same style. EDS.]

Wintering Young Cauliflowers.—Instead of pricking these out, as is generally done, it will be found much better, where only a limited quantity is required in private establishments, to pot them singly in 3-inch pots, in which size, if packed closely together, a great number may be wintered in a two or three light frame. Plants so treated come into use much earlier in the spring than others whose roots are necessarily disturbed at the time of planting, the check from which often causes many to button. Wintered in pots the ball may be transferred entire, but however careful one may be it is impossible to lift them from a bed or border without considerable disturbance, and if the weather sets in unfavourable immediately after, they are a long time in getting a start. I have on several occasions tried the two side by side under conditions as to soil, manure, and general treatment exactly alike, and in every instance the pot plants had the best of it all through, and were decidedly superior in every respect. This is not much to be wondered at when we consider that the fibres formed around the ball are in full activity at the time of turning the plants out, and that they are only waiting to be liberated and placed where they can get hold of fresh food, whereas the others have most of these to form before they can make any progress. The way we manage is to put in a pinch of half-rotten leaves at the bottom of each pot, which are used without crocks, and then put the plants in any light rich soil that may come ready to hand—such, for instance as that from the Melon or Cucumber beds, to which is added a little mild rotten manure, beaten up fine, that the whole may be well incorporated together. A good watering then follows, and after they have stood a few hours to drain they are then plunged in any old spare frame, well up to the glass. In doing this leaf soil is used, for, being a good non-conductor, it protects the roots well from frost, and keeps them in a more equable condition as to warmth and moisture than ashes or other material would. By keeping them close for a few days they get nice root-hold, and will then bear the air without flagging, and when they will do this they cannot well have too much unless the weather should be unusually cold and severe. The thing with Cauliflowers is to avoid coddling, as it draws them up tender and weak, and it is only stout sturdy plants that afford fine heads and do not turn in prematurely. If the tops are kept dry during the winter they will bear a good deal of frost, and therefore the best way is to always admit air by tilting the lights behind, as by so doing they are safe from drip and rain, and any watering they may require can be given during a bright sunny day. Before planting out, the practice with ourselves is to draw deep drills at 2 feet apart, in which the plants are placed 18 inches from each other, and at every hoeing that takes place these drills gradually fill in, which gives the plants a chance to root afresh around the collar, and not only this, but, being protected by the slight ridge at each side, they escape cold cutting winds when first turned out, which is much in their favour. To succeed the pot plants we generally depend principally on those we raise from seed sown early in February in boxes, in heat or on slight hotbeds between rows of Potatos, as these are always preferable to any that have been standing about during the winter. *J. S.*

Transplanting Bracken.—Can the common Bracken, Pteris aquilina, be successfully transplanted, and if so, what preparation does the soil require? *J. C., Leigh Park.* [Mr. Fish has given the following directions for a rough-and-ready method of transplanting Bracken:—"Go with a horse and cart and a sharp spade into a thicket of Bracken; proceed to cut out a cartload in large spadefuls, say a foot square and as much deep; cart it to the place you wish it to grow in, empty it out, and spread it about as if the pieces were large clods of earth, turning any of the largest inverted pieces the right way up, and spreading the new material about 6 inches thick, without any particular care of root and stem, and next year you will have a crop of Bracken that will speedily become a thicket. Singular though it seems, this rough mode has been far more successful with me than the most careful digging up and replanting of the roots and stems." EDS.].

Autumnal Blooming Roses.—I can quite endorse what "A. D." says about Niphetos, as one of the best autumnal blooming Roses grown on a wall. It has been fine indeed this autumn. It has rather surprised me to find that neither Mr. Prior nor "Rosa" have named Boule de Neige in their list of autumnal bloomers. It is our first and best hybrid perpetual here, not even excepting La France. "Rosa's" list is so extensive that without at all wishing to discover his or her personality, it would add much to its usefulness if the county—or if that is too definite the district—were given where so many fine Roses were in bloom on September 19. We have the major portion of the Roses specified here, but unfortunately most of them are flowerless. Would "Rosa" also state if the Roses in bloom were standards or dwarfs—young or old plants—if the Teas or Noisettes were on walls or in the open air?—and whether any special culture or treatment had been applied to obtain such a liberal display of Roses towards the end of September? There is nothing wonderful about the others, but that long list of fine hybrid perpetuals in flower on September 19 is rather tantalising. Bourbon Roses not only flower freely in the autumn, but they flower better then than at any other season. This is true of Sir Joseph Paxton and Bourbon Queen, and far more emphatically so of Acidalie and Souvenir de la Malmaison—the two latter, in fact, are hardly worth growing here unless in the autumn—in the summer they mostly come with green hard centres or flowers otherwise deformed, but this autumn every flower is of proper shape, and they are,

especially the latter, different Roses, in fact of great value and beauty. Has any one noticed a similarity of perfume between these two Roses, and is it possible that the Souvenir de la Malmaison is related to Acidalie? No writer on autumnal blooming Roses should omit to name the old pink and crimson Chinas, and so-called fancy varieties of these. When all other Roses fade a few large buds of these hardly ever fail us up to Christmas or the New Year; the colour and forms of these also seem to improve with the cold, and with a few light coloured Teas or Noisettes intermixed these common China Roses are very welcome and showy late in the season. *D. T. Fish.*

—— The lists of perpetual Roses furnished by your correspondents as blooming freely in the autumn are very valuable, and your readers will I am sure carefully note the names thus given. I would not for a moment breathe a suspicion or cast a shadow over the fair fame of a single name in the various lists, I only sigh for the shortcomings and want of ubiquity of the various gentlemen furnishing the said lists of glorious autumn flowers. It grieves me to cast a brand amongst the beauties enumerated. I tender my most profound apologies, and, bare-headed, crave the pardon of Madame la Baronne de Rothschild, of the Royal Princesses, Christian and Beatrice, and the host of other names, "great and good," but the "die is cast," I must be the miscreant to bring a rival amongst "the happy family," and ask an impertinent question. Can any one select from the lists given any Rose which never makes a shoot without flowers and which produces the earliest blooms in the spring and the latest in the autumn, and can they produce a bed 30 feet by 6 feet which at the present time has 1256 full-blown flowers and buds upon it. If they cannot produce this, I can; it is Queen of Bedders (Noble), and may be seen by any one at Sunning late. *Charles Noble, Oct.* 1. [According to our experience, the ordinary hybrid perpetual Roses are not to be named in the same breath with Queen of the Bedders for autumn flowering. Safrano, as elsewhere noted, has been very full of bloom all the autumn at Waltham. Eds.]

Carpet Bedding in Princes Park, Liverpool.—After the thunder showers of July, flowering plants generally hardly ever recovered themselves to give anything like the brilliant effect they promised to do before the stormy weather came on. The flowers and even the plants themselves were so battered with the heavy rains that they never quite recovered themselves to be really attractive as they otherwise would have been, except in a few favoured places. Mr. Mason of Princes Park has, however, prepared a real treat for the thousands of visitors who frequent this favourite resort daily; for, besides the endless varieties of flowering plants employed by him for bedding purposes, he has arranged a plot for carpet bedding which cannot but induce a good many flower gardeners in Lancashire and out of it to follow in his footprints. The foliage beds are still sparkling, while the flowering plants are looking seedy indeed. The plants which appear to be peculiarly adapted to the wet climate of Lancashire are Mentha Pulegium gibraltarica, Lysimachia aurea, Coprosma Baueriana variegata, &c. One or two examples may perhaps convey a better idea of how the arrangement is carried out. An oblong bed that struck me as being very neat had a centre of Lobelia pumila grandiflora with plants of Chamæpeuce diacantha dotted down the centre, next the Lobelia was a band of Lysimachia aurea, then a line of Alternanthera with a raised edge of Echeverias. To save repetition I may state that all the edges of the beds are dressed alike. Another oblong bed had an irregular centre of Alternanthera magnifica, surrounded by Lobelia pumila grandiflora; then a semicircular band of Alternanthera sphathulata, filled in with Mesembryanthemum cordifolium variegatum. Another very imposing example was a Maltese cross formed of Alternantheras and Echeverias on a groundwork of Mentha Pulegium gibraltarica. Another figure of an arrowhead-shape was very beautiful, the centre being Coprosma Baueriana variegata richly coloured, then a band of Cerastium followed by Alternanthera tricolor. These are a few of the most striking examples, but every bed vies with its neighbour as to which shall carry off the palm. *Visitor.*

Wasps and Tomatos.—I remember reading a paragraph on this subject about two years ago, and last summer I planted Tomatos in three compartments of the vinery, placing some plants against both front and back walls. I also potted some, and grew them very fine on the top shelf, in the centre of the house, hoping from all this extra work to be well paid by seeing the crop of Grapes left alone by the wasps. I can only say, however, that it was labour in vain, for the bunches nearest the Tomatos were attacked just as much as those the farthest from them. Last year the crop of Tomatos was very fine, both indoors and out. This year I have trusted to the outdoor crop alone, and up to September 1 the plants were doing well. Just then I saw a few spots on the leaves, just like the Potato blight, I think it must be the same thing [yes]; at all events the crop is destroyed—every plant has perished. I should be glad to know if others have experienced the same with their plants. *R. Inch, Gr. and Bailiff, Hatche Court, Taunton, Somerset.* [We are afraid many growers have suffered loss from the disease this season. With reference to the wasp question, it would be interesting to know the varieties grown, as some sorts emit a much stronger odour than others, and it may be that the wasps do not like the stronger doses. Eds.]

Vegetable Marrow Preserve.—Those attempting to make this will, I think, find that the riper that they have the Marrow the richer will the preserve be. We have always attained the best results by using the Mammoth Gourd, the flesh of which is very thick and fruity, and when made into jam is of the colour of Apricot. We have just cut some of these from the plants grown on a rubbish heap, several of which weigh at least a hundredweight, and if you would like one I shall have great pleasure in sending it. The jam, when flavoured with orange or lemon, is most excellent, and considering what a fine substitute they are for fruit, it is much to be regretted that their value is not more known, that they might form a larger item in the food supply. *J. S.*

Escallonia montevidensis.—In your notice of this plant in the *Gardeners' Chronicle* of September 28, you mention that it is necessary it should be grown against a wall, but judging by own experience such is not the case. Many years since I had a large plant of it growing in the open ground, it was quite 8 feet high, and excited the wondering approval of old Mr. Veitch, the grandfather of the present Chelsea firm. The great frost of 1860 killed it—but it killed also in my garden two standard Magnolias, and many Laurustinus and Bay trees of forty years' growth: the winter was quite an exceptional one. About eight years since I bought another small plant, and planted it in the open ground; it has grown well, without the slightest protection of any kind: it is quite 10 feet high, 6 feet through, and covered with flowers—I counted this morning more than 100 bunches. It is an admirable plant for this season of the year. I notice that butterflies have a peculiar liking for the flowers. *K. K., Tadcaster, Exeter.*

Oncidium macranthum.—A plant of this fine Orchid is now flowering in my show-house, having a spike with fifty-five flowers. This is, I think, an unusual number. But the remarkable fact, as it appears to me, is that one of the branches has eight, two have seven, and three have six flowers. The usual number is three. I have seen one plant with four. But is not the above rare, if not unique? Will any orchidist inform me? *Edward W. Cox, Moat Mount, Mill Hill, N.W., Sept.* 28.

Tuberous Begonias.—No class of plants of late has received so much attention as these, or has met with a greater share of popularity—and deservedly so, for they are the most useful things that can be grown for decorative purposes, affording many shades of colour, and possessing just the habit and appearance to render them attractive. That they will largely replace Pelargoniums there cannot be the least doubt, as they are just at home in the cool temperature of a greenhouse, and as ornaments for the embellishment of windows they are without rivals—the partial shade and over-kind treatment plants generally receive there by way of water just suiting them, as they like their roots when growing to be kept in a constantly moist state. What renders them of double value to amateurs and others short of room is their accommodating habit, for no sooner do they begin to fade and lose their beauty than the tops die down, when they can be stowed away for the winter in a very small compass. This is a great gain, as with the majority of plants grown that is just the time they require the most attention to prepare them for another season, and for at least nine months in the year they are occupying valuable room without making any display in return. Not so, however, with tuberous Begonias, as they may be stood away in any cold frame or laid on their side in pots under the greenhouse stage with perfect safety, so long as they are free from drip or frost. The thing to avoid in wintering them is over dryness, for by keeping them in this state many are lost, as the tubers shrivel up and rot away. More particularly is this the case with any recently purchased or raised from seed, and which are consequently of small size. Larger tubers of a year or two old contain sufficient moisture to keep them moderately plump, but even these start with considerably more vigour in the spring by being kept just in the happy medium of neither wet nor dry. Stood on a damp surface the pots and soil will absorb sufficient to maintain them in this condition without giving any water—a thing to be avoided with all plants of this class when at rest, and there are no leaves to assist in taking it up. As the time is drawing near for tuberous Begonias to be put away, these remarks may be of use, and save some the disappointment of losing them. *J. S.*

The Failure of Cauliflowers.—My experience of the early and mid-season supply of this delicate vegetable entirely coincides with that of Mr. Fish (p. 408). The inferiority and uncertainty of production was indeed remarkable and perplexing, as all varieties shared the same fate. Many heads were abortive, and others were miserably poor and unkind. However, as this deterioration in quality does not apply to the late varieties, such as Walcheren and that grand type of this tribe, Veitch's Autumn Giant, which has become so popular and deservedly prized for its magnificent heads—which, although somewhat later than usual, are now supplying an abundance of compact heads—therefore I am decidedly of opinion that the cause of failure, although somewhat perplexing and subject to be construed variously, is attributable to sudden checks. As the Cauliflower is somewhat tender, being indigenous to a warmer climate than that of England, the plants are too delicate to withstand our severe winters without some slight protection. No vegetable we grow luxuriates more in high cultivation than this does; therefore it is desirable to give them a deeply wrought loamy soil, highly manured, and an abundant supply of liquid manure, judiciously applied—*i.e.*, when the plants are in active growth; this will greatly improve their quality and bulk of production. Any sudden check, from whatever cause, is liable to materially deteriorate their quality; therefore a regular and unrestrained system of culture is most likely to attain the greatest amount of success. I cannot look upon the present season up to August (at least speaking of this locality more particularly) as at all congenial to the requirements of the Cauliflower. Those that were planted out during the latter part of March and April suffered severely from the severity of the weather, excess of heat, and low state of ground temperature, the ground being surcharged with water, which enfeebled vegetation in general, and more particularly tender plants like Cauliflowers, which did not overcome the check. Again, the tropical weather in June and July was unfavourable to their growth. Even Walcheren and Veitch's, which were sown and planted out early, remained for weeks in a transition state, which accounts for their lateness. To these causes and to no other do I attribute the inferiority of our Cauliflowers. Upon the other hand, we are all aware how subject the whole of the Brassica tribe is to degenerate; therefore careful selection of the various varieties is obviously incumbent to ensure anything like success. Still I do not look upon the present failure as at all due to running out or degeneracy of varieties, and I think we may be contented that we possess seed of such quality as will produce as splendid results as have yet been attained; yet I quite hold with Mr. Fish that it would be interesting to know the various experiences upon this question. *G. Westland.*

—— I certainly feel a relief on reading Mr. Fish's account of the failure of Cauliflowers this season. Being a market grower I grow several hundreds yearly, this year I grew about equal quantities of Webb's Mammoth and Veitch's Autumn Giant; of the former I have not cut a single one fit for market—all a mass of broken flower and mixed up together; of the latter I have, although late, cut some remarkably fine ones, and the remainder promise well. I cannot think of any cause, for, as Mr. Fish says, the season seems to have been favourable to the growth; I feel satisfied mine have not had a check throughout. My soil is very deep and rich, each plant occupies 1 yard of land—the Mammoths I gave extra room, being the first year of this kind. I should be very sorry to speak against this Cauliflower any further than I have experienced this year, and plants which I have sold from the same seed bear testimony to the same. Mr. Fish has no complaint, clearly, to make against Veitch's Autumn Giant, except its being late—which is the case with me; and as to the cause I will leave it to more skilful heads to assign what this is. *R. C. E.*

—— The Snowball Cauliflower, grown here for several years, has been remarkably good and true this season, in fact never better. This is a true Cauliflower, and there is no fear that it will be mistaken for a Broccoli. Perhaps Mr. Fish has to deal with a cold soil and climate, but I think his experience of Cauliflowers this season must have been singular. I may add that so early did the heads of the Snowball come that I have already been able to harvest the largest stock of seed from it I have yet had at any time. *A. D.*

—— My experience of Veitch's Autumn Giant Cauliflower is very similar to that of Mr. Fish (p. 408). I only grow that variety and Early London, the latter proving quite satisfactory during the summer. Veitch's Autumn has, however, unaccountably failed to succeed it, but is fully four weeks later than usual. It is now coming on in its true form. *Geo. Fennell, The Gardens, Fairlawn Park, Tonbridge.*

—— I grow from 6000 to 10,000 plants annually of Veitch's Autumn Giant. This year I have tried Eclipse, Harrison's new variety, and find it to be a month earlier than the former. The seeds of both varieties were sown on the same day, and transplanted in the middle of June under the same circumstances. The heads are close, very compact, and beautifully white, and, I think, far preferable to any other variety sent out. Next year I intend to grow nothing else. *Hiram Shaw, Richmond Hill, Sheffield.*

Sutton's Magnum Bonum Potato.—May I ask some of your numerous correspondents if any reason can be given why the Magnum Bonum Potato this year is what may be termed doll-shaped, as the original type has been of an oval shape? I think I am particular in selecting oval seed, but this year mine are very much drawn out. They were grown on deep soil. I admire this Potato for its fine producing qualities and especially so far as resisting the disease, but I hope we shall not have to deplore a change of shape. If good shape is required, and a selection of seed will as a rule remedy the evil, a strict watch will have to be kept lest it deteriorate. Perhaps these few hints may be seen by others situated as I am, and who will kindly give their experience. *R. C. E.*

—— Referring to Mr. T. Draycott's remarks in your issue of the 14th ult., respecting the wonderful cropping properties of this Potato, it may be interesting to some of your readers to know that from ordinary field culture we have just lifted 413½ bushels (10 tons 6 cwt. 3 qr.) of this Potato from exactly 1 acre of land. The tubers are of handsome and uniform size, and the quality excellent, and with the exception of 12 lb. diseased tubers, the crop was perfectly sound. *D. Brinkworth & Sons, Reading.*

Foreign Correspondence.

Villa Taverna, Lago di Como.—In reference to an article which appeared in your columns a short time ago concerning shrubs and herbaceous plants, I venture to add a good word for a few plants particularly worthy of notice for their autumn-blooming qualities. Of this class is the Lagerströmia indica, which at this time of the year forms here tall pyramids of pink flowers of different shades, which are much admired by all visitors to the gardens entrusted to my care, situated on the shores of the lovely Lake of Como. The Abelia rupestris is another charming autumnal bloomer, its masses of flowers completely hiding the leaves. The Anemone japonica is also very decorative in the late season, its beautiful flowers having a striking effect. Here the Olea fragrans (Osmanthus) is thriving in the open air, the sweet perfume of the profuse white flowers extending far over the lake. An old large standard Magnolia grandiflora, supposed to be one of the first of its kind imported into this country, after having freely flowered all through the summer, has still left some of its sweet snowy flowers, which contrast well with the dark green leaves, appearing like diamonds on a bed of emeralds. A great many varieties of Roses grafted on large climbing Banksians, hide tall walls, and afford a never-ending supply of charming flowers, which are useful for the decoration of the drawing-room and the boudoir. Roses are here gathered till about Christmas, when the latest Chrysanthemums are over. *The Head Gardener.*

Canadian Notes.—Our spring this year was remarkably forward and fine for a time, then some cold frosty weather killed a large number of bees; we have since had a very hot summer, the bees have not worked regularly, and the season has not been a productive one. We have an apiarian who keeps a large number, and uses an extractor for taking his honey. The expense we believe is about 14 dollars, and it is an ingenious contrivance to blow out the contents of the comb. The frost alluded to did a great deal of damage to the Grapes and Plums, which we escaped, but one of our Vines is suffering considerable injury from some minute insect—one of an oval shape with a pale yellow body and brown shoulders; another oblong, and yellowish and brownish, with wings; and another, a sort of blight, of a smoky, tawney appearance.

Our Apple crop varies, some being very good, others poor. We have trees well loaded for the first time which were planted fifteen years ago. We find that Apples raised from seed change in their quality, and we have some that last year were very small are now of a good size. I understand this is frequently the case.

Early Potatos, planted, say April 10, were cut down twice with frost. Our crop, put in in June, is very good, and the price in Barrie by the bag of 1¼ bushel, has gone down this week to 40 cents. The Colorado beetle has been very troublesome, but most growers have used Paris green.

Tomatos and Cucumbers are very plentiful, and there is every appearance of an abundance of Citrons, Spinach, and Pumpkins. Hops grown for domestic use are good. Our Sumac trees, for the first time in our recollection were cut by the frost, but have fully recovered, and are now in their usual beauty. *J. M., Minesing, near Barrie, Ontario, Canada, Sept.*, 1878.



Notices of Books.

Ferns in their Homes and Ours. By John Robinson, Professor of Botany and Vegetable Physiology, Massachusetts Horticultural Society, Boston. Salem, Massachusetts: S. E. Cassino. 1878.

This little book of 178 pages forms the first of a series of volumes under the title of the *American Natural History Series*. The writer does not profess to advance any new idea regarding classification or arrangement of Ferns, the *raison d'etre* of the book being to increase a love of these plants among intending cultivators. The Fern collections in this country, as well as English literature on the subject, are referred to as follows:—"Besides the large collections of famous public institutions, there have been and are many private collections of Ferns in England which rival and even surpass them. The competition is there so keen in obtaining fine specimens of rare Ferns, that as much as fifty guineas (250 dols.) has been paid for a single plant. It is not, therefore, to be wondered at, that in countries where Ferns have so long been under cultivation numerous works upon the subject of their structure, growth, and culture have appeared." The several chapters deal with the "Life of a Fern," classification, distribution, soils, and some practical instructions are given regarding the construction of Fern cases, and a chapter also on "Fern pests." The book is well and carefully got up.

Clavis Synoptica Hymenomycetum Europæorum conjunctis studiis scripserunt. M. C. Cooke et L. Quelet. Hardwicke & Bogue. 1878.

A complete list of the species of the higher fungi of Europe, with short diagnostic characters and references to authorities and figures.

Publications Received.—The Gardener.—Journal of Forestry.—Monatsschrift des Vereines des Gartenbaues (Berlin).—Heroes of Britain, part i. (Cassell).—Leopold Shakespeare, part i. (Cassell).—Villa Gardener.

Florists' Flowers.

The Carnation and Picotee.—In the Babel of tongues which have recently been ringing in our ears in connection with these flowers, I am sure the Editors of the *Gardeners' Chronicle* share the satisfaction with which I am able to announce the purpose of a very considerable number of friends, stimulated thereto by the action of the National Carnation and Picotee Society, to commence their cultivation, and as the time at my disposal is wholly inadequate separately to advise these friends, the Editors will kindly grant me space to offer the few remarks needed, all the more that these remarks may be of service to some young brother beyond those known to me.

In the first place we must remember the present is foundation work, and on its well or ill doing will depend all after-results. No time for getting in the plants is like the period from September 20 to October 20. Between these dates the plants may be sent hundreds of miles if suitably packed, and from very wide extremes of situation, without injury, and with the certainty that they will speedily accommodate themselves to their altered circumstances. But to ensure successful after-results there must be no lack of attention after their receipt. Unfold them from their packing, which should be of perfectly clean moss; make a clean cut of the portion below the root of the layer, clear away the leaves or increase from such joints as would of necessity be placed below the soil (this is most important, as nothing so surely promotes gout or canker as the lodging of wet earth in the axils of the leaves); brush with an ordinary small painter's brush all dust or dirt from the leaves and the axils of the leaves, every sign of greenfly most especially, and then plant in perfectly clean 3-inch pots, well drained, every plant separately; place in a cold frame, or, if such can be commanded, in very gentle bottom-heat, until the plants have drawn root. Then give air freely day and night, guarding carefully from heavy winds and saturating rains. Study the plants, and the cultivator will soon learn their language, and accurately interpret their wants. Whoever does this, watching and lovingly aiding the plants step by step in their stages of development, will come to the bloom with an appetite for and a power of enjoyment of the delight then to be realised quite beyond words to express, and he will have a supreme unconcern for carping critics, who in their complete ignorance of the marvels of the flower presume to say this practice is dishonest, and that distortion.

The soil should mainly consist of a good sound fibrous loam, unctuous in its character, with a little perfectly sweet leaf-mould and enough sharp sand to allow water to freely permeate and pass through the whole mass.

My friend Mr. George Rudd, in his "Notes on the Bloom of 1878," *vide* p. 380, has given a list of most of the better varieties in cultivation, therefore I need not repeat them here. In speaking of Squire Meynell, purple-flake, I note my friend remarks:—"Mr. Dodwell calls this Squire Trow (not Tom), which with me is altogether distinct." Perhaps, to avoid any confusion in the future, I may be allowed to explain. I merely call the variety sent to me by my good friends, Mr. Rudd and Mr. Simonite, as Squire Meynell, Squire Trow, because it undoubtedly is so; and the fact that Squire Trow came to me from gentlemen so experienced led me to assume that Squire Trow was doing duty in some directions in Yorkshire as Squire Meynell. *E. S. Dodwell, Sept.* 25.

The Villa Garden.

Chrysanthemums in Pots.—The Villa gardener who has grown a few Chrysanthemums in pots with which to furnish his greenhouse in autumn, when the incursions of frost have desolated his garden and left unscathed but very little indeed in the way of flower, will soon begin to reap the reward of his attentions and labours. The buds are showing and "plumping up," as the growers say, and if the plants have been well watered and syringed overhead they will be laden with clean healthy foliage, and when they are in this condition a good promise of bloom can scarcely fail to follow.

On the whole it has been a pretty good season for Chrysanthemums in pots. The weather has been both mild and moist—a condition of things which, if plants may be said to have preferences, they like. In such weather they grow fast, make roots rapidly, and require close attention that they do not become too much pot-bound. It is one of the great secrets of success with Chrysanthemums that they be kept moving on easily while the plants are making their growth: shifting at the right time, keeping the shoots thinned out, cutting back the growths that come up so freely from the roots, and finally tying out the shoots to admit a free circulation among the branches. There is scarcely another plant that feels a check from drought or want of food at the roots as does the Chrysanthemum. The foliage low down decays, and it is not again replenished during the season, the plants acquire a naked and unfurnished appearance, which spoils them to a great extent as conservatory plants. It is because the best enjoyment can be got out of well bloomed well flowered plants that we constantly urge the Villa gardener to

grow his plants as well as possible, that his pleasure in them may be large and satisfying.

We have this season grown about twenty plants of Chrysanthemums, and they are now in their blooming pots, 8 inches in diameter. They were shifted twice only, but not permitted to become pot-bound between the shifts. As there was no convenience for plunging the plants—which is always a great assistance to the plants and a great aid to the grower—they were stood along by the side of a garden walk in a position where, while the sun shone on the plants, it did not fall nearly so much on the pots. They have been kept well watered (sometimes four and five times a day during dry hot weather, so exacting is the Chrysanthemum in this respect), and frequently syringed overhead. The plants when they had filled the pots with roots were treated to a little of Amies' manure as a top-dressing, gently stirring the soil first, laying a dessert-spoonful of manure over the surface and watering it in; and, as the roots kept creeping to the surface, the plants were, a short time since, mulched with well-rotted manure, much as orchard-house trees are mulched. They can scarcely fail to look well.

If not already done, the main shoots should be tied out singly to stakes; and the sooner this is done the better, because there is a danger of rubbing off the buds. Even after the plants are mulched it is well to give a little liquid manure occasionally, though by pouring in water over the manure some fertilising particles are certain to be carried down to the roots. The plants must be looked over occasionally, as caterpillars will sometimes fasten on them and devour the leaves; a disfigurement of this character robs the plants of a good appearance in the conservatory. Little green grubs are apt to regard the clusters of buds as their freehold for foraging purposes, and do great harm if not detected and expelled; while earwigs fix themselves in possession and work their quota of harm. It is here that little attentions come into play, and it is by reason of an early observance of these that the plants are steered safely through the sea of troubles that beset them into the haven of the greenhouse or conservatory, there to develope a fine and enjoyable head of bloom.

If the Villa gardener would have a select few fine in preference to a larger number of smaller flowers, he must disbud, thinning them out so that there may be ample space for those left to unfold and multiply their petals. Those who grow the Chrysanthemum for exhibition remove all the buds except the one in the centre of each branch. This is always the largest and plumpest bud, and the wisdom of leaving it and taking out all the smaller ones will be at once apparent. By disbudding in this way there will be quite enough flower-buds left to make a good head of bloom, and the grower will reap his reward in finer and more perfect flowers. It is better, we think, to have a good bloom at the head of a shoot than three small ones so crowded together that neither can display itself to the best advantage. Our remarks on disbudding are intended to apply to the large-flowered varieties, but as almost every Chrysanthemum grower has a few Pompon varieties in his collection we may state that it is not necessary to disbud so freely in this case. Nice clusters of four or five flowers help to make a good head of bloom.

On the whole we think that Chrysanthemums grown in pots are disposed to flower early this season. The present mild open weather keeps the plants active, and the flower-buds are swelling off quite fast. It is only by keeping the plants out-of-doors, and syringing them freely, that they can be kept at all backward. We want Chrysanthemums in bloom in November, for they bring up the rear of the floral succession that from January to December gladdens the face of the earth with numberless forms of beautiful flowers, and by contrast to the gloom without gives life and brightness within.

The Villa gardener need not be in a hurry to get his plants within-doors, so long as they are safe from frost; but if frost threatens then house at once. If by keeping them too long in the open air there is a danger of delaying the expansion of the flowers beyond a certain time, housing is then usually necessary. By obtaining a few early-flowering varieties to form part of the collection grown, and getting these housed early, a succession of bloom can be had extending over two months or more; so, when the autumn is passed and the winter has begun, some dashes of colour may yet stand out against the gloom and last till the earliest flowers to bloom in the new year hold up their pleasant faces to greet the light in the sky above.



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, OCT. 2, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32°.	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest.	Lowest.	Range	Mean for Day	Departure of Mean from Average of 60 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
Sept. 26	29.85	+0.10	60.2	42.4	17.8	49.7	— 5.0	41.7	74	W.NW. W.	0.00
27	29.92	+0.18	61.5	43.5	18.0	52.6	— 2.0	46.6	81	WSW. S.W.	0.00
28	29.91	+0.19	65.3	53.2	12.1	58.5	+ 4.0	56.1	88	W.	0.00
29	29.80	+0.09	65.5	51.0	14.5	56.3	+ 1.9	54.8	95	Calm: WNW. W.	0.00
30	29.59	—0.12	65.9	51.1	14.8	56.6	+ 2.3	48.9	76	WNW.	0.11
Oct. 1	29.92	+0.22	62.8	47.2	15.6	53.2	— 1.2	49.6	88	WNW. S.W.	0.03
2	30.12	+0.43	62.1	39.9	22.2	49.5	— 4.7	45.8	87	N.E.: S.S.E.	0.00
Mean	29.87	+0.16	63.3	46.9	16.4	53.8	— 0.7	48.9	84	variable	sum 0.14

Sept. 26.—Dull till 11 A.M., fine and bright after. Cloudless at night. Cold. Fog in morning.
— 27.—Fine morning. Overcast and dull after. Few drops of rain at times.
— 28.—Overcast till 10 A.M., fine, bright, and pleasant after. Cloudy at night. Warmer.
— 29.—A very fine warm day. Fog in morning. Sky overcast at night.
— 30.—A fine partially cloudy day. Smart rain fell at 6 A.M. Overcast at night.
Oct. 1.—Fine till noon. Very dull and cloudy after. A little rainfall after 7 P.M.
— 2.—A fine bright day, partially cloudy. Overcast at night. Cold.

LONDON: *Barometer.*—During the week ending Saturday, September 28, in the suburbs of London the reading of the barometer at the level of the sea decreased from 30.17 inches at the beginning of the week to 29.47 inches by the afternoon of the 23d, increased to 29.77 inches by the evening of the 24th, decreased to 29.67 inches by the afternoon of the 25th, increased to 30.13 inches by the morning of the 28th, and was 30.08 inches at the end of the week. The mean reading for the week at sea level was 29.85 inches, being 0.06 inch below that of the preceding week, and 0.09 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 65½° on the 28th to 57½° on the 22d; the mean value for the week was 60°. The lowest temperatures of the air observed by night varied from 37¾° on the 24th to 53½° on the 28th; the mean for the week was 44½°. The mean daily range of temperature in the week was 15¾°, the greatest range in the day being 20° on the 24th, and the least 11½°, on the 22d.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—22d, 51°.3, — 4°.; 23d, 50°.1, — 5°.1; 24th, 46°.1, — 8°.9; 25th, 50°.9, — 3°.9; 26th, 49°.7, — 5°.; 27th, 52°.6, — 2°; 28th, 58°.5, + 4°. The mean temperature of the air for the week was 51°.3, being 3°.6 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 103° on the 26th, 95° on the 23d, and 94¾° on the 27th; on the 22d the reading did not rise above 67°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 31½° on the 24th, 35° on the 23d, 26th and 27th, and 36° on the 25th. The mean of the seven lowest readings was 37¾°.

Wind.—The direction of the wind was variable, and its strength gentle. The weather during the week was dull and cold, and the sky was cloudy. Solar halos were seen on the 24th and 28th.

Rain fell on three days during the week; the amount collected was 0.22 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, September 28, the highest temperatures of the air observed by day were 68° at both Truro and Sunderland, 67¼° at both Brighton and Bristol, 67½° at Leicester, and 66¼° at Norwich; the highest temperature of the air at Bradford was 59°, and at Hull and Leeds was 61°; the mean value from all stations was 65°. The lowest temperatures of the air observed by night were 33¾° at Nottingham, 34° at Cambridge, 34½° at Bristol, and 34¾° at Eccles; the lowest temperature of the air at Liverpool was 46°, and at Sunderland was 44°; the mean from all stations was 38½. The range of temperature in the week was the greatest at Bristol, 33¼°, and the least at Liverpool, 15½°; the mean range from all stations was 26½°.

The mean of the seven high day temperatures was the highest at Truro, 63°, Brighton and Sunderland, both 62⅜°, and Bristol, 62½, and the lowest at Bradford, 56½°, and Wolverhampton and Hull, both 58°; the general mean from all stations was 60°. The mean of the seven low night temperatures was the lowest at Nottingham, 42½°, Eccles, 42°, Cambridge, 43°, and Leicester and Wolverhampton, both 43½, and the highest at Liverpool, 50½°, and Truro, 48⅔°; the mean value from all stations was 45°. The mean daily range of temperature in the week was the least at Liverpool, 7½°, and the greatest 18°, at both Bristol and Nottingham; the mean daily range from all stations was 15°.

The mean temperature of the air for the week was 51½°, being 2° higher than the value for the corresponding week in 1877. The highest were 54½° at Truro, 53⅜° at Sunderland, and 53° at both Brighton and Liverpool; and the lowest were 49½° at Nottingham, and 49½° at Wolverhampton, Eccles, and Bradford.

Rain fell on every day in the week at Liverpool and Eccles. The heaviest falls were at Liverpool, 2.25 inches, Eccles, 1.62 inch, and Bradford, 1.18 inch, and the least falls were at Brighton, 0.09 inch, Cambridge, 0.20 inch, and Blackheath, 0.22 inch; the average fall over the country was 0.85 inch.

The weather during the week was generally dull and cool, and the sky cloudy.

A thunderstorm occurred at Hull on the 23d.

A solar halo was seen at Bristol on the 28th.

SCOTLAND: *Temperature.*—During the week ending Saturday, September 28, the highest temperatures of the air observed by day varied from 63° at Glasgow to 57° at Greenock; the mean value from all stations was 60°. The lowest temperatures of the air observed by night varied from 39° at Perth to 44° at Glasgow; the mean from all places was 41⅜°; the mean range of temperature in the week was 18½°.

The mean temperature of the air for the week from all stations was 51¼°, being ¼° below the value for the corresponding week in 1877. The highest was 52½°, at Glasgow, and the lowest 50°, at Greenock.

Rain.—The heaviest falls of rain were 1⅜ inch at Greenock, and 1¼ inch at Aberdeen, and the least fall was three-fourths of an inch at Perth; the average fall over the country was one-eleventh of an inch.

DUBLIN.—The highest temperature of the air was 67°, the lowest 38°, the range 29°, the mean 53⅜°, and the fall of rain 0.48 inch.

JAMES GLAISHER.

Variorum.

SOIL EXHAUSTION AND ITS REMEDY. — The American National Agricultural Congress held its ninth session at New-Haven, Conn., at the end of last month, when Dr. J. T. Tichenor, President of the Alabama Industrial University, addressed the meeting concerning soil exhaustion and its remedy. He pictured eloquently the wealth of soil resources of the American continent, and the enormous waste by careless and reckless management. He showed how the maximum yields of Cotton had gradually gone westward from Georgia to Texas; of Wheat, from the Genesee to the Pacific; and of other crops in the same direction, as waste had carried exhaustion westward. He calculated that the commercial value of fertilising material withdrawn annually by crops amounts to 1,000,000,000 dols., and that the waste by washing and otherwise is immense. He pictured the desolation of Spain, of Palestine, from destruction of the soil, contrasted with the annual renewal of Egyptian fertility by the overflow of the Nile, and warned his countrymen of coming exhaustion. He referred to the beneficence of the systems of fertilisation of China and Japan, and earnestly urged the pulpit, Press, and all educational agencies to aid in forming a public sentiment that would provide a remedy.

THE BEST MANURES FOR CRANBERRIES.—The sixth annual convention of the New Jersey Cranberry Growers' Association was recently held in Bricksburg, and the *New York Tribune*, reporting the proceedings, says:—"It appeared from the discussion that Peruvian guano, bonedust, and land plaster are the best fertilisers yet applied to Cranberries. They had been tried by various farmers with varying results, bonedust being the choice, as a rule, of the three named. Estimates from nearly all the Cranberry growing districts of the State were canvassed, from which the conclusion was reached that the crop of this year will be about half that of 1877.

Enquiries.

He that questioneth much shall learn much.—BACON.

CLAY'S FERTILISER. — Will any gardening friend kindly inform me, through the *Gardeners' Chronicle* correspondence, what are the results of Clay's Fertiliser? *W. Robinson, gr., High Road, Tottenham.*

THE VALUE OF LIME TIMBER.—I shall be glad to hear the opinion of any of your correspondents as to the probable profit attending growing Lime trees for timber. It is proposed to plant some with Larch in the proportion of one in twenty-five. *William Foster.*

Answers to Correspondents.

BOOKS: *Coniferæ.* Fraser's *Handy Book of Ornamental Conifers*, &c. (William Blackwood & Sons).

CHEAP FRUIT: *B. H., Brixton.* Short weight does not explain the reason why costermongers can, and habitually do, undersell shopkeepers. Both buy at the same market, and in a general way pay the same prices, but if there is an advantage to be got, we believe the "coster" generally gets it, because he can wait until the price suits him, and he buys nothing that he knows, from experience, he cannot sell in the locality in which he trades. The shopkeeper most generally has a high rent to pay, heavy local rates, gas bills, and an income tax to meet. The "coster" knows none of these things; besides, his is a ready-money trade, and his customers are not expected to contribute to the liquidation of bad debts, as ready-money customers too often have to do when they enter a shop. These are not all the reasons that could be named. As to the matter of short weight, we do not believe there is more dishonesty in that respect amongst "costers" than amongst tradesmen; and though your "coster" may be personally noisy and dirty, he belongs to a shrewd and very useful class, and nine times out of ten is not a bad fellow at the bottom.

COFFEE CULTIVATION: *T. K.* See p. 351, in the number for September 14. You will find a good deal of information on the cultivation of Coffee in Simmonds' *Tropical Agriculture* (London: E. & F. N. Spon).

COLEUS: *J. T. S.* The Coleus does not like cold or damp, and consequently should be kept in the stove, or a warm greenhouse, through the winter, and be watered very sparingly. Cuttings will strike in heat freely enough in the spring.

FUNGI: *G. Edwards.* A species of Clavaria. We will give you the name next week.

INSECTS: *Hortus.* The grubs are the destructive omnivorous caterpillars of the moth, Agrotis segetum, illustrated in our pages some years ago. As the caterpillars sent are nearly full-grown, little more mischief may be expected from them; but those of smaller size should be carefully sought for at the roots of plants as soon as their drooping appearance shows the presence of the enemy. When full-grown they go into the chrysalis state in the ground, which should be well turned over and broken, and left to the ducks, which feed on the grubs greedily. *I. O. W.*

NAMES OF FRUIT: *J. Le Cornu, Jersey. Apples:* 2, probably White Calville; 6, Barcelona Pearmain; 7, Regnier; others not recognised. — *William Francis. Apples:* 1, small Dumelow's Seedling; 2, Golden Pippin; 6, Franklin's Golden Pippin; others not recognised.

NAMES OF PLANTS: *Connon & Reid.* Eupatorium glechomiphyllum.—*D. C. Powell.* Polygonum cuspidatum.—*W. P.* 1, Cyathea dealbata; 2, Cyathea Smithii; 3, Alsophila australis; 4, Dicksonia antarctica.—*T. Girvan.* Osmunda regalis cristata.—*T. W.* Tricyrtis japonica, Miquel, commonly called in gardens Tricyrtis hirta.—*Markree.* We cannot undertake to name plants from leaves only.—*H. F.* Eryngium pandanifolium.—*W. H. M.* Osmanthus ilicifolius.—*G. B.* Cymbidium giganteum.—*H. M. E.* Jasminum grandiflorum, a native of the East Indies.—*C. E. F.* Hieracium umbellatum.—*W. Rea.* Godetia Lady Albemarle; Portulaca grandiflora.—*H. Harpur-Crewe.* Cotoneaster Nummularia.

ROSES: *G. H. B.* It is not desirable to remove the briers so soon after budding; better let them grow, and transplant next year. You can, if necessary, remove Rose trees two years in succession any time during open weather in winter—say November or February by preference.

SCAMMONY: *C. E. B.* The plant supplied you for Scammony is Mikania scandens.

THOUSAND-HEADED KALE: *J. Shand.* We know little or nothing about this variety, but understand that it is usually sown in August, and planted out as a farm crop, for feeding stock, in April and May.

VINE: *E. Denny.* Your Vine leaf is very much infested with thrips.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal

ERRATA: PEZIZA CRUCIFERA. — The following corrections should be made in the lettering of the figures at p. 397 of our last issue:—For "3 and 7, portions of the hymenium, read "5 and 6, portions of the hymenium;" for "5, a group of hairs from the cup," read "7, a group of hairs from the cup;" for "6, hairs from the stem," read "3, hairs from the stem."

CATALOGUES RECEIVED:—Messrs. Dick Radclyffe & Co. (129, High Holborn, London, W.C.), Catalogue of Dutch Flower Roots, Horticultural Requisites, &c. —Messrs. Hooper & Co. (Covent Garden, London, W.C.), Autumn Catalogue of Bulbs, &c.—Messrs. W. Paul & Son (Waltham Cross, Herts), Catalogue of Roses; also Catalogue of Roses, Fruit Trees, Evergreens, &c. — M. Baudriller (a Gennes, Maine et Loire, France), General Catalogue of Fruit Trees, Vines, Plants, &c. — Lorenzo Racaud (Frente á la Puerta de Santa Engracia, Zaragoza), General Catalogue of Vegetables and Flower Seeds, Plants, Trees, &c.—P. Sebire (Ussy, pres Falaise, France), Catalogue of Plants, Bulbs, &c.—L. Jacob-Makoy et Cie. (a Liége, Belgium), Catalogue of New Plants, Orchids, Azaleas, Camellias, Rhododendrons, Fruit Trees, &c. —William Potten (Sissinghurst, Staplehurst, Kent), List of Roses, Fruit Trees, Evergreens, Bulbs, &c.— J. B. A. Deleuil (Rue Paradis, Marseille), Catalogue of Amaryllis, Tuberous Begonias, Agaves, &c.—James Bromwich (25, Buckingham Palace Road, Belgravia, S.W.), Descriptive Autumn Catalogue of Bulbs, Seeds, Plants, &c.

COMMUNICATIONS RECEIVED.—T. S. J.—T. B.—W. W.—J. D. —W. G. S.—J. M.—S. G.—W. D. P.—J. L.—J. W.— —R. D.—H. E.—W. G.—P. J. P.—R. McK.—C. I. (thanks). J. N.—J. S. T.—H. B.—S. & S.—H. F.—F. C. & Co.— J. S.—H. H. C.—J. T. B.—T. H.—E. P.—G. S.—W. H. F. —H. M.

Markets.

COVENT GARDEN, October 3.

Our market has been very quiet during the week, the supply of Apples being short; but, with trade dull, prices have not improved. Supplies from the Continent are coming short. Kent Cobs remain the same. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1	6–4 0	Melons, each	1	0–3 0
Figs, per dozen	1	0–3 0	Peaches, per dozen	6	0–15 0
Filberts, per lb.	0	8–1 0	Pears, per doz.	2	0–6 0
Grapes, per lb.	0	9–6 0	Pine-apples, per lb.	2	0–6 0
Lemons, per 100	10	0–18 0	Plums, ½-sieve	2	0–5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English			Horse Radish, p. bun.	4	0– ..
Globe, doz.	2	0–4 0	Lettuces, Cos, Eng.,		
Beans, French, lb.	0	4–0 6	per score	1	6–2 6
— runners, p. bush.	4	0–6 0	Mint, green bunch	0	4–0 6
Beet, per doz.	1	0–2 0	Onions, young, bun.	0	4–0 6
Cabbages, per doz.	1	0–2 0	Parsley, per bunch	0	4– ..
Carrots, per bunch	0	4–0 6	Radishes, per bunch	0	1–0 3
Cauliflowers, per doz.	2	0–3 0	— Spanish, doz.	1	0– ..
Celery, per bundle	1	6–2 0	— New Jersey, doz.	2	0– ..
Chilis, per 100	5	0– ..	Shallots, per lb.	0	6– ..
Cucumbers, each	0	4–1 6	Spinach, per bushel	2	0–3 0
Custard Mar., doz.	3	0– ..	Tomatos, per dozen	2	6–3 0
Endive, Batav. dozen	1	6– ..	Turnips, new, p. bun.	0	6– ..
Garlic, per lb.	0	6– ..	Vegt. Marrows, doz.	2	0– ..
Herbs, per bunch	0	2–0 4			

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6– 1 0	Myosotis, 12 bun.	3	0– 6 0
Asters, 12 bunches	3	0– 9 0	Pelargoniums, 12 spr.	0	9– 1 6
Bouvardias, per bun.	1	0– 4 0	— zonal, 12 sprays	0	4– 1 0
Calceolaria, 12 bun.	4	0–12 0	Phlox, 12 bunches	6	0–12 0
Carnations, 12 bunch.	4	0–12 0	Primula, double, per		
Cornflower, 12 buu.	2	0– 6 0	bunch	1	0– 2 0
Dahlias, 12 bunch	3	0– 9 0	Pyrethrum, 12 bun.	3	0– 6 0
Delphinium, 12 bun.	6	0–12 0	Roses (indoor), doz.	1	6–12 0
Eucharis, per doz.	3	0–12 0	— (outdoor), 12 bun.	3	0–12 0
Gardenias, 12 blms.	3	0– 9 0	Spiræa, 12 sprays	1	6– 4 0
Gladioli, various, 12			Stephanotis, 12 sp.	3	0– 9 0
spikes	1	0– 4 0	Sweet Peas, 12 bun.	2	0– 6 0
Heliotropes, 12 sp.	0	6– 1 0	Sweet Sultan, 12 bun.	6	0– 9 0
Jasmine, 12 bunches	4	0– 6 0	Tropæolum, 12 bun.	1	0– 3 0
Mignonette, 12 bun.	2	0– 6 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz.	4	0–12 0	Foliage Plants, vari-		
Begonias, per doz.	4	0–12 0	ous, each	2	0–10 6
Bouvardias, do	9	0–24 0	Fuchsias, per dozen	3	0–12 0
Calceolarias, p. doz.	6	0–12 0	Mignonette, per doz.	3	0– 9 0
Chrysanth., per doz.	6	0– 9 0	Musk, per dozen	2	0– 6 0
Coleus, per dozen	3	0– 9 0	Myrtles, per doz.	4	0–12 0
Cyperus, do.	6	0–12 0	Palms in variety,		
Dracæna terminalis	30	0–60 0	each	2	6–21 0
— viridis, per doz.	18	0–24 0	Pelargoniums, scar-		
Euonymus, various,			lets, zonal, doz	2	6– 6 0
per dozen	4	0–18 0	Petunias, per dozen	4	0–12 0
Ferns, in variety, per			— Fairy, per doz.	9	0–12 0
dozen	4	0–18 0	Vallota, per doz.	9	0–24 0
Ficus elastica, each	2	6–15 0			

SEEDS.

LONDON: *Oct.* 2.—A quiet tone continues to characterise the trade for farm seeds. Several more samples of the new American Clover have now come to hand, but these with scarcely an exception exhibit a disappointing quality. Probably some finer parcels will presently be offering; when such are forthcoming, and when values in the States have somewhat settled down, a certain amount of buying here may be expected. Our cable advice of to-day quotes an advance in Chicago of 1*s.* per cwt. As regards the seed crops of Germany and France no new feature presents itself. There will without doubt be a large quantity of English seed, but as to the quality thereof, varying opinions prevail. Trefoils are neglected: prices, however, keep steady. With respect to Alsike the tendency of quotations is slightly downwards. White Clover is without alteration. Winter Tares meet a dull sale on rather easier terms. In order to clear out of Trifolium holders seem not unwilling to make some moderate concession. The recent sales of new white Mustard amount altogether to about 5000 quarters; owing to increased deliveries and the condition coming worse, the manufacturers are now obtaining some abatement from the opening figures. Rape seed is scarce and firmer. Of new blue Peas, the supply this week shows a large increase, a fact which is probably explained by the approach of rent day, and the consequent desire on the part of farmers to realise. Peas at the present rates bringing in more cash than most other kinds of produce. The Canary seed market is inactive, but rates are unchanged; some new English has this week been sold in Mark Lane. New Dutch Hemp seed now offers. The yield of Buckwheat in France is said to prove very abundant. *John Shaw & Sons, Seed Merchants,* 37, *Mark Lane, London, E.C.*

CORN.

There was a fair supply of home-grown Wheat on sale at Mark Lane on Monday. Good and fine dry qualities of produce were scarce, and held at full prices; for inferior parcels trade was slow at about late rates. Foreign Wheat was a good supply, and a somewhat increased amount of business was transacted. Choice qualities were held at fully late rates. Fine malting Barley was scarce, and held at last currencies; medium and inferior qualities were in slow request at the previous Monday's figure. Malt of good and fine quality realised full terms. Sound Indian corn was scarce, and as dear as last reported; ordinary parcels changed hands at irregular quotations. Oats were steady on former terms; Beans were held at full prices; Peas sold slowly at about late rates; the flour trade was quiet at the recent decline in prices.—On Wednesday there was a fair supply of Wheat; choice qualities were held at full prices, but medium and inferior produce was dull, and some was disposed of at very low quotations. Good and fair parcels of foreign Wheat were in fair demand at full prices. Good and fine malting Barley was scarce, and was held at full rates, but grinding Barley was a slow sale on former terms. Oats were unchanged in value. Sound Indian corn was scarce, and was quite as dear, inferior sold at irregular quotations. Beans realised full prices, but Peas were a slow sale. The flour trade was without material change in prices.—Average prices of corn for the week ending September 28:—Wheat, 41*s.* 5*d.*; Barley, 43*s.* 1*d.*; Oats, 22*s.* 10*d.* For the corresponding period last year:—Wheat, 56*s.* 5*d.*; Barley, 43*s.* 11*d.*; Oats, 25*s.* 3*d.*

CATTLE.

At Copenhagen Fields on Monday, although the number of beasts was very much smaller than on the previous Monday, the trade was so dull that higher prices could not be obtained. There were not quite so many sheep, yet fully equal to the demand, which was very limited, and prices on the average were lower. There was very little alteration in the calf trade. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 8*d.*, and 5*s.* 2*d.* to 5*s.* 8*d.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 4*s.* 10*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 10*d.*; pigs, 4*s.* to 5*s.* 4*d.*—On Thursday about an average supply of beasts and sheep were on offer. Beasts met a dull sale at about Monday's prices, but sheep, especially choice breeds, were steady. Calves and pigs were inactive.

HAY.

Tuesday's Whitechapel report states that there was only a moderate supply of fodder on offer, and trade ruled quiet. Straw was quoted at a decline. Quotations:—Prime Clover, 100*s.* to 120*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 80*s.* to 88*s.*; inferior, 40*s.* to 70*s.*; and straw, 40*s.* to 42*s.* per load.—On Thursday there was a rather large supply. The trade was dull, at about late rates. Annexed are the quotations:—Prime Clover, 100*s.* to 120*s.*; inferior, 90*s.* to 100*s.*; prime meadow hay, 80*s.* to 88*s.*; inferior, 40*s.* to 70*s.*; and straw, 35*s.* to 42*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 92*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; superior Clover, 120*s.* to 132*s.*; inferior, 90*s.* to 105*s.*; and straw, 46*s.* to 52*s.* per load.

POTATOS.

The reports from the Borough and Spitalfields markets state that they have been well supplied, and there was a fair demand for most descriptions at the subjoined currency. There has been also a large arrival of foreign Potatos in sound condition. Kent Regents, 90*s.* to 110*s.* per ton; Essex ditto, 50*s.* to 90*s.*; Champion, 75*s.* to 85*s.*; rocks, 65*s.* to 85*s.*; Early Rose, 90*s.* to 120*s.*; kidneys, 100*s.* to 110*s.*

COALS.

Business at market on Monday was quiet at the last quotations. Wednesday's trade was brisk, at the following currencies:—Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 16*s.* 3*d.*; Lambton, 17*s.*; Original Hartlepool, 17*s.* 6*d.*; Wear, 15*s.* 6*d.*; South Hetton, 17*s.* 6*d.*; Chilton Tees, 16*s.* 6*d.*; Thornley, 17*s.*; Tees, 17*s.* 3*d.*

GOLDEN EUONYMUS.—Broad and narrow leaved varieties, nice bushy plants, well rooted and of bright colour, 4 to 6, 6 to 9, and 9 to 12 inches.

Lowest cash price per 100 or 1000 on application to

DAVID SCOTT, Nurseryman, Chichester.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narciss, 10*s.* per bushel, 6*s.* per half-bushel, 3*s.* 6*d.* per peck. Likewise Bulbs of LILIUM BULBIFERUM, 15*s.* per 100, 2*s.* 6*d.* per dozen. Terms cash with order. Package free. Post-office Orders payable at Vauxhall Cross.

Mrs. ALDERSON, Langley Lane, South Lambeth, Surrey.

Special Offer.

JAMES CYPHER begs to offer the under-mentioned, to make room for other Stock :—

ADIANTUM CARDIOCHLÆANA, 4 feet 6 inches high, 6 feet wide, £4, 4*s.*

„ TENERUM, 3 feet 6 inches high, 3 feet 6 inches wide, £2 2*s.*

„ TRAPEZIFORME. 4 feet high, 5 feet wide, £4 4*s.*

„ FARLEYENSE, 3 feet high. 4 feet wide, £5 5*s.* ; good young specimens in 15-inch pots, £2 2*s.*

DAVALLIA MOOREANA, 3 feet 6 inches high, 5 feet wide, £3 3*s.* ; good young specimens in 15-inch pots, £2 2*s.* ; young stuff, 24*s.* per dozen.

GLEICHENIA DICHOTOMA, 4 feet high, 4 feet wide, £5 5*s.* ; nice young specimens, £2 2*s.* ; small plants from 5*s.* each.

„ RUPESTRIS GLAUCESCENS, 3 feet 6 inches high, 3 feet 3 inches wide, £8 8*s.* ; 3 feet 3 inches high, 3 feet 3 inches wide, £8 8*s.* ; 3 feet high, 3 feet wide, £6 6*s.*

CIBOTIUM PRINCEPS, spread of fronds, 12 feet, £3 3*s.*

CYATHEA MEDULLARIS. 7 feet by 12 feet. £3 3*s.*

MARTENEZIA GRANATENSIS, 8 feet by 8 feet. £4 4*s.*

LATANIA BORBONICA. 8 feet by 10 feet, £4 4*s.*

DENDROBIUM DEVONIANUM, 3*s.* 6*d.* to 5*s.* each.

„ CRASSINODE, 7*s.* 6*d.* to 10*s.* 6*d.*

„ FIMBRIATUM OCULATUM, 5*s.*, 7*s.* 6*d.*, 10*s.* 6*d.*

„ SUAVISSIMUM, 10*s.* 6*d.*, 14*s.*, 21*s.*

„ CHRYSOTOXUM, fine plants, 10*s.* 6*d.*, 21*s.*

VANDA CŒRULESCENS, 5*s.*, 7*s.* 6*d.*

PHALÆNOPSIS GRANDIFLORA, 10*s.* 6*d.*, 21*s.*

Exotic Nursery, Queen's Road, Cheltenham.

PAUL'S NURSERIES,

WALTHAM CROSS.

SPECIALITIES.

ROSES ..... 500,000 Plants on Sale
Standards, 15*s.* to 24*s.* per dozen, £6 to £9 per 100
Dwarf Standards, 12*s.* per dozen, £3 15*s.* to £5 per 100
Dwarfs, 9*s.* to 15*s.* per dozen, £2 10*s.* to £3 3*s.* per 100.
Climbers, 6*s.* to 12*s.* per dozen, £2 10*s.* to £3 15*s.* per 100
Roses in pots, 10*s.* 6*d.* to 18*s.* per dozen, £3 15*s.* to £6 per 100
Ditto, prepared for immediate forcing, 24*s.* to 42*s.* per dozen, £7 10*s.* to £15 per 100
Roses on their own roots, 9*s.* to 15*s.* per dozen, £3 3*s.* to £5 per 100

BULBS ..... Hyacinths, 4*s.* per dozen, 25*s.* per 100, and upwards
Tulips, 9*d.* per dozen, 4*s.* 6*d.* per 100, and upwards
Crocus, 2*s.* per 100, 17*s.* 6*d.* per 1000, and upwards
Polyanthus Narcissus, 2*s.* per dozen, and upwards
Snowdrops, 2*s.* 6*d.* per 100, and upwards.

CAMELLIAS ..... Young plants, with bloom, 30*s.* per dozen, and upwards. Specimens from 21*s.* to £30 each

FRUIT TREES.... Standard Apples, Pears, Cherries, and Plums, 18*s.* to 24*s.* per dozen, £7 10*s.* to £10 per 100
Pyramids, 18*s.* to 42*s.* per dozen, £6 to £10 per 100
Dwarfs, 9*s.* to 15*s.* per dozen, £3 3*s.* to £5 per 100
Espaliers, 30*s.* to 42*s.* per dozen
Dwarf-trained Peaches, Apricots, and Nectarines, 42*s.* to 60*s.* per dozen
Standard-trained ditto, 7*s.* 6*d.* to 10*s.* 6*d.* each.
Fruit trees in pots, 36*s.* to 84*s.* per dozen
Figs in pots, 24*s.* to 42*s.* per dozen
Strawberries, 3*s.* 6*d.* to 5*s.* per 100
A large number of handsome fruiting trees of various kinds in stock.

GRAPE VINES .... Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each ; Planting Canes, 30*s.* to 60*s.* per doz.

EVERGREENS .... For planting new, or replenishing old, gardens. Prices furnished on application, as these vary greatly.

PARK and ROAD-SIDE TREES ..... Limes, Planes, Maples, Ash, Beech, Birch, Oaks, Poplars, Chestnuts, &c. Prices furnished on application.

DECIDUOUS and PICTORIAL TREES and SHRUBS ..... All the best sorts, being a selection from a large number of varieties proved over a period of many years. Prices on application.

SEEDS ..... Kitchen Garden and Flower Seeds in Collections for large and small Gardens, 10*s.* 6*d.* andupwards.

Priced Descriptive CATALOGUES and every information furnished by letter on application to

WM PAUL & SON,

PAUL'S NURSERIES, WALTHAM CROSS, HERTS.

CRANSTON'S NURSERIES,

ESTABLISHED 1785.

EIGHTY ACRES.

ROSES, FRUIT TREES, CONIFERS,

FOREST TREES, &c.

Descriptive and Priced Catalogues for 1878 *now ready.*

Address—

CRANSTON & CO.,

KING'S ACRE, near HEREFORD.

CUCUMBER—EMPRESS of INDIA.

J. C. WHEELER & SON

Introduced this fine variety last spring. It has proved itself to be one of the best flavoured and handsomest in cultivation, and good for winter work.

Price 2s. 6d. per packet.

J. C. WHEELER & SON,

SEED GROWERS, GLOUCESTER.

DUTCH FLOWER ROOTS,

CARRIAGE FREE.



DANIELS BROTHERS'

SELECT

LIST FOR AUTUMN, 1878.

We annually visit the Dutch Bulb Farms, and our selection of choice FLOWER ROOTS will be found unique for size and quality of Bulb, and excellence of variety.

	Per dozen.—*s.*	*d.*
HYACINTHS, superb exhibition varieties	..12*s.* to 18	0
„ choice named varieties, for pots or glasses	9	0
„ good	6	0
„ mixed, red, white, or blue	3	0
„ miniature, with names	3	6
„ white Roman, for forcing	3	0
CROCUS, large Dutch, blue, white, striped, or yellow, each, per 100	2	0
„ superb named varieties, blue, purple, pure white, golden-yellow, pencilled, &c. ..each, per 100	3	6
„ choice mixed, all colours	1	4
SNOWDROPS, large single .. .. per 100	2	6
„ large double .. .. .. per 100	2	9
TULIPS, Van Thol, scarlet	1	6
„ Pottebakker, white	1	6
„ Tournesol, double	1	6
„ Rex Rubrorum, double	0	9
„ La Candeur, double	1	3
„ choice mixed, double .. .. per 100, 5*s.* 6*d.*	0	9
„ choice mixed, single .. .. per 100, 5*s.* 6*d.*	0	9
ANEMONES, splendid double varieties, named, in ten choice sorts .. .. .. per 100	10	6
„ double scarlet, fine .. .. .. per 100	7	6
„ double, finest mixed .. .. .. per 100	4	0
„ single, finest mixed .. .. .. per 100	4	0
LILY OF THE VALLEY, strong clumps for forcing, each, 12.	10	6
POLYANTHUS NARCISSUS, choice mixed	2	0
SCILLA AMŒNA, beautiful blue dwarf	1	0
JONQUILS, single, sweet scented .. 100, 5*s.* 6*d.*	0	9
LILIUM AURATUM .. .. .. each, 12.	10	6
„ CANDIDUM, the old pure white	4	6
„ choice named varieties .. .. .. 6*s.*, 9*s.* and	12	0

All Orders of 10s. and upwards carriage free.

OUR GUINEA COLLECTION

Of choice FLOWER ROOTS for Open Ground, &c, contains the following liberal assortment :—

25 Hyacinths, choice mixed	100 Snowdrops
18 Polyanthus Narcissus, mixed	12 Tulips, Van Thol, scarlet
12 Narcissus Poeticus	12 „ Cottage Maid
12 „ double white	12 „ Yellow Prince
6 Campernelle Jonquils	25 „ double, mixed
25 Anemones, fine, double	12 „ Rex Rubrorum
25 „ fine, single	12 „ late, mixed
50 Persian Ranunculi, mixed	12 Scilla amœna
50 Turban Ranunculi, in four varieties	4 Lilies, of sorts
150 Crocus, in six varieties	12 Spanish Iris
	12 Primroses, beautiful varieties, mixed

With full cultural directions. Double quantity, 42*s.* ; half ditto, 12*s.* 6*d.* ; quarter ditto, 6*s.* 6*d.*

Illustrated CATALOGUE Free on application.

DANIELS BROTHERS,

THE ROYAL NORFOLK SEED ESTABLISHMENT,

NORWICH.

BROCKWORTH PARK PEAR.

The fruit of this remarkable Pear is very large and handsome, the flesh is juicy, melting, and of fine flavour, ripening about the end of September or beginning of October. The colour is yellow, richly dotted, slightly crimson next the sun. It has been awarded a First-class Certificate of Merit by the Royal Horticultural Society.

Fine Pyramids .. .. .. 2*s.* 0*d.* *each.*
Dwarf-trained (for walls) .. 3*s.* 6*d.* *each.*

We can supply one dozen choice Pyramid Pear Trees of the most delicious sorts, our selection, including Brockwork Park, for 18*s.*

J. C. WHEELER & SON,

KINGSHOLM NURSERY, GLOUCESTER.,

HOME GROWN LILIUM AURATUM.—Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."

CHARLES NOBLE has just harvested this year's crop, and will give prices on application.

Bagshot.—October 5.

FOR SALE.—500 Golden Queen HOLLIES, 1½ to 2 feet ; a quantity of Common YEWS, for hedges, &c., 2 to 5 feet.

R. COLLYER, Cart House Lane, Woking Station, Surrey.

Seed Trade.

CABBAGE, Nonpareil, well harvested and good sample. Apply

A. BILLIMORE, Florist, Caversham, Reading.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pansies, Phloxes, and Sweet Violets, may now be had post-free on application.

Hale Farm Nurseries, Tottenham, London.

CYCLAMEN PERSICUM, prize strain, strong plants, well set with flower-buds.
SPIRÆA JAPONICA, splendid clumps.
SWEET BRIERS, strong bushy stuff.
DWARF ROSES, leading sorts.
CUPRESSUS LAWSONIANA ERECTO VIRIDIS.
All at very low prices.

H. B. SMITH, Ealing Dean Nursery, Ealing, W.

COCOA-NUT FIBRE REFUSE, as supplied by G. W. Tricker & Co. to the principal Nurserymen and Gardeners in the United Kingdom, 3*d.* per bushel, 50 for 10*s.*, 100 for 18*s.*, truck-load 25*s.* Finest Kent and Hampshire PEATS, SAND, LOAM, LEAF-MOULD, SPHAGNUM, all MANURES, TOBACCO CLOTH and PAPER, STICKS and LABELS, RUSSIA MATS, and everything for the Garden and Conservatory. Price List free on application. All goods free on to Rail in London.

G. W. TRICKER AND CO., Horticultural Depot, Wimbledon Railway Station, S.W.

COCOA-NUT FIBRE REFUSE.—Reduced Price :—In 4 bushel bags, bags included, at 1*s.*, or truckload of about 250 bushels, 25*s.* (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 234, High Street, Battersea, S.W.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3*d.* per bushel, 100 bushels (33 bags) 20*s.* Truck-load (loose) 30*s.*, put free on rail ; 7*s.* for One-horse Van-load, if fetched from Works. Bags charged 4*d.* each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Christchurch, Hants.—BROWN, FIBROUS, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turfs and carefully loaded into Railway Trucks, at 17*s.* 6*d.* per ton, in loads of 4 Tons and upwards. Sample bag, 5*s.* ; five bags, 21*s.* ; 12 bags, 40*s.* Some also, of good quality, at 13*s.* 6*d.* per ton, four tons and upwards.

PEAT, Brown Fibrous, superior quality for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16*s.* per ton, or £4 10*s.* per 6-ton truck, delivered at either Bagshot or Farnborough Station on S. W. R., or Blackwater, S. E. R.

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Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per truck.

BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21*s.* per ton.

Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5*s.* 6*d.* ; 5 bags, 25*s.* ; 12 bags, 50*s.*

Fresh SPHAGNUM, 10*s.* 6*d.* per bag.

WALKER AND CO., Farnborough Station, Hants.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 2 to 5 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it. Sold Retail by Seedsmen in Boxes, 1*s.*, 2*s.*, and 10*s.* 6*d.* Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests : 1*s.* 6*d.*, 2*s.* 6*d.* and 5*s.* per bottle. May be obtained through all Seedsmen, or direct from

JOHN SCOTT, The Royal Seed Stores, Yeovil.

The Orchardist, by J. Scott, price 3*s.* 6*d.*, the best work in the English language on Fruit Trees and their Cultivation.

New Archangel and Petersburg Mats.

J. BLACKBURN AND SONS have imported several large shipments of MATS from Archangel, Petersburg, and Cronstadt, and are offering them for present orders at unusually low prices. Samples can be seen and prices obtained at 4 and 5, Wormwood Street, E.C.

WHOLESALE RUSSIA MAT MERCHANTS.
NEW ARCHANGEL MATS.
ST. PETERSBURG MATS.
RAFFIA FIBRE, NETTING, CANVAS, &c.
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RUSSIA MATS, RUSSIA MATS, from 30*s.* to 70*s.* per 100 ; ARCHANGELS, 110*s.* to 120*s.*, good for packing, from 20*s.* RAFFIA for Tying, GUNNY BAGS, &c. Delivered to any station in London on receipt of cash.

SUTHERLAND, SON AND CO., 11, Fenchurch Buildings, Fenchurch Street, London, E.C.

ANDERSON'S RUSSIA MATS,

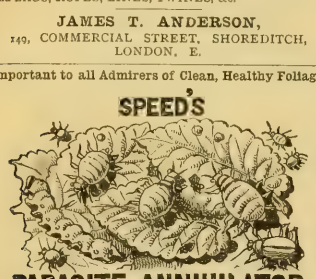
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Are highly recommended for durability and cheapness. The different qualities and sizes are fully described in a Catalogue sent, post-free, on application. Every description of SACKS and BAGS, ROPES, LINES, TWINES, &c.

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Important to all Admirers of Clean, Healthy Foliage.

SPEED'S



PARASITE ANNIHILATOR

The most effectual remedy ever discovered against Mealy Bug, Red Spider, Greenfly, American Bug, Thrips, Scale, and all Parasites infesting Roses, Vines, Plants, Shrubs, &c.

Mr. W. THOMSON, of *Tweed Vineyard, Clovenfords*, writes:—"You are entitled to the gratitude of all who have to battle with the parasites that affect plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."

Mr. J. WILLS, *Floral Decorator, South Kensington*, says:—"I have tried it in various ways, and find it very effective. It at once destroys Thrips, Scale and Red Spider; Greenfly and minor pests instantly disappear."

Mr. D THOMSON, *Gardener to His Grace the Duke of Buccleuch, Drumlanrig Castle*, writes:—"I find it to do most effectually all that you claim for it. I applied it to Mealy Bug, Grey Scale, and Red Spider, and its effects are quite magical."

Sold in bottles at 2*s.*, 3*s.* 6*d.*, 6*s.*, and 10*s.* each.

It is most economically applied with a Vaporiser, price 2*s.*

Prepared by Alfred Lowe, Chemist, Chesterfield.

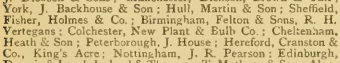
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Agents wanted in every district.

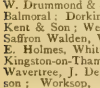
THE GARDEN POTTERY, Old Down, Shepton Malet.—My PRICE LIST is now re-issued for a marked reduction on previous lists. Flower-Pots, Hyacinth and Crocus Pots, Moss Pots, Watercress Pans, Rhubarb, Seakale and Cucumber Pots, Snail-Guards, Hedgehogs, Seed Pans, Edging Tiles, are all materially reduced in price.

T. J. HICKES.—Sept. 28.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The primer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

T. ROSHER AND CO., Brick and Tile Merchants.

See Addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves. A liberal Discount to the Trade.

Hyacinths in Pots.

POTS MADE EXPRESSLY for HYACINTHS can be supplied by J. MATTHEWS, Royal Pottery, Weston-super-Mare. Price List Free.

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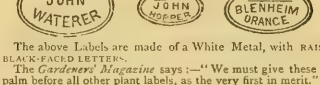
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	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
20 × 12 inches ..								
20 × 13 ,, ..								
20 × 14 ,, ..								
20 × 15 ,, ..	14 0	16 6	18 6	21 0	11 9	13 9	15 0	18 3
20 × 16 ,, ..								
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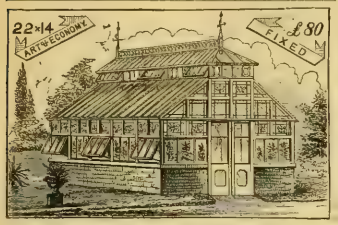
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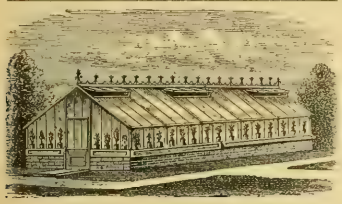
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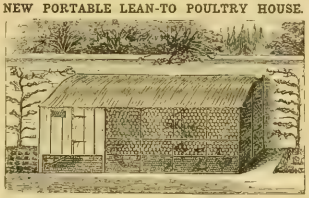
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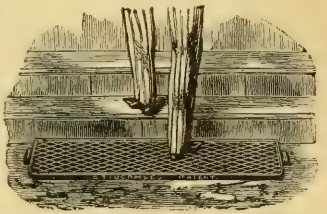
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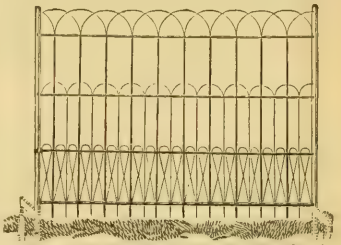
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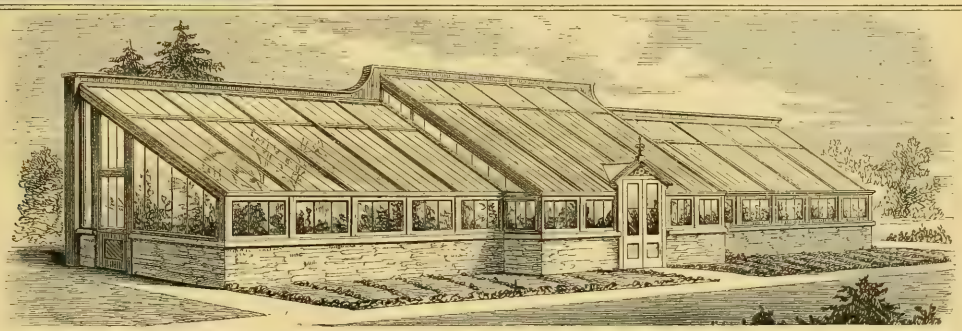
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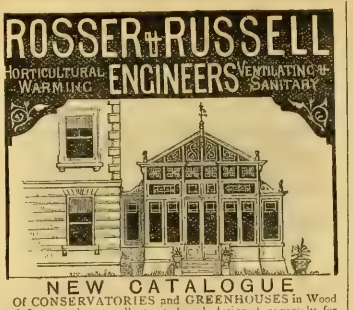
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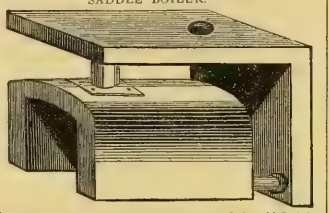
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G. AND W. STEELL, of the above Nurseries, most respectfully invite the Trade to inspect their Stock, which they will find very extensive and uncommonly fine this season, and in excellent condition for moving. Early orders are respectfully solicited.

To Gentlemen, Contractors, and Others.
G. AND W. STEELL also solicit the attention of all those who are making large plantations, and beg to inform them that they will feel great pleasure in giving special prices to large buyers, which they can quote extremely low, having a very large Stock on hand.

Miles' New Hybrid Spiral Mignonette.
EXTRA SELECTED from the ORIGINAL STOCK.
WM. MILES has to offer new SEED of the above splendid variety, carefully saved from the finest spikes, at 1s. per packet. The usual allowance to the Trade.
The West Brighton Nurseries, Cliftonville, Sussex.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).
THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

WANTED, 400,000 QUICKS, strong, 2-yr. and 3-yr. old, or small bedded. Address, cash price: GEORGE GRAY, Sen., Box Nursery, Chertsey, Surrey.

Roses.
CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready. The Trees are very fine this season

Fruit Trees.
CHARLES TURNER'S select LIST of the above is also now ready. Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.
CHARLES TURNER'S CATALOGUE can be had on application. The Royal Nurseries, Slough.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

STRAWBERRY DUKE of EDINBURGH (Moffat).—Strong well-rooted runners of this famous variety from the original Stock, the best for general crop and marketing, 7s. 6d. per 100, 12 plants post-free for 2s.
TODD AND CO., Seedsmen, Maitland Street, Edinburgh.

Vines—Vines—Vines.
J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To the Trade.
SEEDLING LARCH, extra fine, 1-yr. and 2-yr.
SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr.
The above are offered in quantity, and are especially fine.
LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

GOLD MEDAL for TUBEROUS BEGONIAS.—Seed just harvested from our unrivalled collection. Sealed packets, 1s. 6d. and 2s. 6d. each.
We offer also our noted strains of PRIMULA, CALCEOLARIA and CINERARIA, at 1s. 6d. and 2s. 6d. per packet.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

LILY OF THE VALLEY.—The best sort for forcing, very strong crowns, 40s. per 1000; COCOS WEDDELLIANA, nice cultivated plants, 50 cm. high, 20s. each.
OTTO DESENISS, Nurserymen, Barmbeck, Hamburg.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

CHRISTMAS ROSES.—Helleborus niger, the true maximus variety, Spiræa (Hoteia) japonica and palmata, may be had in any quantity. Prices on application to BUDDENBORG BROS., Florists, Hillegom, Haarlem, Holland; who will also be happy to forward their CATALOGUE of Hyacinths, Tulips and other Dutch Bulbs.

CHRISTMAS ROSES.—Strong blooming plants, 18s. per dozen, for cash with order, package included. The Trade supplied at the usual discount for cash only. THOMAS KITLEY, Oldfield Nursery, Bath.

Special Offer.
STANDARD and DWARF ROSES.
Trade LIST now ready, post-free.
LEWIS S. WOODTHORPE, Glazenwood Nursery, Braintree, Essex.

To the Trade.
STANDARD and DWARF ROSES.—A few thousands of each yet unsold. Plants unusually fine. Price on application.
KEYNES AND CO., Castle Street Nursery, Salisbury.

SEAKALE and RHUBARB ROOTS, for Forcing, exceptionally fine. For prices and special quotations, apply to
H. THORNTON, 1, Maxwell Road, Fulham, W.

DRIED FLOWERS, Grasses, Immortelles, Moss, Bouquets, Wreaths, Baskets, cheap, finest quality. Price List on application.—N. BOETTNER, Romhild, Germany

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING
GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

SALES BY AUCTION.

Dutch Flower Roots, for Present Planting and Spring

Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during October and November, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Pyrus Maulei.

MR. J. C. STEVENS has received instructions from Messrs. Maule & Sons, of Bristol, to offer FOR SALE in the week after next about 1000 plants of this beautiful New Fruit, in lots to suit both the Trade and private buyers.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Unreserved Sales of Dutch Bulbs of superior quality,

comprising the finest Hyacinths, Tulips, Crocuses, Narcissus, Jonquils, Lilies, Gladiolus, Lily of the Valley, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next, and every following MONDAY, at the Mart, opposite the Bank of England, City, at 11.30 punctually.

P. & M. will buy for gentlemen who cannot attend.

Catalogues had at 98, Gracechurch Street, E.C.

Tottenham.

IMPORTANT ANNUAL SALE of VALUABLE and WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, adjoining the Station, on TUESDAY, October 15, at 11 for 12 o'Clock precisely, by order of T. S. Ware, a large quantity of well-grown NURSERY STOCK in splendid condition for removal, comprising 400 Lombardy and other Poplars, Planes, 600 Standard Limes, straight stems; 200 double Crimson Thorns; a quantity of Ornamental and Border Shrubs, including 600 Laurustinus, 2 to 3 feet; 800 Aucuba japonica, 2 to 3 feet; 1500 common and other Hollies, 600 Rhododendron ponticum, and a fine assortment of Evergreens and Coniferæ; 1200 clean-grown Standard, Dwarf-trained and Pyramid Fruit Trees; 2500 Standard and Half-Standard Roses; quantities of climbing Plants in variety; 500 double Pæony officinalis; 2000 Pinks; Helleborus niger, Miscellaneous Bulbs, Autumn and Spring flowering Perennials, and other useful Stock.

On view one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Brixton, S.W.—Without Reserve.

TO GENTLEMEN, BUILDERS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Loughborough Park, S.W., close to the Station, on WEDNESDAY and THURSDAY, October 16 and 17, at 12 o'Clock precisely each day, by order of Messrs. Ponsford & Son, the valuable NURSERY STOCK, in excellent condition, comprising 5000 Limes, 6 to 10 feet; 250 Planes, 6 to 12 feet; 500 Mulberry Trees, including some fine specimens; thousands of Evergreen and Border Shrubs for border planting, and 5000 Aucubas; together with STOVE and GREENHOUSE PLANTS, including Palms, Azaleas, Camellias, Ferns, Choice Orchids, &c.

On view one week prior to the Sale. Catalogues had on the Premises, at the Seed Shop, 259, Brixton Road, S.W.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

The Nursery, close to the Queen's Head Hotel,

Church End, Finchley, N.

CLEARANCE SALE. Entirely without reserve, by order of William Whiteley, Esq.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, on THURSDAY, October 17, at 11 o'Clock punctually, the whole of the NURSERY STOCK, consisting of Evergreen, Coniferæ, and Deciduous Shrubs, in good condition for removal, a quantity of bushy Aucuba japonica, Variegated and Green Hollies, 1000 Limes, 5 to 12 feet; 200 Standard and Pyramid Fruit trees, and other Miscellaneous Stock.

May be viewed one day prior to the Sale, Catalogues had on the Premises, at Mr. W. Whiteley's establishment, Westbourne Grove, W., and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Addlestone, Surrey.

EXTENSIVE SALE of first-class NURSERY STOCK, in consequence of removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the various Nurseries known as the Ongar Hill, Addlestone, and Ottershaw Nurseries, Addlestone, Surrey, on TUESDAY, October 22, and four following days, at 11 for 12 o'Clock precisely each day, by order of Mr. Alfred Gray, several acres of beautifully grown NURSERY STOCK in fine condition for removal, including 20,000 Common Laurels, 1 to 7 feet; 10,000 Portugal Laurels, 2 to 5 feet; 15,000 Spruce Firs, 1 to 3 feet; 10,000 English Yews, 1 to 3 feet; 10,000 Green Hollies, 1 to 4 feet. Thousands of Pines in variety; 2000 choice Border Shrubs; 10,000 Roses, comprising Standard, Half-Standard, and Dwarfs, of the very best sorts; 32,000 Fruit Trees, including 10,000 Standard, Pyramid, and Dwarf Apples, Pears, Plums, and Cherries; 10,000 Dwarf and Cut-back Peaches, Nectarines, and Apricots; 4000 Dwarf trained do.; 100,000 fine Fruit Stocks; 30,000 Ornamental, and thousands of Forest Trees, 2 to 10 feet, &c.

May now be viewed. Catalogues may be obtained of Mr. ALFRED GRAY, Nurseryman, Addlestone, and of the Auctioneers.

St. Albans, Herts.

Four minutes' walk from the Midland Station.

CLEARANCE SALE of 5 Acres of well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Watson to SELL by AUCTION on the Premises, the Nine Dells Nursery, and also at the New Zealand Nurseries, Hatfield Road, St. Albans, on THURSDAY, October 31, at 11 for 12 o'Clock precisely, a large quantity of thriving NURSERY STOCK.

Merriott, Somerset.

Two and a half Miles from Crewkerne Station.

EXTENSIVE UNRESERVED SALE of WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Royal Nurseries, Merriott, on WEDNESDAY, October 23, and two following days, at 11 for 12 o'Clock precisely each day, by order of Mr. John Scott, in consequence of his relinquishing the business in favour of Mr. John George Hill (for many years his manager), a portion of the extensive and well-grown NURSERY STOCK, consisting of an immense quantity of choice Border Shrubs, including many handsome specimens of Abies Dougasii, Deodara, Picea Nordmanniana, Pinsapo, Regnaic-Amaliæ, Pinus excelsa, Pinus insignis, Wellingtonias, &c.; also clean grown Fruit Trees of all the finest varieties collected from all parts of the world; also Forest Trees, including Larch, Spruce, Scotch, Alder, Hazel, Thorns, Hornbeam, Birch, Beech, Chestnut, &c.; also Plants for Seaside Planting, including Evergreen Oaks, Euonymus, &c.

Catalogues will be ready about the 15th inst., and may be had on application to Mr. JOHN SCOTT, Merriott; Mr. J. G. HILL, Merriott; or of the Auctioneers, Messrs. PROTHEROE AND MORRIS, 98, Gracechurch Street, London, E.C.

Tooting, S.W.—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. R. Parker to SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, on MONDAY and TUESDAY, October 28 and 29, a large quantity of extra thriving young NURSERY STOCK, remarkably well grown and in excellent condition for removal.

May be viewed any day prior to the Sale. Catalogues now ready, and may be obtained on application.

Tooting, S.W.—*Re* Wm Rollisson & Sons in Liquidation.

UNRESERVED SALE of Valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, on the Premises, the Nurseries, Tooting, S.W., on FRIDAY, November 1, at 11 for 12 o'Clock precisely, a large quantity of VALUABLE NURSERY STOCK, more detailed particulars of which will appear in future advertisements.

Goldworth, Woking Station, S.W.R.

THREE DAYS' SALE of NURSERY STOCK, by order of Messrs. J. & W. Trigg.

MR. W. ABRAHAM begs to call particular attention to the very handsome lot of English YEW, Green and Variegated HOLLY, from 2 to 10 feet, that will be offered by AUCTION, on TUESDAY, October 16 and two following days, at 12 o'Clock each day.

Catalogues of the Auctioneer.

Goldworth, near Woking Station, Surrey.

IMPORTANT NOTICE, to all who contemplate planting this autumn, of three days' Sale of very choice NURSERY STOCK in the best possible condition for removal. It consists of 5000 Green Holly, from 1 to 9 feet; 3500 Variegated ditto, 1 to 6 feet; 20,000 English Yew, 1 to 10 feet; Cedrus Deodara, 3 to 10 feet; Pinus Pinsapo, P. Nordmanniana, and thousands of the following: Common and Portugal Laurel, Golden Yew, Aucuba, Thuja Wareana, T. aurea, Tree Box, Juniper (very fine; Irish Yew, 3 to 9 feet; Laurustinus, 120,000 Seedling and bedded Quick, 15,000 Currants, Sweet Bay, 10 feet, handsome; Standard and Maiden Fruit Trees, and many other items, which will be Sold by Auction by

MR. WILLIAM ABRAHAM, on the Premises, Goldworth, near Woking Station, South-Western Railway, on WEDNESDAY, October 16, and two following Days, at 12 o'Clock each day punctually, by order of Messrs. J. & W. Trigg.

Catalogues free by post, at the place of Sale, or of the Auctioneer, Woking Station, Surrey.

Manchester.

SALE of the remarkably fine COLLECTION of VALUABLE and SELECT ORCHIDS, including several beautiful and rare varieties of Anæctochilus, Aerides, Angræcum, Ada, Barkeria, Cattleya, Brassavola, Calanthe, Cattleya, Chysis, Cypripedium, Dendrobium, Disa, Epidendrum, Goodyera, Lælia, Lycaste, Masdevallia, Miltonia, Odontoglossum, Oncidium, Pescatorea, Phalænopsis, Pleione, Saccolabium, Sophronitis, Trichopilia, Utricularia, Vanda, Zygopetalum, &c., the whole admirably grown and in perfect health.

MESSRS. CAPES, DUNN, AND PILCHER beg to announce receipt of instructions from the Executrix of the late Miss Bahr, of South Hill Grove, Liverpool, to SELL by AUCTION, on FRIDAY next, October 18, at 12 o'Clock, at The Gallery, 8, Clarence Street, Albert Square, Manchester, the valuable collection of rare and beautiful ORCHIDS, selected and cultivated with the greatest care, and consisting of a number of the more rare and desirable specimens.

May be viewed on Thursday, October 17, and Catalogues can be had on application to the Auctioneers, 8, Clarence Street, Manchester.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Stations on the South-Western Railway.

IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey, to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

Goldworth Road Nursery, Woking Station, Surrey.

MESSRS. ROWBOTHAM AND CO. have received instructions from the Widow of the late Mr. Cobbet to SELL by AUCTION, on MONDAY, October 21, and two following days, the whole of the well-grown NURSERY STOCK, comprising about 10,000 Roses of the best known varieties, a quantity of Trained Peaches, Nectarines, Apricots and Apples; Standard Pears, Apples and Plums; several thousand year Thujas, Junipers, Cupressus, Aucubas, Portugal and Common Laurels, Spiræas, Deutzias, Quick, Ash, &c. The whole having been recently moved, are now in good condition for planting.

Catalogues of R. E. GEACH, Esq., Solicitor, Guildford; and of the Auctioneers, at their Offices, 136, High Street, Guildford, Surrey.

The Dorking Nurseries.

IMPORTANT SALE of VALUABLE and WELL GROWN NURSERY STUFF, SURPLUS STOCK.

MESSRS. WHITE AND SONS will SELL by AUCTION, as above, on MONDAY, October 28, and two following days, at 11 for 12 o'Clock, about 20,000 various TREES and SHRUBS, in good condition for transplanting, including handsome specimens of Wellingtonias, Deodaras, Pinus of sorts, Piceas of sorts, Abies, Thujas, and Cupressus in great variety, &c., in height varying from 10 to 12 and 15 feet, also a fine lot of Aucubas, Box, Phillyreas, Common and Portugal Laurels, Variegated and Green Hollies; Irish, Golden, and Common Yews; Laurustinus, Berberis, Cupressus, Thujas, &c., from 2 to 5 feet in height, and Spruce Firs in all sizes, Green and Variegated Ivies, and a quantity of Rhododendrons, Kalmias, and other Flowering Shrubs; also a splendid lot of Standard Mulberries, and a Miscellaneous Collection of GREENHOUSE PLANTS, such as Azaleas, Camellias, Exotic Ferns, Palms, Eucharis, Cyclamen, Isolepis, Veronicas, Libonias, &c.

Descriptive Catalogues ten days prior to the Sale, may be obtained of the Auctioneers, Dorking.

Brox and Woodham Nurseries, Chertsey, Surrey.

One Mile from the Addlestone and Two Miles from the Woking Stations on the South-Western Railway.

By Order of the Executrix.

NOTICE of an IMPORTANT SALE of NURSERY STOCK.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Gray to SELL by AUCTION, on MONDAY, October 28, and four following days, the very valuable and well-grown Stock, on the above Nurseries, comprising 7500 Standard Pyramid Trained and Maiden FRUIT TREES, all true to name, and best leading sorts; 3000 Green HOLLIES, 2 to 3 feet; 500 Variegated Hollies, 10,000 SPANISH CHESTNUT, 3 to 12 feet; 4000 POPLARS of sorts, 6 to 10 feet; 11,000 HORSE CHESTNUT, 6 feet in the stem; Golden and Flowering ASH, 5000 BIRCH, 4 to 10 feet; 500 LIMES, 6 to 10 feet; large quantity of ASH, OAK, ELM, SYCAMORE, ALDER, Purple BEECH, and other FOREST TREES, 500 Laburnum, 8 to 10 feet; 1200 Spruce, 1 to 3 feet; Acer Negundo, Variegated and Common ditto, 6 to 10 feet; 300 Standard Thorns, of sorts; 7000 Pinus insignis, Strobus, austriaca, excelsa, Laricio, 2 to 6 feet; 5000 Larch, 3 to 4 feet; Weymouth Pine, 5 to 6 feet; 700 Cedrus Deodara, 3 feet; 500 Cupressus Lawsoniana, 3 to 5 feet; 300 Abies Douglasii, 7000 Thuja Lobbii, 5000 Cob Nuts, 5 feet; 3000 Yews, 2 to 3 feet; 3000 Hornbeam, 5 to 7 feet; 5.00 Common and Portugal Laurels, 2 to 3 feet; 10,000 Transplanted Quicks, STANDARD ROSES of the most choice sorts; Standard Cupressus, Acacia, Ponticum and Hybrid RHODODENDRONS, BERBERIS, about 125 lots of Choice Mixed Shrubs, suitable for immediate Ornamental Planting.

The Auctioneers have pleasure in inviting the attention of Gentlemen, Nurserymen, and others to this Stock, which is in perfectly safe condition for removal.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises; and of Messrs. R. & J. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

Warminster Nurseries, Wilts.

PRELIMINARY NOTICE of an EXTENSIVE SALE of a portion of one of the choicest NURSERY STOCKS in the kindgom, consisting of many thousands of rare Coniferæ, evergreen and deciduous Trees and Shrubs, large quantities of Fruit Trees of all kinds, hardy Bulbs, &c.

MR. WM. ABRAHAM is instructed by the Executors of the late Mr. George Wheeler to SELL the above by AUCTION, without reserve, early in November, further particulars of which will be given in future advertisements.

WANTED, to RENT, on LEASE, from ONE to TWO ACRES of GROUND—Orchard preferred—with COTTAGE, within 6 or 8 Miles of London. ROBT. GRIX, Florist, New Road, Hilllingdon, Middlesex.

TO BE DISPOSED OF, on very advantageous Terms, a capital and very lucrative FLORIST'S, FRUITERER'S, and SEED BUSINESS, situate in a main thoroughfare, and capable of great extension, comprising large Shop, Dwelling-house, Greenhouses, Stabling, and every convenience. Incoming, all at a fair valuation or arrangement to suit Purchaser. To a persevering man this is an opportunity seldom to be met with. For particulars, address A. B. C., *Gardeners' Chronicle* Office, W.C.

Old-Established Nursery to Put Off.

Having realised a competency I wish

TO LET my NURSERY GROUND, part of Public Arboretum, at a nominal rent. Select small Stock to be taken, part of which may be paid for during a series of years. I am the third generation in the same business, which is in the best part of a flourishing town of nearly fifty thousand inhabitants. Apply,

Mr. JEFFRIES, Arboretum Nursery, Ipswich.

TO BE LET, about 27 miles from London, and in the immediate neighbourhood of fashionable Hotels, much resorted to by Tourists, Boating and Fishing parties, a KITCHEN GARDEN, well stocked with choice Fruit Trees and extensive ranges of Forcing Houses, with about 65 acres of Grass Land. Immediate possession can be had, affording the occupying time to make arrangements for the coming season—Further particulars of Mr. ALDRIDGE, Auctioneer and Estate Agent, Maidenhead.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE is hereby given that an Addition to the PENSION LIST of this Institution will be made in January next. That in consequence of there being a large number of Applicants coming under Rule No. 6, who have been Subscribers for fifteen years and upwards the List of Candidates will be confined to those persons. Persons desirous of becoming Candidates are requested to send in their applications to the Committee on or before November 8 next, after which day they will not be received.—By order,

EDWARD R. CUTLER, Secretary.

14, Tavistock Row, W.C.—October 2, 1878.

P.S. Printed Forms of Application and all requisite information may be obtained from the Secretary.

MESSRS. G. GRAY AND SONS, Brox Nurseries, Chertsey, can offer 300,000 QUICKS, two to three and four years' stuff, strong.

Price and Samples on application.

FOR SALE.—500 Golden Queen HOLLIES, 1½ to 2 feet; a quantity of Common YEWS, for hedges, &c., 2 to 5 feet
R. COLLYER, Cart House Lane, Woking Station, Surrey.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narciss, 10s. per bushel, 6s. per half-bushel, 3s. 6d. per peck. Likewise Bulbs of LILIUM BULBIFERUM, 15s. per 100, 2s. 6d. per dozen. Terms cash with order. Package free. Post-office Orders payable at Vauxhall Cross.
Mrs. ALDERSON, Langley Lane, South Lambeth, Surrey.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's B.C. BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

For Immediate Disposal.

SPECIMEN STOVE and GREENHOUSE PLANTS.
WM. MILES has for disposal some splendid Specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Tree and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to
WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

STRONG CLUMPS for FORCING.

	p. 100	p. 1000	p. 10,000
DIELYTRA SPECTABILIS ..	£1 5	£10 17	..
HOTEIA (Spiræa) JAPONICA	0 14	5 17	£56
SPIRÆA PALMATA	4 4	37 10	..

Orders to the amount of £5 free throughout Great Britain.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Pinks—Pinks—Pinks.

WOOD and INGRAM have a large Collection of the best Exhibition Varieties in strong, well-rooted plants. This is the best season for planting.
Price 4s. per dozen.
For Names and Descriptions see their new CATALOGUE of imported and other Bulbs, Carnations, Picotees, &c., which is now ready, and will be forwarded free on application.
The Nurseries, Huntingdon.

THIRTY THOUSAND CAMELLIAS, alba plena and other best sorts, all home-grown, well set with bud and very forward. Also many thousand AZALEA INDICA, best sorts, well set for forcing; and hard-wooded HEATHS, half and quarter specimens, fine healthy and well-formed plants. For price and particulars, see *Gardeners' Chronicle* of September 21, 1878.
B. WHITHAM, The Nurseries, Reddish, near Stockport, has the above unequalled collection on Sale.

Potatos for Planting.

JOHN and GEORGE McHATTIE, Seed Merchants, Chester, have this season grown large quantities of the undermentioned kinds from carefully picked stocks, which they will shortly be able to offer at very moderate prices, or special quotations will be given now for immediate delivery:—
MYATT'S PROLIFIC.
MAGNUM BONUM.
OLD FLUKE.
HUNDREDFOLD FLUKE.
YORKSHIRE KIDNEY.
OXFORDSHIRE KIDNEY.
GLOUCESTERSHIRE KIDNEY.
EARLY ROSE.
LATE ROSE.
SNOWFLAKE.
FORTYFOLD.
PATERSON'S VICTORIA.
EARLY WHITE DON.
CHAMPION DON.
And nearly all the new English and American varieties of merit.
A Descriptive CATALOGUE will be published shortly.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 9s. per dozen.
POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz.; smaller plants, 6s. per doz.
BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.
ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.
PRIMULA, ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 5s. and 10s. per dozen.
ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s. per dozen, £4 per 100; smaller plants, in 2½-inch pots, 50s. per 100.
MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen—offered to make room for smaller stuff.
PTERIS SCABERULA, good plants, 12s. per dozen.
ADIANTUM FARLEYENSE, 2000 fine plants, in 4-inch pots, 24s. per dozen; ditto, in 3-inch, 18s. per dozen.
PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.
CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.
GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.
CYCLAMEN PERSICUM, fine strain, 12s. per dozen.
GENISTAS, splendid stuff, 5½ inch pots, 50s. per 100; ditto, in 4-inch pots, 30s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

Rhododendron ponticum.

J. J. MARRIOTT begs to intimate to Noblemen, Gentlemen, and the Trade, that he has an immense stock of the above to offer in ages and sizes as follow, at very moderate prices:—

2, 3, and 4-yr. seedlings.	
4-yr. seedling, 2-yr. bedded.	
4 to 6 inches.	9 to 12 inches.
6 to 9 inches.	12 to 15 inches and upwards.

Highfield Nurseries, Matlock, Derbyshire.

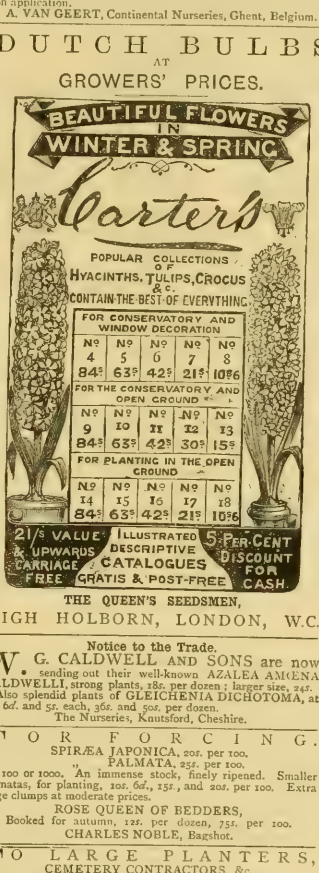
JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

To Gentlemen, Builders, and the Trade.

ROBERT and GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY, ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

BUDDED CAMELLIAS and AZALEAS.—Ghent Azaleas, Azalea Mollis, Spiræa japonica, Lilly of the Valley, Palms and Ferns for decoration, Ficus elastica, Begonias, &c. Also over one hundred large specimen Camellias, choicest varieties, splendid pyramids, 3, 4 to 5 feet high, grown in tubs, and nearly all covered with large swollen buds ready to flower, are offered at the usual moderate charges.
The new illustrated general CATALOGUE forwarded free on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

DUTCH BULBS AT GROWERS' PRICES.



THE QUEEN'S SEEDSMEN,
HIGH HOLBORN, LONDON, W.C.

Notice to the Trade.

W. G. CALDWELL and SONS are now sending out their well-known AZALEA AMŒNA CALDWELLI, strong plants, 18s. per dozen; larger size, 24s.
Also splendid plants of GLEICHENIA DICHOTOMA, at 3s. 6d. and 5s. each, 36s. and 50s. per dozen.
The Nurseries, Knutsford, Cheshire.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
,, PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS,
Booked for autumn, 12s. per dozen, 75s. per 100.
CHARLES NOBLE, Bagshot.

TO LARGE PLANTERS,
CEMETERY CONTRACTORS, &c.
YEWS, English, 2 to 3, 3 to 4, and 4 to 5 feet.
LAURELS, common, 2, 2 to 3, 3 to 4, and 4 to 5 feet.
LIMES, fine grown, 6 to 7, 7 to 8, and 8 to 10 feet.
CHESTNUT, Horse, 8 to 10 feet.
Special quotations on application, and sample dozen sent to any part of Great Britain.
GODWIN and SON, Ashbourne, Derby.

Budded Camellias, Azaleas, Palms, &c.

MR. A. VAN GEERT begs to intimate to his friends and patrons that his stock of the above is of usual excellence and ready for delivery at once. Also Ghent Azaleas, Azalea mollis, Spiræas, Lily of the Valley, Rhododendrons, and Ferns for furnishing, are of the very best quality. The whole at the most reasonable charges.
Wholesale prices on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

Mushroom Spawn.

OSBORN AND SONS call the attention of Mushroom Growers to the speciality they make of the above. Their Spawn never fails to give satisfaction. For testimonials see Catalogue of Bulbs, which will be forwarded on application.
Price 5s. per bushel. Trade price on application.
The Fulham Nurseries, London, S.W.

TO THE TRADE ONLY.
SPRUCE FIR, twice transplanted, stout, 2 feet and 2 to 3 feet.
SCOTCH FIR, twice transplanted, stout, 1½ to feet.
APPLES, PEARS, PLUMS, and CHERRIES, strong standards.
GOOSEBERRIES, strong standards, dressed stems, 80s. to 90s. per 1000. Apply soon to
W. JACKSON and CO., Nurseries, Bedale.

NEW AND RARE LILIES.
LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. 7s. 6d.
LILIUM COLUMBIANUM, extremely rare, 7s. 6d.
LILIUM BATEMANÆ, quite new, 7s. 6d.
LILIUM JAPONICUM KRAMERI, 5s.
Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30s. and 42s. per dozen.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CHOICE ORCHIDS.—Many thousands of good plants to select from. Mr. WILLIAM BULL is constantly receiving large importations from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago, and can offer many of the rarest and most beautiful kinds at extremely low prices. Customers can choose their plants from eleven large houses full of Orchids. An inspection is invited.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

EUONYMUS JAPONICUS, 12 to 15 inches, 25s. per 100, £10 per 1000.
,, ,, MEDIO PICTA, 9 to 12 inches, in pots, 28s. per 100.
,, ,, AUREA MARGINATA, 9 to 12 inches, 28s. per 100 £13 per 1000.
,, ,, DUC D'ANJOU, 9 to 15 inches, 35s. per 100.
,, ,, MACROPHYLLA, 6 inches, 30s. per 100.
,, ,, MICROPHYLLA, 6 inches, 25s. per 100.
IVIES, named varieties, in pots, 30s. per 100.
STANSFIELD BROTHERS, Southport.

Special Offer to the Trade.

ASH, 1-yr. seedlings, 2s. per 1000; 1-yr. transplanted, 1 foot, 5s. per 1000. BEECH, 1-yr. seedlings, 2s. 6d. per 1000. CHESTNUTS, Spanish, 1-yr. drilled, 6s. per 1000. OAK, English, 1-yr. drilled, 3s. per 1000. SPRUCE FIR, 2-yr., fine, 1s. 6d. per 1000; do., 2-yr. transplanted, fine, 5s. per 1000; do., 3-yr. transplanted, 12 to 15 inches, 8s. per 1000. PINUS LARICIO, 1-yr., 1-yr. transplanted, 7s. 6d. per 1000. Cheaper by the 100,000. ARALIA SIEBOLDII, extra fine, bushy, pots 6-inch, 20s. per 100.
GARLIES MITCHELL, Nurseries, Stranraer.

Vines—Vines—Vines.

W. G. CALDWELL and SONS beg to inform their Friends and Customers that their stock of the above is unusually fine this season. Samples have been exhibited at various Shows in the North of England, and they have been highly commended for their excellent quality.
Orders are now being booked from the following varieties:—

Black Hamburgh	Foster's Seedling
Black Alicante	Lady Downe's
Buckland Sweetwater	Madresfield Court
Duke of Buccleuch	Muscat of Alexandria.

Strong Planting Canes, 5s. to 7s. 6d. each.
Extra Fruiting Canes, 7s. 6d. to 10s. 6d. each.
The Nurseries, Knutsford, Cheshire.

To the Trade.

C. VUYLSTEKE, NURSERYMAN, Loochristy, near Ghent, Belgium, has to offer a splendid stock of fine, healthy, abundantly-budded plants at the following prices:—
100 CAMELLIAS, budded, named, imbricated, at £5, £6, £7, and £8.
100 AZALEA INDICA, budded, named, nice crowns, at £4, £5, £6, £8, and £12.
100 AZALEA MOLLIS, budded, named, very bushy, at £8, £10, £12, and £16.
100 GHENT AZALEAS, hardy, budded, named, very bushy, at £4, £5, £6, and £8.
100 KALMIA LATIFOLIA, nice flat-shaped crowns, £4, £5, and £6.
100 BEGONIAS, bulbous, new short brilliant sorts, at £2.
1000 SPIRÆA JAPONICA, colossal clumps, at £6.
A priced descriptive Catalogue may be had on application to Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Special Offer.

JAMES CYPHER begs to offer the undermentioned, to make room for other Stock:—
ADIANTUM CARDIOCHLÆANA, 4 feet 6 inches high, 6 feet wide, £4, 4s.
,, TENERUM, 3 feet 6 inches high, 3 feet 6 inches wide, £2 2s.
,, TRAPEZIFORME. 4 feet high, 5 feet wide, £4 4s.
,, FARLEYENSE, 3 feet high, 4 feet wide, £5 5s.; good young specimens in 15-inch pots, £2 2s.
DAVALLIA MOOREANA, 3 feet 6 inches high, 5 feet wide, £3 3s.; good young specimens in 15-inch pots, £2 2s.; young stuff, 24s. per dozen.
GLEICHENIA DICHOTOMA, 4 feet high, 4 feet wide, £5 5s.; nice young specimens, £2 2s.; small plants from 5s. each.
,, RUPESTRIS GLAUCESCENS, 3 feet 6 inches high, 3 feet 3 inches wide, £8 8s.; 3 feet 3 inches high, 3 feet 3 inches wide, £8 8s.; 3 feet high, 3 feet wide, £6 6s.
CIBOTIUM PRINCEPS, spread of fronds, 12 feet, £3 3s.
CYATHEA MEDULLARIS, 7 feet by 12 feet, £3 3s.
MARTENEZIA GRANATENSIS, 8 feet by 8 feet, £4 4s.
LATANIA BORBONICA, 8 feet by 10 feet, £4 4s.
DENDROBIUM DEVONIANUM. 3s. 6d. to 5s. each.
,, CRASSINODE, 7s. 6d. to 10s. 6d.
,, FIMBRIATUM OCULATUM, 5s., 7s. 6d., 10s. 6d.
,, SUAVISSIMUM, 10s. 6d., 14s., 21s.
,, CHRYSOTOXUM, fine plants, 10s. 6d., 21s.
VANDA CŒRULESCENS, 5s., 7s. 6d.
PHALÆNOPSIS GRANDIFLORA, 10s. 6d., 21s.
Exotic Nursery, Queen's Road, Cheltenham.

BULBS AT GROWERS' PRICES.

TULIPS, fine, mixed, single early, 5s. per 100.

HYACINTHS, fine, mixed, double, 18s. per 100, 2s. 6d. per dozen.

CROCUS, fine, mixed, 7s. 6d. p. 1000, 1s. p. 100.

If over 10s. value packing and carriage free.

C. R. FREEMAN,
ECONOMIC SEEDSMAN, NORWICH.

WINTER FLOWERING PLANTS
FOR
CONSERVATORY DECORATION.

Collections of 12, 25, and 50 fine plants, mostly in 48 pots' for blooming this winter, comprising Azaleas, Camellias, Bouvardias, Cytisus, Solanums, Cyclamens, Ericas, Epacris, Tree Carnations, Acacias, for 20s., 40s., 75s., including baskets and packing.

Collections of Bulbs for Indoor and Outdoor Culture, not surpassed for cheapness or quality by any offered, 10s. 6d., 21s., or 42s. See Catalogue.

SPRING FLOWERING PLANTS.—Collections of 100, 500, or 1000 plants, comprising the best varieties of Daisies, Bedding Pansies, Violas, Arabis, Alyssum, Aubrietias, Cheiranthus, Iberis, Myosotis, Dwarf Phloxes, such as Nelsoni, frondosa, &c., Santolinas, Saponarias, Saxifrages, Sedums, Silene, for 10s., 40s., and 70s.

HERBACEOUS PLANTS.—Collections of 100, 250, or 500 for blooming through Spring, Summer and Autumn—all good showy varieties of merit, for 25s., 55s., and £5 5s. For List of Sorts see Catalogue.

FLORISTS' FLOWERING PLANTS.—Collections of 12 fine Phloxes, 12 Pentstemons, 12 Antirrhinums, for 10s.
12 Carnations, 12 Picotees, 12 Pinks, and 12 Pansies for 18s. 6d.
12 Delphiniums, 12 Potentillas, 12 Pyrethrums, 12 Pæonias, 21s.
Half of any Collections at half price.

COLLECTIONS of STOVE or GREENHOUSE PLANTS in variety 9s., 12s., and 18s. per dozen, good plants and sorts; ditto, ditto, in small plants, for growing on, 6s. and 9s. per dozen.

COLLECTIONS of FRUIT TREES—APPLES, PEARS, PLUMS, or CHERRIES.—Pyramids, 9s., 12s., 18s., and 30s. per dozen; Dwarf-trained, 24s. and 30s. per dozen.

STRAWBERRY PLANTS.—Purchasers' Selection from 50 of the best sorts grown, 3s. 6d. per 100. For List see Catalogue. Our selection 2s. 6d. per 100, or of 50 in 10 sorts, 11s.; 1000 in 20 sorts, 20s.; 100 in 50 sorts, 7s.

EVERGREEN and DECIDUOUS TREES and SHRUBS in variety, cheap and good, well-rooted and of good form, at low rates. Standard and Dwarf ROSES, in variety. For List and Prices see Catalogue.

All plants not satisfactory may be returned, if *carriage paid*.

SPRING CATALOGUE of 110 pages, and AUTUMN CATALOGUE of 52 pages, containing Lists of all varieties and prices for our or Purchaser's Selections, post-free for two stamps.

WM. CLIBRAN & SON,
OLDFIELD NURSERY, ALTRINCHAM.

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9-inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

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NURSERIES, KING'S ACRE, HEREFORD.

GEO. JACKMAN & SON,
(ESTABLISHED 1810,)



Cultivators of
FRUIT and FOREST TREES,
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.

WOKING NURSERY, SURREY.

Special Offer.

PELARGONIUMS.—All the newest and best kinds, good stuff, in 2½-inch pots, 20s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

WELLINGTONIA GIGANTEA. — For Sale, about 400 well grown trees, from 3 to 5 feet high. Apply, C. W. LISTER KAYE, Osberton, Worksop.

FERNS. — Adiantum decorum, formosum, concinnum latum, tinctum, 6-inch pots; Asplenium ferulaceum, Veitchianum, 4-inch pots; Lastrea Opaca, 4-inch pots; Lygodium scandens, 6-inch pots. Property of an Amateur. Clean and healthy plants. Price 28s. the lot.
E., Post-office, Carlisle.

To Gardeners, Farmers, Nurserymen, &c

RHUBARB ROOTS, 10,000 strong Linneaus, for forcing or planting, and 20,000 RASPBERRY CANES (Semper Fidelis); also yearling BLACK CURRANT TREES. Apply
T. BEACH, Fruit Grower, Ealing Lane, Old Brentford, W.

CLEMATIS.—Jackmanni, rubra violacea, Miss Bateman, Lucy Lemoine, Gem, and others, very strong, 50s. per 100, £20 per 1000.
RICHARD MASON,
Windlesham Nursery, Bagshot, Surrey.

LEE'S NEW VIOLET ODORATISSIMA. —Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants, at any time when the weather is favourable, at the following rates:—15s. per dozen, 8s. 6d. per half-dozen, 2s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.



PARIS EXHIBITION, 1878.

IMPORTANT AWARDS.

MESSRS. SUTTON & SONS

Have the pleasure of stating that they have received an Official Announcement that the Jurors have awarded them both

A GOLD MEDAL
AND
A SILVER MEDAL
FOR THE
EXHAUSTIVE COLLECTION
OF
SEEDS, GRASSES, MODELS, &c.,
EXHIBITED BY THEM AT THE
GREAT PARIS INTERNATIONAL EXHIBITION,
1878.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN,
And by Special Warrant
SEEDSMEN to the PRINCE of WALES,
READING, LONDON, and PARIS.

LEMOINE'S GRAND NEW DOUBLE GERANIUMS.—These are decidedly the greatest acquisitions of the season 1877. Beautiful, new and varied in colour, habit of the best singles, with enormous trusses. Continually receiving testimonials to their excellence, I can warrant them to please. Twelve varieties for 6s., six for 3s.

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Catalogues on application.
R. PANNETT, Florist, Chailey, Sussex.

Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.

THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone; also at Ashford.



WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)
ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
HERTS.
Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

APPLE—WHITE MELROSE.

"A valuable and fine looking Apple, first-rate quality, suitable either for culinary or dessert purposes. In use from October to January."—*Vide* Hogg's *Fruit Manual*, Fourth Edition.

ORMISTON AND RENWICK beg to announce that they will send out (first time), in November, the above celebrated Apple. Price 10s. 6d.

The Stock being limited, early Orders (which will be forwarded according to priority of receipt) are respectfully solicited. The Nurseries, Melrose, N.B.

RICHARD SMITH & Co. WORCESTER

FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease: Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*" and RICHARD SMITH & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6d. each. Maiden Trees, 1s. 6d. each; Bushes, 3s. each; Standards, Pyramids, and Dwarf-trained Trees, 3s. 6d. and 5s. each.

HARDY HERBACEOUS and ALPINE PLANTS, their scientific and English names, height, colour, time of flowering, and other useful information. Descriptive Price List for a penny stamp. Collection of 100 beautiful hardy varieties for Garden Beds, Borders, or Rockeries, for 30s.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST of STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for a penny stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for a penny stamp.

ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

RICHARD SMITH & Co. WORCESTER

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.

Descriptive and Priced Catalogues for 1878 now ready.

Address—
CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

BOX EDGING.—Several hundred yards, good, for Sale, cheap. Price, &c., on application to W. HOCKIN, The Nurseries, Taunton.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

NURSERY STOCK for Sale, cheap; must be cleared, ground sold for building purposes:—
AUCUBAS, 600, 1½ to 2½ feet, bushy.
GARRYA ELLIPTICA, 300, 1 to 2 feet, bushy.
HOLLY, Variegated, Gold and Silver, 1000, 9 to 18 inches.
LAURELS, 10,000, 1½ to 3 feet, bushy.
,, Portugal, 800, 2 to 6 feet, bushy.
LAURUSTINUS, 1000, Common and Black, 1½ to 2 feet; 1600, do., 9 to 12 inches.
PRIVET, Box-leaved, 2000, 1½ to 2 feet; 4500, 1-yr. Cuttings.
YEW, English, 500, 3½ to 5 feet, fine.
,, Irish, 300, 4½ to 6 feet, fine.
CEDRUS ATLANTICA, 800, 1 to 1½ foot.
CRYPTOMERIA ELEGANS, 100, 3 to 3½ feet, fine.
ACACIA, common, 40, 8 to 10 feet.
BIRCH, Silver, 175, 10 to 13 feet.
CHESTNUT, Horse, 300, 6 to 10 feet.
,, Scarlet, 300, 7 to 9 feet.
,, Spanish, 700, 6 to 8 feet.
ELMS, English, 50, 10 to 12 feet.
,, Chichester, 100, 10 to 12 feet.
LABURNUM, 50, 8 to 14 feet.
LIMES, 1000, 6 to 12 feet, clean and straight.
OAK, English, 75, 10 to 12 feet.
,, Turkey, 50, 10 to 12 feet.
POPLAR, ABELE, 50, 6 to 8 feet; 40, 12 to 14 feet.
,, Italian, 100, 6 to 8 feet.
SPRUCE FIR, 1800, 2½ to 3 feet, fine for Christmas trees.
,, ,, 1500, 1 to 1½ foot.
THORN, Paul's Scarlet, Standard, 400, 6 to 9 feet.
WILLIAM HOCKIN, The Nurseries, Taunton, Somersetshire.

RICHARD WALKER, Market Gardens, Biggleswade, can still supply any quantity of the best CABBAGE PLANTS in England: Red Dutch Pickling Plants, 4s. per 1000, and all sorts of Green Plants, 2s. per 1000. Connover's Colossal ASPARAGUS, good plants, 3 yr. old, 2s. per 100, or 15s. per 1000; 1-yr. old, 5s. per 100. SEAKALE for forcing, 8s. per 100. Best Sovereign RHUBARB ROOTS, large clumps, 6s. per dozen for forcing. LEMON THYME, 8s. per 100 for planting. SAGE, for planting, 3s. per 100. Dark WALLFLOWER and dark SWEET WILLIAM, for planting, 1s. 6d. per 100. Terms Cash.

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Introduced this fine variety last spring. It has proved itself to be one of the best flavoured and handsomest in cultivation, and good for winter work.

Price 2s. 6d. per packet.

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BROCKWORTH PARK PEAR.

The fruit of this remarkable Pear is very large and handsome, the flesh is juicy, melting, and of fine flavour, ripening about the end of September or beginning of October. The colour is yellow, richly dotted, slightly crimson next the sun. It has been awarded a First-class Certificate of Merit by the Royal Horticultural Society.

Fine Pyramids .. .. .. 2s. 0d. *each.*
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We can supply one dozen choice Pyramid Pear Trees of the most delicious sorts, our selection, including Brockwork Park, for 18s.

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KINGSHOLM NURSERY, GLOUCESTER.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
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Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d.; Planting, 2s. 6d. to 5s.

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MANETTI STOCKS, 2000.
ASPARAGUS, Connover's, 2000, 2-yr. transplanted.
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Quantities of LILACS, GUELDER ROSE, SHRUBS and CONIFERÆ of sorts, of large size; and general NURSERY STOCK, all well rooted.
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PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Christchurch, Hants.—BROWN, FIBROUS, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turfs and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s.; five bags, 21s.; 12 bags, 40s. Some also, of good quality, at 13s. 6d. per ton, four tons and upwards.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 21s. per ton.
Delivered on rail at Bluckwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 5s. 6d.; 5 bags, 25s.; 12 bags, 50s.
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PEAT, Brown Fibrous, superior quality for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16s. per ton, or £4 10s. per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.
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COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3d. per bushel, 100 bushels (33 bags) 20s. Truck-load (loose) 30s., put free on rail; 7s. for One-horse Van-load, if fetched from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and many eminent Gardeners.
3d. per bushel; 100 for 20s.; truck (loose, 250 bush.), 30s.;
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LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s., or 36s. per ton.
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The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

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GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
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Important to all Admirers of Clean, Healthy Foliage.

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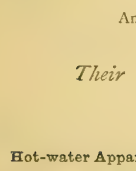


PARASITE ANNIHILATOR

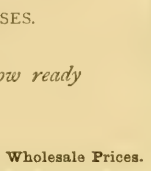
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Mr. W. THOMSON, of *Frieed Vineyard, Clevenfords*, writes: —"You are entitled to the gratitude of all who have to battle with the parasites that infest plants for your discovery; amongst collections of Orchids and stove plants it will be invaluable."
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Sold in bottles at 2s., 3s. 6d., 6s., and 10s. each.
It is most economically applied with a Vaporiser, price 2s.
Prepared by Alfred Lowe, Chemist, Chesterfield.
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MR. JOHN MATTHEWS

Respectfully calls the attention of Gardeners and others to the following letters bearing testimony to the superior quality of the Garden Pots manufactured by him. Price List free. Orders receive prompt attention. Any quantity sent, from one dozen to one hundred thousand.

MENTMORE, LEIGHTON BUZZARD, September 18, 1878.

"DEAR SIR,—I am glad to say the Seven Crates of Pots you sent here came all safe to-day. You may be glad to know that none of them were broken—all as sound as when they left your Pottery. I may safely say this is the first time I have ever received goods in such condition. This is no doubt owing to your excellent method of packing. You should make this known, that you can send Pots any distance without a single one getting damaged.—I am, dear Sir, yours truly,

"J. SMITH, Gardener to the Earl of Rosebery.

"To Mr. JOHN MATTHEWS, Royal Pottery, "Weston-super-Mare."

THE GARDENS, STREATHAM HALL, EXETER, September 30, 1878.

"MY DEAR SIR,—Enclosed is your account, and Post-office Order for same. The Pots are of first rate quality, suitable for any purpose required. I may say they are the best Pots I ever used.—I am, yours truly, "HENRY BEDDARD.

"To Mr. JOHN MATTHEWS, Royal Pottery, "Weston-super-Mare."

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CARRIAGE FREE.

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	Per dozen.—s. d.
HYACINTHS, superb exhibition varieties	12s. to 18 0
,, choice named varieties, for pots or glasses	9 0
,, good	6 0
,, mixed, red, white, or blue	3 0
,, miniature, with names	3 6
,, white Roman, for forcing	3 0
CROCUS, large Dutch, blue, white, striped, or yellow,	each, per 100 2 0
,, superb named varieties, blue, purple, pure white, golden-yellow, pencilled, &c.	each, per 100 3 6
,, choice mixed, all colours	1 4
SNOWDROPS, large single	per 100 2 6
,, large double	per 100 2 6
TULIPS, Van Thol, scarlet	1 6
,, Pottebakker, white	1 6
,, Tournesol, double	1 6
,, Rex Rubrorum, double	0 9
,, La Candeur, double	1 3
,, choice mixed, double	per 100, 5s. 6d. 0 9
,, choice mixed, single	per 100, 5s. 6d. 0 9
ANEMONES, splendid double varieties, named, in ten choice sorts	per 100 10 6
,, double scarlet, fine	per 100 7 6
,, double, finest mixed	per 100 4 0
,, single, finest mixed	per 100 4 0
LILY OF THE VALLEY, strong clumps for forcing,	each, 1s. 10 6
POLYANTHUS NARCISSUS, choice mixed	2 0
SCILLA AMŒNA, beautiful blue dwarf	1 0
JONQUILS, single, sweet scented	100, 5s. 6d. 0 9
LILIUM AURATUM	each, 1s. 10 6
,, CANDIDUM, the old pure white	4 6
,, choice named varieties	6s., 9s. and 12 0

All Orders of 10s. and upwards carriage free.

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Of choice FLOWER ROOTS for Open Ground, &c., contains the following liberal assortment :—

25 Hyacinths, choice mixed	100 Snowdrops
18 Polyanthus Narcissus, mixed	12 Tulips, Van Thol, scarlet
12 ,, Cottage Maid	
12 Narcissus Poeticus	12 ,, Yellow Prince
12 ,, double white	25 ,, double, mixed
6 Campernelle Jonquils	12 ,, Rex Rubrorum
25 Anemones, fine, double	12 ,, late, mixed
25 ,, fine, single	12 Scilla amœna
50 Persian Ranunculi, mixed	4 Lilies, of sorts
50 Turban Ranunculi, in four varieties	12 Spanish Iris
150 Crocus, in six varieties	12 Primroses, beautiful varieties, mixed

With full cultural directions. Double quantity, 40s. ; half ditto, 12s. 6d. ; quarter ditto, 6s. 6d.

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THE ROYAL NORFOLK SEED ESTABLISHMENT,

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OF

FLOWER BULBS

Produce a Succession of Beautiful Flowers during Winter and Spring.

For Growing in Glasses, Pots, Vases, &c.

10s. 6d., 21s., 42s., and 63s. each.

For Outdoor or Open Border Decoration.

10s. 6d. 12s. 6d., 21s., and 42s. each.

For Greenhouse or Window Boxes.

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☞ *These Collections contain a liberal assortment of the finest varieties in cultivation.*

	Per dozen—s. d.
HYACINTHS, extra choice selected	12s. to 21 0
,, for Pots or Glasses	9 0
,, Fine Varieties	6s. and 7 0
,, Mixed, Red, White, or Blue	3 6
,, Early White Roman	3 6

	Per 1000. s. d.	Per 100. s. d.
CROCUS, Large Blue, White, Purple, Yellow, Striped, &c., extra fine selected	18 0	2 0
,, Various Colours, Mixed		1 6
SNOWDROPS, Single or Double, fine		2 6

WEBB'S SUPERB TULIPS,

SINGLE or DOUBLE.

100 Extra Selected, in 25 varieties	16 0
50 ,, ,, 10 ,,	7 6
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12 ,, ,, 6 ,,	2 6

POLYANTHUS NARCISSUS, extra fine, per 100, 15s. ; per dozen, 2s.

ANEMONES, RANUNCULUS, LILIUMS, &c.

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Price 6d., post-free; Gratis to Customers.

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AVENUE AND STREET PLANTING.

*** The Trees here mentioned have been grown expressly for Avenue or Street Planting, for which objects they have had ample room and thorough exposure, and have not, as often happens, been made to acquire height at the expense of stoutness by overcrowding. They have straight stout clean stems, and handsomely-furnished well-balanced heads ; and from frequent transplanting are splendidly rooted. They are, without doubt, the finest stock of Avenue Trees to be met with in any Nursery in Europe, and we challenge comparison. The girth of the stems is taken at 4 feet from the ground, and not at the base, which is often deceptive.

PLANES (Platanus occidentalis—the true London Plane).

10 to 12 feet high, girthing at 4 feet from the ground, 4 to 5 in.
12 to 14 ,, ,, ,, ,, 5 to 6 in.
15 to 20 ,, ,, ,, ,, 7 to 9 in.

*** We believe it will generally be admitted that the most successful Avenue in London is that on the Thames Embankment, from Blackfriars to Chelsea, the trees for which were supplied by ANTHONY WATERER. **Those trees at the time they were planted were altogether inferior to these now offered.**

POPULUS CANADENSIS NOVA.

10 to 12 feet high, girthing at 4 feet from the ground, 4 inches.
14 to 15 ,, ,, ,, ,, 5 inches.

*** This new variety is a grand improvement on the well-known Black Italian Poplar, being more vigorous in growth, with larger and denser foliage. It is the most reliable and satisfactory tree to plant in smoky and exposed districts, and in manufacturing towns, especially in the North of England.

LIMES (Tilia europæa).

12 to 14 feet high, girthing at 4 feet from the ground, 6 inches.
15 to 16 ,, ,, ,, ,, 7 to 9 in.
16 to 18 ,, ,, ,, ,, 9 to 11 in.

HORSE CHESTNUTS (Æsculus Hippocastanum).

12 to 14 feet high, girthing at 4 feet from the ground, 5 to 6 in.
14 to 16 ,, ,, ,, ,, 7 to 8 in.

SCARLET HORSE CHESTNUTS (Æsculus rubicunda).

13 to 14 feet high, girthing at 4 feet from the ground, 6 inches.

SILVER MAPLE (Acer dasycarpum).

12 to 14 feet high, girthing at 4 feet from the ground, 4 to 5 in.
15 to 16 ,, ,, ,, ,, 6 inches.

SYCAMORE (Acer Pseudo-Platanus).

14 to 18 feet high, girthing at 4 feet from the ground, 5 to 7 in.

*** The stock of these Avenue Trees comprises many thousands. Purchasers who are desirous of securing the finest trees, of uniform character, that are in the market, are invited to come and see them growing in the Nursery. We engage that they will not be disappointed as regards quantity, or quality, or price.

ANTHONY WATERER,

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CHEMICAL MANURES.

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In 1 Cwt., ½ Cwt., and ¼ Cwt. Bags, and in Canisters, as usual.

RECENT TESTIMONIALS.

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"The results of my two years' trials of Amies' Manure, both upon Flowers and Vegetables, have been most satisfactory."

Messrs. Harrison & Sons, Leicester, the well-known Seedsmen.

"We have tried Amies' Manure with a variety of Plants and Vegetables, &c., and are satisfied that it is an excellent sustaining article as an artificial Fertiliser."

Mr. C. Ewart, Horticultural Superintendent to the Alexandra Palace.

"It gives me great pleasure to speak most highly of your Manure, having tried it on Fuchsias, Solanums, Hydrangeas, Pelargoniums, and Adiantums, with most excellent results both in bloom and foliage."

WRITE for DESCRIPTIVE PAMPHLET.

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(LIMITED),

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FLOWER BULBS,

CARRIAGE FREE.

SUTTON'S
SUPERB HYACINTHS.



CHOICE COLLECTIONS
FOR
POTS and GLASSES.

100 Hyacinths, in 100 very choice sorts	..	£4	4 0
100 Hyacinths, in 50 very choice sorts	..	3	10 0
50 Hyacinths, in 50 very choice sorts	..	2	2 0
50 Hyacinths, in 25 very choice sorts	..	1	15 0
25 Hyacinths, in 25 very choice sorts	..	1	1 0
12 Hyacinths, in 12 extra fine sorts	..	0	12 0
12 Hyacinths, in 12 choice sorts	..	0	9 0
12 Hyacinths, in 12 good sorts	..	0	6 0

The order should specify whether they are intended to be grown in water or earth, as all kinds are not equally suited to both purposes. It should also be stated whether single or double-blossomed sorts are preferred. The single varieties generally thrive best in water, but their merits are never apparent until the flowers are fully expanded.

"I congratulate you on the very superior quality of your bulbs. 100 Hyacinths purchased of you are a grand lot, remarkable both for enormous size and great variety of colour."—Mr. T. Sillence, Jun., *The Gardens, Roche Court.*

"The Hyacinth bulbs supplied by you in the autumn have turned out magnificently. The trusses are splendid."—W. Hawley, Esq., *Ash, Farnborough.*

How to Grow Flower Roots successfully.

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YET PUBLISHED.

PROFUSELY ILLUSTRATED.

Price 6d. post-free, or gratis to Customers.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.



SATURDAY, OCTOBER 12, 1878.

JOTTINGS IN THE NEW FOREST.

AMONG our great public parks the New Forest holds a peculiar position. It is throughout entirely free and open, though a large portion of it is occupied with enclosed plantations and nurseries, yet over the whole of its large area (between 60,000 and 70,000 acres) there is complete liberty to every one to roam as he pleases, whether he is walking, riding, or driving. This by itself gives a great charm to the Forest; the liberty over such a wide range of country is almost a new sensation to many; and when to this is added that this liberty to roam is not over some barren, uninteresting district, but over a range of country full of beauties (which are not less beautiful because almost peculiar to itself), which can easily be reached from London within three hours, it is wonderful how very few people are personally acquainted with it. It is a perfectly unique piece of English scenery, which is quite unknown to the majority of English travellers, but which I think none would visit without pleasure. For many years I have wished to visit the Forest, and at last I was able to devote a week's holiday to it, and as I think our plan of action enabled us to see it as thoroughly as it can be seen in a week, I hope that a few jottings of our walks may be acceptable to the readers of the *Gardeners' Chronicle*. I say "our" plan, because I had the advantage of a congenial friend as *co-voyageur*.

After a pleasant day at Winchester (always interesting) we went to Lyndhurst, and put up at the Crown Inn, which we made our head-quarters for the week, and very pleasant head-quarters we found it; clean and comfortable, with a very obliging staff and very reasonable charges.

For the first day's walk we went to Brockenhurst. This is on the high road from Lyndhurst to Lymington, and writers on the Forest speak of it as the most beautiful drive in England. We did not agree in that verdict. The road goes through some very characteristic portions of the Forest, but it is so straight that it spoils the effect to a great degree. There are, however, beautiful peeps into the Forest, and it is the best known of all the Forest roads. After a short stay at Brockenhurst to see the church, which has no beauty except its situation, and nothing of interest except its square Norman front and an immense old Yew, we walked on to Beaulieu.

This part of the walk was for a long way through young plantations, in passing through which the chief interest lay in watching the vain endeavours of the New Forest fox-hounds to make a fox leave the immense cover. For 3 miles nearer Beaulieu the road goes over a large heath, almost entirely of Ling, which must be very beautiful when the whole extent is in flower, but in autumn is a dull brown. The horizon however relieved it, showing the hills of the Isle of Wight in their full extent. At Beaulieu the ruins of the abbey are not so interesting as the beautiful pulpit in the refectory (now used as the parish church). This pulpit is well known to archæologists as a beautiful specimen of thirteenth century work, but none of the many engravings that I had seen of it do justice to it, because none give the beautiful arcaded passage

leading to the pulpit and formed in the thickness of the wall.

From the church we looked at the handsome house so cleverly converted from the old gate-house, and walked through Lord Henry Scott's garden; but as the permission to do so was a very qualified one, we could do little more than admire the well-kept lawn, and so pass on. From Beaulieu into Lyndhurst our road went for about two miles through a very pretty part of the Forest; the remaining four miles was over a somewhat dreary moor, skirted by bogs, full of Asphodel with its bright fruit, and other bog-plants. This, which was the longest day's march (about eighteen miles in all), would perhaps be the best walk for any one who could only give one day to the Forest, as it showed all the varieties of the Forest—long grassy glades, heath, moor, and bog, together with almost the only large stream in the district.

For our second day we had only an afternoon walk, to the north of Lyndhurst, through Minstead, where a portion of the Forest has been in the hands of the Compton family so long that it is in good cultivation, and perhaps (but this is very doubtful) shows what the whole Forest might produce if disforested and enclosed. From Minstead we went to Rufus' Stone. This is among some of the prettiest glades in the Forest, and it is a point of pilgrimage for every visitor, but even there it is hard to get up any enthusiasm for the slain king, who was probably the greatest ruffian that ever sat on the English throne. This part we saw in rain, which was so determined that we felt it would be useless to extend our walk to the high ground about Fritham; so we turned back by Stony Cross Inn and Stony Cross Plain homewards. It rained pitilessly, so that all we could do was to make the best way we could to our comfortable inn.

Our third day's walk took us at once into the Forest, which on the west of Lyndhurst begins almost close to the village, towards Boldre Wood. This is all pure forest, and both Oaks and Beeches are magnificent; and the ground near Boldre Wood is almost the highest ground in the Forest. Boldre Wood opens directly into Mark Ash, a most beautiful wood, chiefly of grand Beeches, but also with some noble Oaks. I think altogether that this is the most beautiful wood in the Forest, and has certainly the most primæval look. From there we went to Burley Lodge, to see the "Twelve Apostles." These are some noted Oaks, which are still marked in the maps, but are mostly gone. One, however, still exists near the bailiff's lodge, a hollow old monster, whose hollow trunk has been utilised into a pigstye. From there by Vinney Ridge, where there is said to be a heronry (which, however, we did not see), and so back by the Christchurch and Lyndhurst Road, turning aside about a hundred yards from the road to see the Knight Wood Oak, said to be the finest in the Forest, and certainly for size and vigour one of the finest I have seen. All this walk was through pure forest, broken only by long and most beautiful grassy lawns, and was on this account the pleasantest though not the most varied of our walks.

The following morning we gave up to Lyndhurst, for the village was all astir with excitement on account of a gay wedding, and very pretty the little place looked hung with bunting in every direction, with the sun shining brightly, and the one street full of people anxiously waiting for the event. At all times it is a pretty village, being on a slight hill surrounded by forest, and with its fine church and spire crowning the whole. The church is modern brickwork, and, though very peculiar, has some very admirable points. The carving in the interior of native plants, with their flowers, foliage, and fruit, is a thing to delight the eyes of a lover of plants; while the entire east end, under the east window, is filled with a fine fresco, by Leighton, of the Wise and Foolish Virgins. Of course, such a church would not please everybody, and I could not admire the windows (which are more grotesque than even the generality of modern windows), and still less could I admire the clock which we were condemned day and night to hear; not only the hours, but the quarters struck on the most unmusical chimes that it was ever my misfortune to listen to. They, however, are not part of the Forest, and it is to be hoped they will before long be stopped. Let me go back to something pleasanter. After the wedding we started to conclude the circle of the Forest by going again by the Christchurch Road to the stream called the Highland Water. This we followed down till we came to the Queen's Bower, an open wood, so well named, for the trees, being so far apart, are all good specimens, and, having the advantage of the running stream close by (a rare feature in the Forest), it is a very pretty specimen of woodland scenery. Thence crossing the Brockenhurst Road (which we had travelled on our first day), we worked our way through the woods till we found the Beaulieu Road, and so completed the circle. The following day we left, thoroughly pleased with our walks.

Though I think every one who visits the Forest will be more or less gratified, yet visitors would do well to know beforehand what they are not to expect. There is nothing grand in the Forest, and nothing beautiful apart from the trees. There are no very salient points, no rock scenery, no rushing streams, and no hills—nothing but gentle undulations (the highest point is not over 300 feet) covered with trees, with a rich undergrowth of Fern, and varied either with large and long lawn-like sweeps or with open heaths. If the trees were away it would perhaps be the ugliest extent of ground in England, but with its trees it is one of the most beautiful; and not only that, but I have been assured by those who have seen more of foreign forest scenery than I have seen, that considered simply as forest scenery it will bear a favourable comparison with any other forest in Europe.

As to its productions, the New Forest is well known as a favourite hunting-ground both for the ornithologist and entomologist, but visiting it in the end of September, the point that struck us very forcibly was the almost entire absence of animal life. In our first (and longest) walk we saw one hare and one rabbit, and that was all, and our subsequent walks yielded very little more. Of birds we saw very few, though we occasionally heard a jay, and of squirrels we saw none. In the streams we saw no signs of fish, and as the deer are reduced to a very few (and they would no doubt do much harm in the plantations, but the open parts seem much to call for them), the chief animals seen are the ponies. These form a very pretty feature in the landscape; they show more breeding than the Welsh or Exmoor ponies, and as the prevailing colour is grey or white, they almost suggest an infusion of Arab blood.

As to the botany, the district is very rich. At this time of the year the chief plants in flower are Ulex nanus and Erica cinerea (often of a wonderfully deep and rich colour), and E. Tetralix. The Ulex nanus is most beautiful just now, and the procumbent habit (the plants often nestling under the tall U. europæus) and pale primrose flowers are very distinct. It would certainly make a good rockwork plant, but it is very difficult to get up, and the best way of rearing it would probably be by seeds. I was not botanising, but I was fortunate enough not only to distinguish the perishing stems of the rare Spiranthes æstivalis in the Lyndhurst bog, but also to meet with Pulmonaria angustifolia between Beaulieu and Lyndhurst, an unrecorded station. I also found a pure white and a pure pink variety of Scabiosa succisa, which, if constant, will make pretty garden plants. The sweet-scented Lastrea Oreopteris was very common, and in all the bogs both the Droseras (D. rotundifolia and D. longifolia) were abundant.

To the geologist the district does not offer many attractions. The whole Forest is a mass of sand and gravel and rolled chalk-flints, which have been washed down from the adjacent Wiltshire hills by the sea, which once flowed over the whole. The soil is, in fact, a (geologically) recent sea-bottom, with a very slight coating of humus, formed for the greater part, if not entirely, of the decayed leaves of the forest; though what the earliest primeval Oaks had to grow in is a puzzle. It is this shallow poor soil that is the practical answer to the demand for disforesting that from time to time arises. It can only be by the shelter that the trees give to each other, and to the few spots of enclosed land in the Forest that any cultivation is possible, and if the Forest were destroyed it seems almost certain that the greater part of the district would return to the barrenness of the seashore. Naturally it must be a cold district, for the Dahlias were cut by the frost more than a week ago, and we were glad of fires every evening, but the protection given by the trees, increased by the flatness of the district, is very great. This is shown in a marked way by the fact that I saw no trees that were storm-stunted in any direction.

I must add a few words on the Forest as a great wood farm. This is at present the reason of its existence, and though I do not think these 60,000 acres would ever be much good for anything else, yet we know that there is a constant outcry against this (so-called) waste of good land. The best answer to this is to make the Forest justify its existence by making it produce good timber in the greatest possible quantity. I wish to speak with all modesty on this point, but the impression left on us in our walk through the Forest was that it was not farmed as a wood-farm by any means to the best or fullest extent. Not to speak of the great extent of heath that still remains unplanted, I am sure that the trees in the open Forest and especially in the plantations are much too thick for vigorous or healthy growth. I speak within bounds when I say that at least one half of the trees in the open forest spaces might be cut with great advantage to the survivors, and with no diminution, and probably an increase, of beauty. And in the plantations the crowd is so great that I am sure two-thirds might go. It is a canon with most good foresters, that when one tree touches another it is time for the axe, and I do not suppose the New Forest is an exception, for wherever the trees are thinner than usual, and still more where they are isolated, there we find the best specimens.

But *hactenus hæc*—my jottings have gone quite far enough. My excuse for their length must be the pleasure I have myself derived from a few days' walk in the Forest, and my hope that others of your readers may be tempted into the same pleasant paths. I will only add that the walking is of the very pleasantest. All the roads are of the finest gravel, making fairer walking than the best garden walks; they are soft and elastic, yet never wet or dirty even after heavy rains. *Henry N. Ellacombe, Bitton Vicarage, Sept.* 30.

New Garden Plants.

TILLANDSIA (PLATYSTACHYS) KARWINSKIANA, *Schultes fil, in Roem. et Schultes Syst. Veg.*, vol. vii., part ii., p. 1209.*

A native of Mexico, first gathered a generation ago by Karwinsky. I know the plant only by the description of the younger Schultes, above cited. His specimen wanted root-leaves; but for the rest his full account of it agrees with our living plant so well that there can be little doubt of their identity. It belongs to the small group of Tillandsias with long-pointed leaves, and lax simple distichous spikes, its nearest allies being T. narthecioides, Presl; T. loliacea, Mart.; and T. cœrulea, H.B.K. Our plant was received not long ago from Mr. C. S.

* *Tillandsia (Platystachys) Karwinskiana.*—Foliis 20—30 dense rosulatis lanceolatis acuminatis subpedalibus facie subnudis dorso tenuiter lepidotis; pedunculo semipedali, foliis inferioribus linearibus basi dilatatis, superioribus bracteiformibus; floribus 8—12 in spicam simplicem laxam 3—4 poll. longam dispositis, bracteis oblongo-lanceolatis glabris 9—12 lin. longis; calyce bractea breviori; sepalis glabris lanceolatis obtusis; petalis uncialibus oblanceolatis violaceis; genitalibus exsertiis.

Sargent of the Cambridge Botanic Garden, United States, America, and flowered at Kew in December, 1877.

Whole plant about a foot high. Leaves 20—30, in a dense radical rosette, erect falcate, the dilated base 1½ inch broad, narrowed from an inch broad at the top of the base to a long point, a foot long, moderately firm in texture, pale green, nearly or quite naked on the face, thinly lepidote down the back. Peduncle half a foot long, the lower part sheathed by short linear leaves with dilated bases, which upwards pass gradually into bracts, like those of the spike. Spike simple, lax, distichous, 8—12-flowered, 3—4 inches long, under half an inch broad. Flowers adpressed to the rachis. Bracts glabrous, oblong-lanceolate, rolled tightly round the flowers, ¾—1 inch long. Calyx glabrous, ½ inch long, the glossy green coriaceous sepals free to the base. Petals oblanceolate, unguiculate, obtuse, permanently convolute, violet, 1 inch long, not scaled on the claw. Stamens exserted about ¼ inch beyond the petals. Stigma overtopping the anthers. *J. G. Baker.*

TILLANDSIA (PLATYSTACHYS) GARDNERI, *Lindl. in Bot. Reg.* 1842, sub t. 63.*

This is a dwarf Tillandsia, which has passed current for some time in English gardens under the name of T. argentea. This name is a very suitable one, as the plant is remarkable for its persistent coating of silvery lepidote scales, but it belongs of right to a different species, a native of Cuba, so named by Grisebach, which is not known in cultivation, and the present plant was named T. Gardneri long ago by Dr. Lindley. It is a native of the mountains in the neighbourhood of Rio Janeiro, and we have wild specimens of it in the Kew herbarium, gathered long ago by Gardner, Burchell, and Boog, and more recently by Professor Cunningham, of Belfast. The living specimen from which my notes were taken flowered at Kew in January, 1878, and was received from Mr. Prestoe, of Trinidad.

Whole plant about half a foot high. Leaves 30—40, in a dense radical rosette, lanceolate acuminate, 6—8 inches long, narrowed gradually from a base ½ inch broad to a long reflexing subulate convolute point, flat in the lower part, persistently clothed all over with fine white lepidote scales, the margin fringed with large deltoid membranous scales of the same kind. Peduncle 2—4 inches long, densely sheathed with linear-subulate lepidote leaves with large clasping bases. Spikes 4—8, lanceolate, distichous, about 1 inch long, ½ inch broad, congested into a dense rhomboid panicle 2—3 inches long, half hidden by the pointed bract-like upper stem-leaves. Bracts oblong-lanceolate, subacute, ½—¾ inch long, densely lepidote, much imbricated, greenish-white, rose-tinted. Calyx glabrous, ½ inch long; sepals oblong-lanceolate, obtuse. Petals red, lingulate, obtuse, about half as long again as the calyx. Style reaching to the top of the petals. Stamens a little shorter. *J. G. Baker.*

CATASETUM TRIODON, *Rchb. f., Otto, Hamb. Gartenz.*, 1857, xiii., p. 313.†

Mr John Day, in his last letter of June 9, a.c., alluded to a "lovely yellow shining Catasetum" he had seen in Mr. Alfred Borwick's garden, at Higham Hill, Walthamstow, grown by Mr. Walton. I supposed it might be something rare, since Mr. Mr. J. Day did not know it, and hence I felt very pleased when Mr. Borwick was so kind as to send me a complete inflorescence. I recognised immediately that old species I last saw some twenty years ago, having only twice had single flowers from Consul Schiller, grown by Mr. Stange. It was first indicated from Guatemala, the second time from Joinville. Since Mr. Alfred Borwick has now introduced it directly from Brazil, there is no doubt that the Guatemalese indication (given *bonâ fide* by me, *l.c.*) was a mistake, since Consul Schiller had but one plant.

To my taste this Catasetum is exceedingly lovely. The chief rachis is of a glaucous bluish green, and there are thirteen ascending flowers of a yellowish green tint, as large as those of the lovely Cycnoches aureum. The sepals are reflexed; the petals upright; the lip of the same colour, except the hollow in superior centre and the callus. The side-lobes of this organ are half-ovate, reflexed, deeply fringed, while the middle lobe is nearly square, now triangular, going out in a strong tooth, and with a few side-teeth and bristles. It has an angular exuberance under an orange rhomboid toothed or bifid or trifid callus, and the excavation of the lip has some colour and longitudinal furrows. I like it very much, though it boasts neither scarlet nor orange. The great question will now be, how long Mr. Walton keeps it: what will depend upon the fresh bulbs ripening well. The English having usually two good months more than we do at Hamburgh, are in a much more favoured position. *H. G. Rchb. f.*

* *Tillandsia* (*Platystachys*) *Gardneri*, Lindl.—Foliis 30—40 dense rosulatis semipedalibus lanceolatis longe acuminatis ubique pallide lepidotis, margine squamis magnis pallidis deltoideis fimbriatis; pedunculo 2—4 pollicari foliis permultis linearibus lepidotis basi dilatatis vestito; floribus permultis in spicas densas distichas lanceolatas dispositis in paniculam parvam rhomboideam aggregatis; bracteis oblongo-lanceolatis valde imbricatis lepidotis semipollicaribus; calycis glabri sepalis oblongo-lanceolatis acutis, bractea brevioribus; petalis lingulatis rubris calyce sesqui longioribus; genitalibus inclusis. —*Tillandsia argentea*, hort. Angl., non Griseb, nec K. Koch; *Anaphyptynm Kellnowi*, hort. Williams.

† *Catasetum triodon*, Rchb. f. *l.c.*—Racemo deflexo pluriloro, laxiusculo; bracteis spathaceis acutis ovarii pedicellati tertiam subæquantibus; sepalis oblongo-ligulatis acutis, demum reversis, tepalis cuneato oblongo-ligulatis apiculatis; labelli trilobi lobis lateralibus semiovatis fimbriatis lobo mediano subquadrato fimbriolato cum mucrone, carina rhombea longitudinali varie dentata seu fissa ante apicem; portione sub callo conico-gibbosa; columna curva trigona bicirrhosa. — Flores virides. Labelli callus et fundus aurantiaca.—Brasilia. —Col. dom l. Schiller et Alf. Borwick. *H. G. Rchb. f.*

EUCALYPTUS GLOBULUS.

So much attention is now being turned to this tree for plantations in Europe for sanitary purposes, that it may not be out of place to mention that it is only one out of a large variety of [so-called] anti-malarial trees, and by no means the best as regards the quantity and strength of volatile oil in its leaves, &c., nor the value of its timber, though the large size of its seed and its extraordinary quickness of early growth (as compared with its congeners) has forced it into notice, and as it does not thrive in all parts of these colonies even, it may be wise for those who are laying out plantations of it at home to also try some other kinds in case the one sort fails, either wholly or comparatively.

Nearly the whole [many] of our Australian trees are rich in these peculiar essential oils; and it is doubtless owing to this that the atmosphere is so exhilarating, and that no such thing is ever known as fever on newly-cleared lands (as in Canada, India, &c.). And now that the oil is becoming an article of commerce among us, Mr. Bosisto, of Victoria, has been analysing the extract from various kinds of trees, and by the result (as follows) E. globulus is almost the poorest one of them all; E. obliqua (Stringy-bark), 0.500; E. globulus (Tasmania), 0.719; E. goniocalyx (New South Wales Blue-gum), 0.914; E. leucocylon (species of Iron-bark), 1.060; E. oleosa (species of Mallee Gum), 1.250; E. amygdalina (New South Wales Messmate), 3.313; also E. bicolor and E. longifolia —two New South Wales species—have a much more powerful eucalyptic odour than any of the above; but as they have not been tested we do not know whether the percentage of oil is really higher or not.

Many of our varieties of Gums grow to enormous size. Some have been measured from 350 feet up to 400 feet, and even nearly 500 feet in height, and from 36 feet to nearly 50 feet in girth near the base; and as some of them flourish in our southern mountain ranges, where snow falls and lies for some time, and sharp frosts are common, there is no difficulty in selecting sorts that will grow in almost any temperate parts of Europe; and the timber of which, from its strength and durability, is more valuable than that of most European trees, irrespective of the sanitary value of the leaves and exudations while growing.

Should information be required as to the nature, growth and habitat of the above trees, Baron F. Von Mueller, of Melbourne; Dr. Woolls, of Paramatta, New South Wales; and Mr. Charles Moore, Director of the Botanical Gardens, Sydney, New South Wales, are both able and willing to give it most fully. It may possibly save many an enthusiastic planter much ultimate disappointment if he tries more than one kind in his plantation, and obtains the invaluable aid and advice of any of the above-named gentlemen first. *R. D. Adams, Sydney, New South Wales, August, 1878, in the "Times."* [To prevent disappointment it may be well to state that the anti-malarial property is not proven. Any tree that would grow with equal rapidity would probably be equally efficacious. EDS.].

DECIDUOUS TREES FOR PARKS.—No. I.

IN my last paper (p. 364) I suggested that in the new plantations with which it might be desirable to ornament the Parks, it would be well to plant in family groups. This, indeed, is now being followed in some of the best parks attached to different country seats, as, for example, at the Duke of St. Albans, near Newstead Abbey. The effect at this time of the year, when the trees consist of masses of considerable size, is striking in the extreme. At Milan the public gardens are planted in this way, and even though on a small scale there the effect is most satisfactory. At home, as I said the other day, there is in Kensington Gardens a fine group of Ashes, and near Victoria Gate in Hyde Park may be found a fine group of Acers. St. James' Park was at one time planted in this way, but owing to unfavourable conditions as regards soil few of the groups are now perfect, and it would be useless to replace the trees that are dead unless the park be better drained and the soil well aërated and limed, in order to counteract the sour condition in which it now is. The only trees that have succeeded under such conditions are Planes and Poplars, which do not dislike a wet soil.

Excluding Coniferæ, which do not withstand our London smoke, the first group that commands consideration is the Acers or Maples, amongst which is almost every variety of form and colour. This family was well represented at Chiswick in days gone by, for then there existed a fine collection, varying from the dwarf A. creticum to the stately large-leaved A. macrophyllum, and amongst deciduous trees few grow faster. The specimen of A. macrophyllum at Chiswick, one of the earliest planted in this country, after being planted seven years attained a height of 25 feet, and in 1845, or ten years later, it had reached 50 feet in height. In 1864 it was 80 feet in height, a fact which shows that this Maple may arrive at full stature even in little more than half a life time. A. eriocarpum, the tree principally used for street planting in America, and especially in Philadelphia, has a light and airy form and silvery leaves like those of Populus alba. This tree is suitable alike for avenues, parks, or gardens. A fine specimen of it used to be at Chiswick, and there is still one I believe at Fulham Palace, and another at Kew. With Acer Negundo variegatum most of us are familiar, but with A. Lobelii, all may not be conversant. It is, however, an excellent tree for ornamental planting, inasmuch as its form is tall and straight like that of some Poplars, and its bark is lined with white like that of the Snake-bark Maple (A. striatum). Than this and A. Negundo nothing could be more distinct as regards foliage, the last having leaves like those of an Ash, the former like those of a Lime. The best specimens of A. Lobelii with which I am acquainted are at Chiswick and at Paul's nursery at Cheshunt. One of the finest trees of the common Sycamore is at the end of the flower walk in Kensington Gardens. The following properly arranged would form an excellent group, viz.:—Acer barbatum, dasycarpum, coccineum, coriaceum, laciniatum, lævigatum, microphyllum, Pseudo-Platanus and its varieties, platanoides, floridum, circinatum, saccharinum, monspessulanum, nanum, macrocarpum, hybridum, rubrum, montanum, opulifolium spicatum, tataricum, and others. These are easily obtained and well adapted for park planting; they might, indeed, be planted around existing groups of old trees, which they would shelter, and by the time the latter had become worn out the young ones would be ready to take their place. In short, Maples, and especially the common Sycamore and A. macrophyllum, are highly ornamental trees.

Next let us take the Horse Chestnut, with the fine avenue of which in Bushy Park every one is acquainted. The best individual specimens of these which I have seen are at the Marquis of Ripon's, at Nocton Hall, in Lincolnshire. Here and there may also be found some good examples in Kensington Gardens. These Chestnuts should form centres for groups, and the Pavias, which are remarkable for their fine large spikes of flowers and comparatively dwarf growth, might form the outer circle. A few of the best of these with which to form a group are Æsculus Hippocastanum discolor, rosea, pubescens, Lyoni, pallida, carnea, hybrida, coccinea, orientalis, rubicunda, macrocarpa, flava, parviflora, glabra, canadensis, oxyacanthifolia, quercifolia, laciniata, rubra, cordifolia, and oblongata.

The Ash is one of the best of ornamental trees, though not so much planted now as it ought to be. Being a surface-rooting tree, it becomes when in hedgerows troublesome to the cultivator, but that objection would not obtain in the case of park scenery. The group in Kensington Gardens to which I have already alluded was, I believe, arranged by Loudon, and, as regards effect, planted as it is with an undergrowth of common Laurels and Foxgloves in spring it has few equals. Either for parks or woods Ashes are suitable, especially some of the more recently introduced American species, which grow more rapidly than even our common Ash. Where all are beautiful it is needless to particularise. We therefore give the following list, of which a fine

group might be made, viz. :—Fraxinus acuminata, americana, argentea, attovirens, calabrica, caroliniana, cinerea, curvidens, elliptica, epiptera, excelsior, expansa, lentiscifolia, lucida, juglandifolia, Ornus, americana, oxyphylla, pallida, nigra, ovata, pennsylvanica, platycarpa, quadrangulata, rotundifolia, salicifolia, simplicifolia, and viridis.

As a foreground tree or for shrubberies nothing can beat the different kinds of Cratægus, of which there are fairly good collections in St. James' Park, Kensington Gardens, and Lincoln's Inn Fields, but in both the parks named, owing to their being scattered about, they produce little or no effect. The same remark also applies to various parks in the country, in which the trees are planted too much upon the dotting system. Some are remarkable for the brilliancy of their flowers, as, for instance, Paul's Double Scarlet ; others for the size of their leaves, as Layi, the foliage of which is nearly as large as that of an Oak ; and a third section is worthy of planting for the colour and size of the fruit, amongst which may be found different tints of red, black, and yellow. The better kinds are all grafted on the common Thorn, which will grow in almost any soil. The following are a few of the best, viz. :—Cratægus altaica, apiifolia, arbutifolia, caroliniana, carpatica, coccinea, cordata, Crus-galli, cuneifolia, Douglasii, dentata, edulis, elliptica, eriocarpa, glandulosa, heterophylla, hybrida, incisa, dentata, laciniata, lobata, lucida, macracantha, neapolitana, nigra, odoratissima, orientalis ; the different varieties of Oxyacantha, such as the double scarlet and pink Thorns, pentagynia, pubescens, punctata rubra, Pyracantha nivea, pyracanthifolia, radiata, sanguinea, splendens, melanocarpa, punctata, and viridis.

Equally interesting with the Cratæguses are the different kinds of Pyrus, both flowers and fruit of which are very handsome, while the foliage shows great diversity of shade and form. What, for example, can be handsomer than the Mountain Ash (Pyrus Aucuparia), or the beautiful P. spectabilis, or even the dwarf P. floribunda ? In addition to these the following are well worth attention, viz. :—Pyrus amygdaliformis, angustifolia, apetala, baccata, chinensis, the various varieties of communis ; coronaria, Cydonia, elæagnifolia, Hostii, japonica, intermedia, linearis, Maulei, Michauxi, microcarpa, monstrosa, nepalensis, orientalis, prunifolia and its varieties, pubescens, rivularis, salicifolia, sanguinea, Malus floribunda, and the different kinds of Sorbus. *Joseph Newton, Landscape Gardener.* [The names are taken from the nursery lists, and require to be revised by some competent botanist. EDS.]

GUNTON HALL, NORFOLK.

LORD SUFFIELD'S seat, Gunton Hall, is situated in the eastern part of the county of Norfolk, and within five miles of the charming little coast town of Cromer. The place is within easy distance of the Gunton station, on the East Norfolk Railway, a line which connects Norwich with Cromer. The visitor to this place on approaching the Gunton Station will, if the family be resident, most probably behold an ensign floating above the tops of lofty trees ; let him, however, not flatter himself—like the writer—that it is the place for which he is bound, as he will soon find it out to be no such thing ; another mile must be traversed before the precinct of the Hall is gained. The fine prospects which meet the eye at various points along the road will, however, be so full of interest as not to make the journey at all irksome before the Hall is gained. This structure, with the offices belonging thereto, covers a considerable area of ground, and it occupies nearly a central position in the park, from whence charming and most picturesque views of the extensive and beautiful landscape, with its surroundings of water, woods, &c., are to be obtained.

The south front of the mansion comprises a piazza with a conservatory at each end. Ferns, Lycopods, and kindred subjects occupy one, which has the roof and sides covered with climbing plants—the Bougainvillea, with its showy bracts and diminutive flowers being eminently conspicuous amongst these. The other contains greenhouse plants, with climbing Roses and other subjects covering the sides and roof. In this house the centre bed is given up solely to the cultivation of the red and white Lapageria ; these plants have recently been introduced here, and already they are making rapid progress, and flowering profusely. At the end of the house, and parallel with it, is a turf race-walk 20 feet wide : this proceeds a considerable distance beyond the house, and terminates with a semicircular stone seat ; the intervening space, which is formed by a hedge, running in a line with it, and separating it from the carriage approach, is filled with a series of circular and other beds, which are filled with carpeting subjects in a very effective way. The wall which supports the walk is neatly hidden from view by good plants of Clematis in variety, climbing Roses, and other kindred subjects, and above it is an ornamental parapet with vases surmounting the pilasters at intervals : these are filled with Pelargoniums, &c., and altogether present an imposing aspect.

Immediately in front is the flower garden proper, a parallelogram in form, with a slight inclination to the south, having a broad walk down the centre which leads through some iron gates into the park, and on to the cricket-ground and the pavilion : a side walk at each end communicates with the front one, which with its ornamental parapet forms the boundary on this side. At appropriate distances, and near the margin of these walks, are some semicircular headed standard Portugal Laurels, in the finest condition of health and vigour. The flower-beds on the squares of grass between the end walks are laid out identically in a geometrical form, and present some points of merit as regards taste and elegance of design. By a happy combination of colour and arrangement these beds produce a striking effect, and reflect much credit on the able superintendent, Mr. Allan.

The terrace-walk before referred to runs parallel to the house, and this part of the structure has within a very recent date been much improved in appearance by an embellishment of climbing plants ; amongst these we noted down the following subjects as being particularly suitable for such purposes :—The somewhat new and beautifully effective Ampelopsis Veitchii, Ceanothus azureus, Viburnum plicatum and Awafuriki, the claret-coloured Vine, bearing fruit, Escallonia macrantha ; these in combination with vigorous-growing kinds, as Virginian Creeper, Lonicera aureo-reticulata, Wistaria sinensis, Williams' evergreen climbing Rose, and Jasminum affine, rambling over the light-coloured surface of the bricks of which the house is built, give a pleasing effect, and will ere long be densely covered with beautiful foliage and flowers.

The lawn-tennis ground is formed in a line with this walk, and in appearance is all that can be desired. A somewhat novel plan is introduced here by planting the descending banks with small Yew trees, which are kept low and closely clipped in, in lieu of having grass, which in such positions at times becomes scattered and brown. This method does certainly obviate the defects in the foreground. Within the ha-ha which divides the kept grounds from the park stand some grand ancient-looking forest trees of Oak, Birch, and Spanish Chestnut, and amongst these Cedars of Lebanon, evergreen Oaks, Phillyrea, and Junipers are interspersed. In close proximity is the Grove, a plantation which is intersected with glades, which bring more closely to view the grand proportions of the trees, with vistas which open up more distant points of interest and pleasure.

The forest trees here are noble in their proportions, and in the case of Oak, Spanish Chestnut, and Beech, I should say can vie with almost any in the kingdom. The monarch in this domain, which stands in a wood about 2 miles distant, is designated the Thorpe Oak : its circumference at 3 feet from the ground is 20 feet 3 inches, and it is about 40 feet high, still healthy and vigorous, and unquestionably sound. To all such a tree is indeed a treat to the lover of arboriculture, and only at certain places in this country can it be enjoyed.

In pursuing the course of this ride we come to the eastern section of the house, where the principal entrances to the mansion and other offices are placed. A large area of gravel is backed up by lawn, having sundry beds with Arundo conspicua and Pampas-grass as centre objects, surrounded with Tritomas and margined with Mahonia Aquifolium trimmed in, in the form of a hedge. In the midst of a cluster of trees stands Gunton Church, and before it the trees, two Abies Douglasii, which were planted by the Prince and Princess of Wales, and two Cedrus Deodara, planted by the Duke and Duchess of Edinburgh.

The prospect from here is very telling, and includes the noble herd of deer in the park and the lofty Gunton Tower, where the standard is hoisted when the family is resident, and which forms a landmark to be seen for many miles around this part of the country. By a circuitous walk and within a short distance, almost behind the church, is the fine old kitchen garden, which, inclusive of the slips, &c., outside the walls, covers about 6 acres. The arrangement of this garden was evidently designed for the purposes of practical utility, as it affords a large proportion of south wall and borders—two most desirable and important points in the economy of a garden which should always, in the formation of such places, have due consideration.

The boundary walls here are lofty, and run longitudinally from east to west ; these are connected at the ends by cross walls, and a centre one divides the whole. The principal walk runs parallel to the wall on the north side of the garden, from which it is separated by a 12-feet border margined with cordon Apple trees, some of which were well furnished with fruit of large size. On the other side of the walk is a row of pyramidal Pear trees, with hardy subjects, as Cloves, Pinks, &c., occupying the border between the trees. Ordinary light-coloured bricks turned on edge lengthwise form the edging to the walks in this department, which present a nice appearance, and afford but little shelter for slugs, &c., which is a great advantage. Altogether, from the two extremities this walk has an imposing effect. The different quarters and borders devoted to vegetables are well filled with produce, in quantities sufficient to indicate that large requirements in this way are needed.

Noticeable here is the cultivation of Asparagus, which is solely confined to the French method—individual plants in single rows. The growth in these plants is remarkably vigorous, and unquestionably they throw fine heads. The disposition of the various subjects in this department shows unmistakably that a proper systematic course of cultivation is practised.

The great extent comparatively of south walling here affords ready means for the cultivation of Peaches, Nectarines, and Apricots in quantity ; these are produced in abundance in their season, and the trees are in as flourishing a condition as possible. Other walls contain the usual proportion of Pear, Plum, and Cherry trees. In the open quarters and borders these kinds of trees are chiefly grown in a pyramidal form, but fruit on them, I understand, has not been over-abundant this season.

Alongside the main walk, on entering from the mansion, is the chief range of houses, which is divided by a cross walk. Nos. 1 and 2 form the first section. The former contains young and vigorous Vines, about four years planted, carrying a somewhat heavy crop of excellent Grapes of Alicante, Mrs. Pince's Muscat, Lady Downe's, and Gros Colman. Connected with it is the early Peach-house, having a front trellis under the glass with three trees to cover it, and a vertical one at the back wall of the house. All these trees are in a most satisfactory condition. Passing over the walk this range is continued and divided into four good serviceable compartments—No. 1, a vinery planted two years ago, the Vines in a very promising state for the forthcoming season, and with some good examples to test the state of cultivation on them now, the sorts being confined to Muscats and Mrs. Pince's. No. 2, Black Hamburghs, nearly over, but still in good order. No. 3, a Peach-house, with newly planted trees. No. 4, Black Hamburgh. This house contains a Vine about fifty years old, which yields excellent samples of Grapes. The next range of glass is situated in an outer garden, and includes four divisions of good useful semi-span houses. The first is devoted chiefly to Orchids and stove subjects, the second to similar plants for furnishing and embellishing the room, &c., at the house at this season, and to early Melons afterwards ; third, late Melons now, and used as a Strawberry-house through the season ; fourth, now devoted to Fig trees in pots, and subsequently to forcing Roses and other subjects for cutting and decorative purposes. In front of this range is another of pits used for Cucumbers and Melon growing, and for such plants as Gardenias, Eucharis amazonica, &c.

From here a winding walk proceeds through a plantation of specimen trees, which include some gigantic Silver Spruce and fine shrubs, until it reaches the residence of the able superintendent, Mr. Allan, under whose direction and management the details belonging to this extensive establishment are most efficiently carried out. *G. T. M.*

HARDY STONECROPS: SEDUMS.

(*Continued from p. 376.*)

†† Leaves scattered, not tufted.

§ Stem erect.

17. S. POLYTHRICUM, Linn. fil. Suppl., t. 242.

Glabrous, subintescent.

Roots fibrous.

Stem erect, 6—10 inches, greenish or purplish, slender, branched.

Leaves alternate ⅓ distant, 1½ by 1 inch, stalked (stalk ¼—½ inch) ovate, acute, subcordate, coarsely and irregularly toothed.

Flowers numerous, nearly ½ inch diameter, whitish or pinkish, in terminal much branched corymbose cymes.

Flower-buds ovoid.

Calyx-tube very shallow, sepals 1 line, lanceolate.

Petals three times longer than the sepals, lanceolate, 1-nerved.

Stamens pinkish. Anthers purple.

Carpels glabrous, white, or greenish. Scales pinkish.—Fl. August, fragrant, like Hawthorn.

D.C., Plantes Grasses, t. 110; Bot. Mag., t. 211.

Siberia.

A very distinct species, easily recognised by its erect shrubby habit, stalked leaves, and corymbs of whitish fragrant flowers. Though perfectly hardy on the rockwork or in the border it makes a charming pot plant for the greenhouse.

§§ Stems, at least the barren ones, prostrate, creeping.

‡ Flowers yellow.

18. S. KAMTSCHATICUM, Fisch. ex Ledeb., Fl. Ross. ii., 182 (1844).

Glabrous. Branches 6—10 inches long, greenish or pinkish, as thick as whipcord; flower-stems erect, 4—6 inches.

Leaves alternate or opposite, 1¾ inch by ½ inch, oblong-obovate, deep green, coarsely but regularly toothed above the middle, tapering gradually into the petiole, edges minutely papillose.

Flowers numerous, ¾ inch, yellow, in terminal, umbellate, inversely pyramidal cymes 1—3 inches in diameter.

Peduncles radiating, straight or flexuose, with large leafy bracts at the base.

Buds conical, pointed.

Sepals greenish, deltoid, acuminate, less than half the length of the spreading yellow, lanceolate, apiculate, keeled petals.

Stamens shorter than the petals, nearly all of the same length; filaments yellowish; anthers subglobose, orange.

Carpels spreading so as to form a stellate fruit, glabrous, as long as the stamens, oblong-lanceolate, compressed, tapering above into a short style, at first yellow, but afterwards ruddy brown.—Fl. late autumn.

Native of Kamtschatka, Korea, and Japan.

This species has the creeping habit of S. stoloniferum, with the flower and fruit of S. Aizoon. It is suitable for the rockwork or the front of the herbaceous border. In some gardens it is called S. Selskyanum, but this is a different plant.

19. S. HYBRIDUM, Linn. Sp., 617.

Stems creeping, glabrous, or with glandular hairs.

Leaves alternate, stalked, about 1 by 1½ inch, spatulate, coarsely toothed in the upper half, entire, and tapering in the lower part, teeth red tipped.

Flowers numerous, yellow, in terminal much branched umbellate inversely pyramidal cymes, 2—3 inches in diameter; peduncles horizontal or reflexed, with large spreading entire leafy bracts.

Buds oblong, pointed, ribbed.

Calyx-tube very short; sepals linear obtuse, half the length of the concave linear, apiculate yellow petals, which latter measure ½ ¾ inch.

Filaments yellow. Anthers orange.

Carpels erecto-patent, compressed, glabrous. Scales whitish.—Fl. summer.

S. altaicum Don.

Siberia.

The S. hybridum altaicum of some gardens seems to be essentially the same, and with glabrous stems. It is suitable for rockwork or the front of the border. In some nurseries a form of this species with very deep green leaves and glabrous stems is grown under the name S. Hillebrandi, but it is not the plant so named by Fenzl.

20. S. JAPONICUM, Siebold, in Herb., ex. Regel, Gartenflora, 1866, t. 513, fig. 3, 4, p. 106.

Glabrous. Stems diffuse.

Leaves scattered or opposite, sub-reflexed, spreading, spatulate, oblong acute, entire, convex below, channelled above, bright green.

Flowers yellow, half-an-inch in diameter, in loose terminal and lateral panicled many flowered cymes.

Buds ovoid, acute.

Sepals oblong.

Petals lanceolate acute, twice the length of the sepals.

Carpels shorter than the petals, erect.

Japan.

We have not seen this species.

SELECT TREES AND SHRUBS FOR OUTSIDE WALLS.

(*Continued from p. 410.*)

Fremontia californica.—Few introductions from the rich Californian region can rival this highly ornamental deciduous tree. When planted against a wall it forms spreading, regularly branching specimens, with the young shoots covered with a rich brown tomentum. The leaves are cordate and indistinctly three-lobed, covered with a white mealy substance on the under-surface; the upper is deep green, which contrasts finely with the pure yellow spreading blossoms, about 2 inches across, borne singly on short spurs, with which the tree is profusely studded in the early part of summer, rendering it for a long time a very attractive object. It also flowers in autumn, though in less abundance. It thrives best on a west or north wall, as too much exposure to direct sunlight is injurious to it. It needs beheading now and then, in order to keep the lower part in good condition, as it has a tendency to grow high. Though over a quarter of a century has elapsed since its first introduction to cultivation, it is but seldom met with in gardens, but will doubtless become popular when better known. [It flowers freely in the bush form in Mr. Parker's nursery.]

Ribes speciosum is one of the showiest of an otherwise rather unattractive genus, as far as can be judged by the species in cultivation. In its native habitat in California it grows many feet in height, with stems often 4 inches in diameter. When planted against a wall it thrives well in this country, and even in some favoured localities without such protection. The stem and branches are thickly beset with brown bristly prickles; the leaves are roundish, with three coarsely-toothed lobes, and are nearly evergreen. They are large and very handsome, much resembling those of Fuchsia, of a bright red colour, and hang gracefully in clusters of two to four from the axils of the leaves on the slender lateral branches. Altogether it is one of the most pleasing shrubs we have, and should be included in every collection. Probably it is known by some under either of its synonyms, R. fuchsioides and R. stamineum.

Diplacus glutinosus.—This evergreen shrub, though an old inhabitant of gardens, is nevertheless one of the finest introductions from California, and the fact that it is quite hardy when planted against a south wall much enhances its value. It is of erect habit and when well-established grows to a height of 6 feet, with pale brown branches and deep green lanceolate leaves, from the axils of which are produced the solitary flowers, which are very variable in size, colour and form: in the type they are rather small, of a pale yellow colour, and there are now numerous well marked varieties, of which the following are the principal:—Grandiflorus, flowers much larger than the type, of a pale salmon colour, and the corolla lobes more deeply cleft; puniceus, flowers approaching scarlet, with lobes more shallow; latifolius, leaves broader, flowers yellow, with broad shallow lobes; aurantiacus, flowers large, bright orange colour. It should be trained against a south wall in good soil, and as it inhabits the borders of streams, &c., it should have a copious supply of water during the growing season. It commences to flower in April, from short spur which gradually lengthens to 1 foot or more, with a continuous succession of blossom until November, during which time it forms one of the most attractive plants we have in the outdoor garden.

Choisya ternata is a fine Mexican evergreen shrub of erect habit, and growing about 6 feet in height. The leaves are opposite and ternate, are compound, with obovate dark green leaflets full of pellucid dots. The flowers, which resemble those of the Orange in colour and form, are borne in dense terminal panicles. It is quite hardy in the southern parts of this country with the protection of a wall, and even flourishes as a standard in the more favoured localities. It succeeds well on an eastern or western aspect, planted in a compost of loam and peat with the addition of a small quantity of sand and leaf-mould. It has been introduced many years, but has not been grown to the extent that it should be even in greenhouses.

Cestrum.—The following well-known species have long been popular greenhouse favourites, and now should be included in the list of open-air wall-plants, since they have withstood the past few winters under that treatment in various parts. The three following species are probably better known under the generic term of Habrothamnus, but are now placed with Cestrum. C. corymbosum is apparently the hardiest, and thrives even more vigorously than when grown under glass, flowering regularly and freely, the long racemose branches of deep pink flowers being often 10 inches long and 4 inches in diameter. It is also not inelegant when not in flower, with its broad ovate foliage, and the young shoots covered with a dense purplish pubescence. C. fasciculatum is another highly decorative shrub, much resembling the former, but with leaves longer and narrower, and the flowering branches more erect; it is an autumn flowering species, the former flowering in early summer. C. elegans is another well-known autumn flowering species, with pendulous and denser flowering branches. All the above are natives of Mexico, and doubtless all are perfectly amenable to training to outside walls. Not less hardy is the golden flowered C. auranticum, which inhabits various parts of Guatemala, &c. The colour of the flowers, the shining and smaller sized leaves, are characters sufficient to distinguish it from the other species in cultivation, and it is a very desirable shrub either in a greenhouse or otherwise.

Abelia floribunda is one of the very few New World species of this ornamental genus, and is also one of the showiest. It is a native of Mexico, and was first discovered on the Cordillera of Oaxaca and Vera Cruz, and subsequently found by M. Linden on the peaks of Orizaba, at an elevation of 9000 to 10,000 feet. It has been introduced to gardens about thirty years, and has been successfully grown in the south and west in the open air, trained to trellis on a south wall in a sheltered situation. It is of trailing habit, with long slender branches, with small, ovate, slightly toothed leaves, from the axils of which are produced the tubular flowers, each about 2 inches long, and of a rich pink colour. It should be planted in a compost of equal parts loam, peat, and leaf-mould, with a small quantity of sand, and it should be placed on a slightly raised mound as the roots are then warmer in summer and drier in winter; a mulching of some light material would be also beneficial to it during winter.

Lonicera sempervirens.—This beautiful North American shrub is deserving of special notice, as it is one of the finest of all the Honeysuckles. It belongs to the Caprifolium section of the genus, and is of twining habit, with very long, slender branches. The leaves are oval, glaucous beneath, and those on the upper portion of the branches are perfoliate. The flowers are borne in terminal clusters, are narrow and tubular, about 1 inch long, bright scarlet outside, rich yellow within, and are produced from May till October in abundance. They are very suitable for cutting, in which state they last a long time in perfection. Though the species has long been an object of culture in greenhouses it is seldom seen outside, yet it ought to be as hardy as the hosts of other plants from the same region. If planted in a sheltered situation in rich light soil and warm locality it would inevitably well repay the trouble, and it would be a decided acquisition to our list of decorative wall plants.

Tecoma radicans, a native of North America, is one of the few hardy Bignoniads we have, and, as it has been an object of culture for many generations, only a brief allusion to it is necessary; suffice it to remark that it is a very desirable wall plant, but it requires a warm and sheltered situation in order to ensure a profusion of its bright orange-coloured blossoms. The variety major is a decided improvement on the type as far as size is concerned, and the minor variety may be taken as the extreme in the other direction.

Bignonia capreolata is another introduction of North America, and is scarcely less hardy than the preceding, and equally beautiful. It has long and slender twining branches, with ternate leaves, with the middle leaflet reduced to a branched tendril. The flowers are large, tubular, with a spreading corolla-limb, and of a brownish red colour. They are borne in large panicles terminating the young shoots. This is another plant which has not been sufficiently tested as to hardiness in other than the most favoured localities, so that further information on the subject would be valuable.

Castanea chrysophylla.—The golden-leaved Chestnut is hardly a wall plant, but as it thrives well under the treatment and is too tender to stand without protection it ought to be included. It is one of the few plants, and especially amongst forest trees, with a golden powder on the under surface of the leaves, which renders it extremely ornamental in contrast with the deep green of the upper surface. It is of very slow growth, but flowers and fruits freely when in a small state, and it is found in great abundance in the form of small shrubs in various parts of Oregon it grows to a height of 60 feet, forming a very large forest tree. It should be planted against a north or a west wall, as it is impatient of too much exposure to sunlight.

Wistaria frutescens. Though this species is inferior in beauty with the well-known W. sinensis, it has, however, one or two good points not possessed by its eastern congener. It has much the same habit as the latter, with smaller leaves with seven to nine leaflets. The flowers are of a light purple colour, borne in elongated

racemes, 3 to 6 inches long and 2 to 3 inches in diameter, and as they are produced on lateral slender shoots they are well adapted for cutting, in which state they last a long time. It generally flowers first in May and June, and again in autumn in greater profusion, accompanied by the leaves, which much enhances the effect. The variety macrostachya has, as its name implies, a much longer raceme, being often 9 inches long with a proportionate diameter.

Passiflora incarnata.—This, one of the few hardy species of the order to which it belongs, and though not so showy as the old and well-known P. cœrulea (which should have been mentioned in the South American list), is, however, rather interesting on this account. It has very slender climbing stems with three-lobed shining leaves. The flowers are large, and produced on long pedicels with a white corolla, with a crown composed of long radiating filaments of a purple colour with a transverse white band. It flowers from May to July, and should be grown in a partially shady place. It is found in various parts of the Eastern States growing in dry places.

Menispermum canadense, the Canadian Moonseed, deserves a passing notice, as it is a very suitable twiner for damp and shady walls; and is, moreover, very handsome when in flower, which are yellowish and borne in profusion on long pendulous racemes, and last a long while in good condition. The leaves are 3 to 4 inches wide, with three to five angular lobes. It is found on the banks of rivers, and also in thickets, from Canada to South Carolina.

Smilax.—For rapidly covering large spaces of wall the hardier species of this genus are well adapted, being very elegant, and not of such a common aspect as Ivy. There are several North American species, of which the most suitable are S. rotundifolia, glauca, and tamnoides, all readily procurable at nurseries, and growing in almost any kind of soil.

For a like purpose, Aristolochia Sipho and tomentosa are well suited; though not evergreen they present a bold feature to wall decoration in summer. *G.*

BRANTINGHAM THORPE.

[SEE PAGES 468, 469.]

PICTURESQUELY situated on a bold eminence on the south-western front of the Yorkshire Wolds, about two miles from the pretty little station at Brough, on the Hull and Selby Railway, and within easy driving distance of the third busiest seaport in the country, stands Brantingham Thorpe, the Yorkshire seat of Christopher Sykes, Esq., M.P. for the East Riding of that county, second son of the late Sir Tatton Sykes, Bart., of Sledmere, and author of the Wild Birds Protection Act. Brantingham Thorpe is a delightful country residence, with views from its well-kept lawns and pleasure grounds which are not excelled for beauty and extent in all that vast county. The mansion, a handsome old stone structure, built in 1671, was, it seems, considerably enlarged by its third owner, Major Richard Fleetwood Shawe, in 1840, and it has been considerably altered and improved since the estate passed into the hands of its present owner by purchase in 1867. The mansion is reached by a new drive from the main road, and entering this the visitor soon discovers that he is "on the chalk," for while Yews are seen to thrive admirably the Rhododendron—the shrub *par excellence* for carriage-drives—is equally plainly to be seen "not at home." The approach is on the west side, but the mansion is scarcely seen until the visitor passes under a very handsome stone archway, when he finds himself on the south-west front, of which, together with an enlarged view of a very pretty terrace garden in the foreground, we give illustrations on pp. 468, 469, prepared from admirably executed photographs taken by Mr. Walker, of Hull.

From this front of the mansion may be obtained on a clear day a magnificent view of water and woodland scenery. Gently falling away to the south is a large tract of well-wooded country with conspicuous examples of the common and Copper Beeches, Sycamores and Wych Elms in the foreground. Two miles away is the magnificent estuary of the Humber, across which there has been a ferry from Brough to Ferriby Sluice, in Lincolnshire, since the time of the Romans, "being on the line of their great highway, the Ermin Street, which led from Lincoln to York." Immediately opposite is the confluence of the Trent and Ouse, the entrance to both rivers being plainly visible. On the Lincolnshire side of the Humber the Alkborough Hills stand out boldly on the sky line, while to the west the view extends over the whole of the vale of York; the towers of York Minster being plainly visible on a clear day from some parts of the pleasure grounds.

By referring to the view on p. 468 it will be seen that the mansion stands on the second of a series of terraces, about 5 feet above the level of the first one, which in the autumn of 1877 was converted into a flower-garden to take the place of an old one on the other side of the Hall. The new garden was designed and laid out by the gardener, Mr. R. C. Kingston, to whose courtesy we are indebted for a copy of his plan, and the details of its planting, which appeared to us, early in the summer, to be an exceedingly effective piece of work. Access to this terrace garden is obtained by a flight of stone steps (shown in fig. 83), at the bottom of which, on the left, is the portion shown in the ground plan, fig. 81, which, for convenience of reference is called the "dial" garden, the other design being known as the "feather" pattern. In both sets it is intended to keep the beds planted all the year round, the winter occupants being such only as are calculated to flower most freely in the spring. The summer furnishing of the Dial Garden may be indicated as follows:—The oblong bed, B, has an outer edging of Echeveria secunda glauca, followed inwardly by a band of Stellaria graminea aurea, about 4 inches wide; another row of Echeveria secunda glauca, and then one of Lobelia Emperor William—the centre being planted somewhat thinly with the yellow-leaved Creed's Seedling Pelargonium, and filled in with about thirty plants each of Iresine Lindeni and Viola Admiration. In C the outer line is also formed of Echeveria secunda glauca, followed inwardly by others of Pyrethrum Golden Feather, Echeveria secunda glauca, and Lobelia Blue Boy; beds last season was carried out in the following manner:—B, an outer band of Daisy Pink Beauty, followed by a line of Pansy Blue Imperial; and the centre composed of Polyanthus Yellow Gem, dotted with the variety of Wallflower named Harbinger. In C there were four marginal lines, which, counting inwardly, were planted with Daisy The Bride, Daisy Red Rover, Pansy Cloth of Gold, and Viola Blue Bell; and the centre planted with a dark flowered Polyanthus, dotted with the Belvoir Castle dwarf yellow Wallflower. The outer marginal lines in D were the same as in C, except that Viola Sir Walter Scott was used instead of Blue Bell in the fourth row; and a dark Polyanthus was again employed in the centre, though this time dotted with the Tom Thumb yellow Wallflower; E was the same as B, excepting in the case of the Wallflower, which was Saunders' dwarf dark, instead of Harbinger. F and G were the same as in the summer planting, and H a carpeting of Daisy The Bride edged with Bellis aucubæfolia alba; I was the same as in summer, and J was composed of a lilac Primrose, edged with Bellis aucubæfolia; while K had an edging of the same Daisy, but was filled with a sulphur-coloured Primrose and Viola Admiration.

Come we next to the "feather" pattern, fig. 82. Here the three small circles marked A have a small specimen of Retinospora plumosa aurea in the centre, with a carpeting of Sedum acre variegatum, and an outer line of Sempervivum calcareum. The feathers

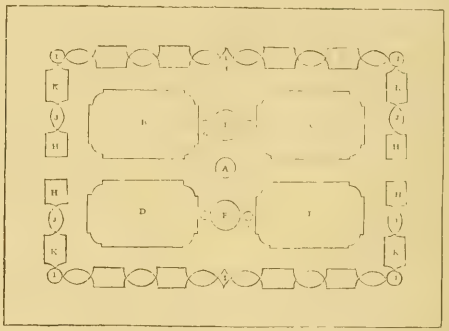


FIG. 81.—PLAN OF TERRACE GARDEN AT BRANTINGHAM THORPE. (SEE P. 469.)

with the centre filled in with Pelargonium Flower of Spring, mixed with Ageratum Countess of Stair and Viola Crown Jewel. The three outer lines in D are planted with the same subjects and in the same order as in C, but the fourth and innermost one is composed of Lobelia Lustrous; the centre being composed of Pelargonium Bright Star, dotted with Ageratum Lady Jane and Viola Golden Perpetual. The four outer lines in E are the same as in B, with the exception of the innermost line of Lobelia, which is composed of L. Ebor, instead of Emperor William. The small circular beds, F, are planted with Antennaria tomentosa, edged with Sempervivum calcareum; and the four still smaller ones, marked G, with Antennaria sericea, edged with the same Sempervivum. Coming now to the chain, all sides of which are planted alike, we have at H a plant in the centre of Centaurea candidissima compacta, and an outer marginal line of Echeveria secunda glauca, the intervening space being filled in with Leucophyton Brownii. The four corner circles and the two diamonds marked I have a young plant of Retinospora leptoclada in the centre, a carpeting of Saxifraga pectinata, and an outer margin of Sempervivum calcareum. The ovals J have three plants of Sempervivum Bollii, in the centre of a carpet of Herniaria glabra, with an outer line of Echeveria secunda glauca. In K the outer line is also of Echeveria secunda glauca, and this is followed by one of Alternanthera magnifica, while the centre is planted with Mesembryanthemum cordifolium variegatum, and Abutilon vexillarium pegged down.

The winter planting (for spring flowering) of these B L have an edging of Echeveria secunda glauca, followed inwardly and in the order named by lines of Alternanthera paronychioides major and A. spathulata, inclosing five plants of Pelargonium Golden Chain, each surrounded by four plants of Lobelia Ebor, the centres being filled in with Alternanthera paronychioides major. The scrolls C C are also edged with Echeveria secunda glauca, and have inner lines of Alternanthera magnifica, and Sedum hispanicum (glaucum) surrounding a central one of Alternanthera spathulata. In D the edging is of Echeveria secunda glauca, followed by a row of Stellaria graminea aurea four inches wide, another one of Echeveria, and then one of Lobelia Ebor, the centre being planted thinly with Pelargonium Constantine, regularly dotted with forty plants each of Iresine Lindeni and Viola King of Bedders. In E the edging is the same—Echeveria, the next line of Pyrethrum Golden Feather, the third of Echeveria, and the fourth of Lobelia Lady McDonald; enclosing a centre of Pelargonium Snowdrop dotted with the same number of plants as in D of Iresine Herbstii and Viola Royal Blue. In F F the Echeveria again forms the margins, the three inner lines being of the golden-leaved Stellaria graminea, Echeveria secunda glauca, and Pyrethrum Golden Feather, enclosing a design of the family coat of arms worked out with various Sedums and Sempervivums, in a setting of Alternanthera versicolor grandis, A. amabilis latifolia, and Kleinia repens. The bed G is planted the same as E, with the exception that Lobelia Blue King takes the place of Lady McDonald in the fourth line, Pelargonium Queen of Queens in the centre, and Viola Crown

Jewel instead of V. Royal Blue. H corresponds with D as to the first three lines, but has the fourth of Lobelia Bluestone, and the centre composed of Pelargoniums Sybil and Marshal McMahon, dotted with Iresine Lindeni and Viola Sir Walter Scott. The two connecting circles, I, I, are planted with Sempervivum arachnoideum, margined with S. calcareum. In all the circles in the border next the retaining wall, J, the two marginal lines are in all cases the same—Echeveria secunda glauca and Alternanthera magnifica; but the centres vary, having as central objects single specimens of Echeveria metallica, Pachyphyton bracteosum, and various sorts of Sempervivums, surrounded with either Mentha Requieni, M. Pulegium gibraltaricum, or Veronica lactea. The scolloped border, K, is edged with the same variety of Echeveria, followed by lines of Stellaria graminea aurea and Lobelia Emperor William, with the centres of the half circles filled in with Pelargonium Flambeau and Mesembryanthemum cordifolium variegatum. Then follow along the back of the border straight rows of Iresine Lindeni, Pelargonium Robert Fish, Heliotrope Pyrethrum Golden Feather, and Coleus Verschaffeltii.

Let us now record the winter planting of the circles. A remains the same as in summer. B, an outer row of Bellis aucubæfolia alba, followed by another of Daisy The Bride, enclosing six plants of Viola Crown Jewel, carpeted with Aubrietia purpurea. C, one outer row of Bellis aucubæfolia alba, enclosing fifteen plants of Viola Crown Jewel, carpeted with Aubrietia purpurea. D, first line, Bellis aucubæfolia; second, Daisy Red Rover; third, a white Pansy; and fourth, Viola Admiration: centre, Polyanthus Yellow Gem mixed with Wallflower Harbinger and twenty-five Hyacinths. E, first line, Bellis aucubæfolia alba; second, Daisy The Bride; third, Pansy Bedfont Yellow; and fourth, Viola Blue Bell: centre, Sulphur Primrose, mixed with Wallflower Belvoir Castle, dwarf, and twenty-five Hyacinths. F, first line, Bellis aucubæfolia; second, Aubrietia græca: centre, Polyanthus Magenta King dotted with Tulips. G, first line, Bellis aucubæfolia alba; second, Daisy Pink Beauty; third, Pansy Dean's White; and fourth, Viola Blue Bedder: centre, Sulphur Primrose, dotted with the Yellow Tom Thumb Wallflower and twenty-five Hyacinths. H, first line, Bellis aucubæfolia; second, Daisy Red Rover; third, Bedfont Yellow Pansy; and fourth, Viola Admiration: centre, Polyanthus Yellow Gem, dotted with Saunders' dark Wallflower and twenty-five Hyacinths. I, the same as in summer; J, crimson and white Primroses, edged with Bellis aucubæfolia; K, lines of Daisy The Bride; D, Red Dragon, Viola Golden Perpetual, Myosotis dissitiflora, and Arabis albida.

Ascending to the terrace above, one cannot but admire the handsome trees with which the surrounding park land is adorned, nor fail to notice the well-doing of two specimens of Wellingtonia gigantea, planted in the park by their Royal Highnesses the Prince and Princess of Wales, on the occasion of their visit here in 1869, and which are growing into fine specimens. His Royal Highness the Prince of Wales also planted another Wellingtonia to commemorate a second visit to Brantingham Thorpe, whose popular owner had also the honour of entertaining the Crown Prince of Hanover last year, and the Prince of Wales for a third time on the occasion of the last Doncaster races.

Passing the east end of the mansion, the visitor comes upon two or three more terraces which lead to the conservatory and pleasure-grounds, and which comprise well-kept grass lawns and gravelled side paths connected by grass-covered banks and broad flights of stone steps, the principal arboreal features of this side being the fine Beeches, Yews, and Box trees. To the left is the conservatory, a large old-fashioned iron-roofed structure, divided into three compartments. At the time of our visit the first division contained, besides a good assortment of greenhouse hard-wooded plants, a nice collection of Nothochlænas and Cheilanthes, and notably good specimens of Nothochlæna Eckloniana and N. chrysophylla, both Ferns not often seen in such fine condition. The second compartment contained a useful lot of specimens of Azaleas and Camellias, as well as a grand plant of Platycerium alcicorne, the Elk's-horn Fern, and another good example of Adiantum venustum, a plant by no means common. Heaths, Calceolarias, and Begonias, and other useful flowering subjects held possession of the remaining section.

From the conservatory a path at the rear—on either side of which may be seen beautiful examples of Sequoia sempervirens, Cryptomeria japonica, and other trees—leads to the kitchen garden, which, being on a lower level, is reached by a flight of steps. The kitchen garden—an acre in extent within the walls—is entered through a substantial yet ornamental iron gateway, but before proceeding onwards we must not omit to represented by a grand plant about 4 feet through, and another well-grown plant was of Adiantum lunulatum, an old but very pretty species. Of Pitcher-plants we noted several nice specimens, and of aquatics two small tanks full of Nymphæas, and a large glass pan containing a robust specimen of the Lattice-leaf plant—Ouvirandra fenistralis.

Next to come under notice was a large lean-to Peach-house, heated with large oval-shaped pipes, equal in size to a double 4-inch; old in pattern but very strong, and working well. The Peaches grown are Royal George and Noblesse, the Nectarine Violet Hâtive: the crop was large, the fruit of good size and well coloured, the growth sufficiently strong and very clean. They are planted inside, but have access to an outside border. This was followed by two vineries with curvilinear iron rafters and wooden sashes. In the first compartment were Black Hamburghs and Muscats, the crop of fair sized bunches being a good one, the berries fine in size and colouring well. The second compartment contained Muscats and Hamburghs of a similar character, and Mrs. Pince's Black Muscat, which does well in this house. The vineries are followed by a later Peach-house, containing Royal George and Violette Hâtive Peaches and Violette Hâtive Nectarines, all carrying excellent crops; and last of all a long Fig-house, containing six large bushes in pots, and some trees on the back wall planted out. The sorts grown are Lee's Perpetual and the Brown Turkey; and the crop they bore can only be fittingly described as wonderfully fine.

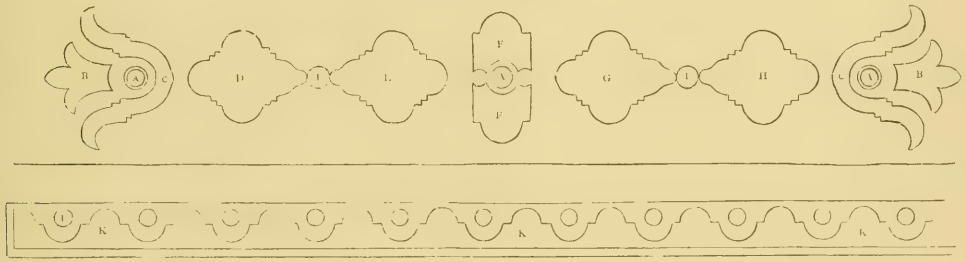


Fig. 82.—Plan of the Terrace Flower Garden at Brantingham Thorpe. (See p. 469.)

In the preceding sketch we have only been able to indicate a few of the leading features of horticultural interest to be found on this fine domain, but we hope in our next number, to refer to another by giving some particulars of an admirable system of competition which Mr. Sykes encourages amongst his cottage tenantry, and which might, with lasting benefit to all concerned, be introduced on other estates. We cannot, however, leave the subject this week without adding that the high condition in which everything is maintained at Brantingham Thorpe reflects the greatest credit on Mr. Kingston, whom to know is to highly esteem, as well for his good nature and urbanity as for his great practical attainments.

THE CUP FUNGUSES OF SHROPSHIRE.*

Among the curious and interesting forms of vegetable life there are none more striking than the Pezizæ. Any one accustomed to wander in the woods in the autumn with his eyes open could hardly have failed to notice P. aurantia, the golden cups of which are frequently seen in large groups on the ground in moist places, some of them attaining a size of 4 or 5 inches across. Or if your visit to the woods happened to be in the spring, a no less beautiful species, P. coccinea, must have caught your eye in some moist spot, resting on a decaying branch on the ground. These, however, are amongst the most beautiful of the genus, for the great proportion of them are much

* Abstract from a paper read by Mr William Phillips at a meeting of the Caradoc Field Club, held at Ludlow on September 25.

more sober in their hue, being a quiet stone colour or chocolate-brown, and amongst the smaller species various shades of yellow, scarlet, and purple occur. A few of the larger species have been known to botanists for a very long period, but if we look into some of the older British authors we find very little mention of them. We presume they must have considered them too unworthy of notice to devote much space to them.

In 1650 Dow published his *Pinto logia Britannica*, a catalogue of our native plants arranged in alphabetical order. Under the head "funguses," the whole fungus flora of the British Isles is comprised under four divisions, viz.:—1, Fungi esculenti; 2, F. non esculenti; 3, F. ophioglossoidis; and 4, F. sambucinus. Under the two first no species are specified; No. 3 was probably a Clavaria; and No. 4 the Jew's-ear, so frequently found on old Elder trees. Two centuries and a quarter have elapsed since that time, during which the study has made such progress that at the present time no less than 3000 species are known to fungologists as British species, and the number is daily augmenting. Of these 3000 species 215 cup funguses were included in Cooke's *British Fungi*, but since its publication the number has risen to about 300 species. Nearly one half of this number I have detected within the boundaries of this county, and I have very little doubt that a much larger proportion will yet be found, for not a year passes without numbers being added to the list. It is not my intention to trouble you this evening with a very lengthy or a very scientific essay on these plants, as our time is limited, but I will, with your kind indulgence, say a few words on the following points—I. The structure of cup funguses. II. The places where they grow. III. Their uses.

I. *Their Structure.*—After a most lucid and careful description of the structure of the plants in question, the nature of their growth, reproduction, &c., Mr. Phillips continued:—Before quitting the subject of structure, I would call attention to a minute species recently found on dead stems of Myrica Gale, in North Wales, which offers a peculiarity of structure unlike anything before noticed. The hairs with which the cups of some of the minute species are clothed are sometimes found to be terminated by a rounded mass of transparent granules, the exact origin or use of which has never been determined. Some have suggested they may be bodies connected with the impregnation of the sporidia, spermatia, or conidia. What we learn from this little plant puts these bodies in a new light. You will see from the diagram that each hair of the cup is surmounted by a transparent cross, which is seated astride the hair. My distinguished friend, the Rev. M. J. Berkeley, was the first to suggest they consisted of crystals of oxalate of lime. Mr. Blunt very kindly examined them with such means as the case admitted of, and fully confirmed Mr. Berkeley's view. Strictly speaking, they are no part, then, of the organism of the plant, but a secretion from the terminal cell of the hairs. That it is not an accidental and inconstant character is proved by the fact that specimens have since been found both in Scotland and Norfolk by botanical friends whom I requested to search for them, in which the crosses were uniformly present. I have named the species P. crucifera. (See *Gardeners' Chronicle*, p. 397.)

II. *Their Places of Growth.*—A considerable number of species grow on the bare earth, or amongst grass and moss, generally selecting damp and shady places in woods. Others are found on decaying branches or trees and herbaceous plants. It is almost impossible to turn over a heap of such material without finding some of the minuter species growing there. Eight years ago I found a large species growing on the walls of a scullery in a cottage I was then occupying. The wall had become damp through an imperfection in the roof, and a considerable growth of these plants was the result. This turned out to be a new species, P. tectoria. This has since occurred—a few days ago—on the walls of what is to be transformed into Shrewsbury School, at present known as the House of Industry. A friend sent me a striking species which he found on cocoa-nut fibre. Like fungi in general, these plants are very widespread in the choice of habitation, and not unfrequently grow upon each other.

III. *Their Uses.*—In this utilitarian age the great test applied to everything is, "Of what use is it?" I am not in a position to say that these cup funguses are of any use as articles of diet, or that they contain any wonderful medical virtues. On referring to Mr. Berkeley's *Cryptogamic Flora*, I find he mentions one species, P. venosa, as having been sold in Northamptonshire under the name of "Morells," and adds that he did not hear of any ill effects from them. I have looked over Mr. Barker's large work, in which are figured all the species he found in the vicinity of Nice, and in which the properties of each species are given, and the few cup funguses he includes are followed by such remarks as "Insipid: may be eaten without inconvenience," not a very warm commendation. Of P. aurantia he says, "Mérat says one may eat this Champignon without fear of being incommoded." The wiser course is to let them alone.

I have not been able to discover whether any of the cup funguses have been subjected to analysis; this is because I have not access to such works as treat of the chemistry of fungi, but I believe I am safe in saying that none of them have a reputation for any useful properties in the arts or sciences. That they occupy a place in the economy of Nature in which they serve some useful purpose cannot be doubted, though we may not be able to specify that purpose. One of the obvious purposes is helping to clear away, by hastening the decay of vegetable matter in the woods and forests, that which would otherwise accumulate till it had become a great inconvenience. Another purpose, not less obvious, is the supply of food to a vast number of minute living things. It is a very common circumstance to find them eaten away close to the ground, and as a rule the hymenium is consumed first, from which I infer that these living things are epicures in their way, and, like the ideal alderman, know how to appreciate their tit-bits. But while we cannot assign any conspicuous character of utility to these humble forms of vegetable life, I feel sure that in a company like this I have no occasion to apologise for having brought before your attention, however imperfectly I may have done it, some of the facts connected with the study of the cup funguses of Shropshire.

GARDEN ALLOTMENTS.

THE words of Mr. Gladstone spoken at the distribution of the prizes at the Hawarden Flower Show will find a ready echo in the hearts of all who have turned their attention to the beneficial influences, moral and physical, which are to be derived from the pursuit of what is termed cottage gardening. We make use of the words "is termed cottage gardening," because our attention has lately been directed to a class of gardening which, though it cannot be strictly called "cottage," is so nearly akin to it that it may be fairly considered as coming within the category of those gardens which Mr. Gladstone is so desirous of seeing provided and multiplied amongst us. We allude to the cultivation of garden allotments. It chanced that not long ago we had to spend some time in the neighbourhood of Nottingham, where this allotment system is extensively carried out. There, within a short distance from the town—a large manufacturing town, be it remembered—the greater part of them most picturesquely situated on the sloping sides of two hills, lie many hundreds of variously sized and shaped gardens, each and all, for the most part, entirely cultivated by the respective holders. These gardens are all numbered, and are intersected by avenues. They are the property of the Corporation of Nottingham, and are let out by that body at small rents to the holders who, beyond necessary restrictions, are for the time being the virtual owners of them, inasmuch as within those restrictions they are at liberty to build at their will their summer-houses and vineries, to plant and transplant, and to sell and resell as they may think fit.

We will venture on a description of one out of the many of these allotments. It is some 130 to 140 feet in length by some 40 to 50 feet in breadth, fairly stocked with Roses, for the cultivation of which Nottingham is famous, and other well-known garden flowers, and well stocked with fruit trees, the Apples and Plums at the time of our visit being almost overburthened with fruit. It contains a comfortable little summer-house, and adjoining this is a small conservatory, which the owner had built himself, aided only occasionally by the help of a friend, and he was contemplating, indeed had already commenced, the enlarging of it considerably. For this plot he pays as rent something less than a pound a year, and he assured us that he had realised at least five times the amount by the sale of flowers alone. Employed in one of the largest lace factories in the town, his health a few years ago had become seriously impaired, and he was recommended to hire a garden and try the effect of outdoor exercise. The result has been everything that could be desired. His health appears to be completely restored, and almost every moment of his spare time is now devoted to his garden. From a physical point of view, then, such gardens as these are, it would seem, not without their value, but this value, we take it, by no means stops short here. We can readily imagine that they must tend greatly to advance that social intercourse which it is so desirable should be promoted between man and man, for he would be a very churl indeed who evening after evening engaged in the same pursuit, and animated by the same desire to make the best he can of his "bit o' land," could refuse for long to give an answer to the friendly nod, or to hold off aloof from the friendly chat as to the respective merits of the work in hand—these perhaps in their turn leading up to the exchange of this plant for that or that root for the other, as need or occasion might offer, thence to the walk home together, and (why not?) it may be to a lifelong friendship. And, again, beyond this they tend to promote a healthy and friendly rivalry amongst the holders. It is in man's nature not to wish to be thought inferior to his neighbour. He does not like, as it may be put in this instance, to see his neighbour's garden looking better than his own, and this spurs him on to endeavour to at the least make matters equal, spurs him on to a generous rivalry—a rivalry which need not in the slightest degree overstep the bounds of charity; which need not even so much as approach the detestable ground of envy.

We recall one instance of this same kind of rivalry which came under our own observation. A row of small cottages was being built, and it chanced that one of the first occupiers had a liking for flowers. Within a short time a little garden was formed in front of the door, and not a few of the passers by would stay to look at it. The neighbours, smitten apparently by a friendly jealousy, began to consider whether they could not make their gardens attractive also, the result being that within a very brief space of time as pretty a row of gardens as you might wish to see had taken the place of what had been but naked ground. And again, that the close day-long confined factory hand should be enabled by the expenditure of a few shillings—which, if he be industrious enough, he will easily cover by the sale of the extra produce of his garden—to escape if but for an hour or two each morning or evening from the stifling atmosphere of the factory room and the everlasting rattle of the machinery, to breathe the fresh air, providing at the same time food for the household and the beauty of flowers for his home, cannot be looked on otherwise than as an almost inestimable boon; and, as we look down from the top of the hill on the work and the workers below, thick and busy as working bees—for at least one of the motives mentioned above there are very few drones to be found in these hives—fathers, mothers, and children planting, watering, gathering—or as we meet these labourers returning home laden either with their bunches of Roses or other seasonable flowers, or with their well-stocked baskets of vegetables or fruit, while nearly every little shop and window we pass is bright either with cut flowers or plants, we cannot fail to appreciate the incalculable amount of good this pastime of work must be doing, or to see how it must act as a powerful conterpoise to the attractions of the public-house, in which it may be feared many of these same hours would be spent but for these gardens.

It may be that it will be some time before we shall find in this country that, as is the case in France, gardening will be practically taught in our primary and elementary schools, or that there will be here, as there, some thousands of schools, each with a garden attached and placed under the care of a master competent to instruct his pupils in the first principles of horticulture. We may, and shall no doubt have to wait some time before this can be brought about. In the present we must make the best of things as they are, whether it be corporation or landlord who may have the power—the power either of granting these garden allotments, or of providing these cottage gardens. It may not be out of the way here to hint—we have not space to enter into a discussion of the subject now—whether it would not well repay most of our large landowners having land within easy distance of our large towns, which is now perhaps

barely profitable to them, to turn their attention to this system of garden allotments—a system, be it remembered, which will work out by itself without entailing either cost or trouble to the landowner. We say in whomsover these powers lie: it is our firm belief that a judicious and ample exercise of them, extending them in every direction where a field lies open to them, will do much to counteract attractions which, taking the very best view of them, draw a man away from his home when his presence is most looked for there, do much to promote health, and do much to promote the social intercourse between man and man, and, what is infinitely more desirable, to strengthen the home ties of husband, wife, and children—do much in fact "to minister delight to man, to beautify the earth." *J. W.*

Garden Operations.

FLOWER GARDEN, ETC.

As soon as severe frosts render necessary the entire removal of all the tender bedding stuff from the flower-beds, the sites should be at once prepared for the reception of bulbs and other spring-flowering plants. It is important to remark that the continual cropping all the year round is an exhaustive process, which must be compensated, as we cannot expect a healthy development of growth from a soil which has been exhausted of the constitutents needful to its fertility. At each successive cropping, therefore, it is necessary to remove a portion of the exhausted soil, and supply its place with fresh compost, and where bulbs are extensively planted and required fine, it is desirable to put a good layer of rich manure from 6 to 8 inches below the surface, which will have a marked effect on the flowering of the bulbs, and, with the addition of a slight dressing of compost in the spring, will sufficiently enrich the beds for the summer plants. The best system to be adopted in arranging the bulbs will always be a matter of taste, but as a general rule the best effects will be produced either by planting large masses of the same colour, or by continuous rows of the different colours either straight or circular, but each row must be confined to its own particular sort. An indiscriminate admixture of all colours is all very well for detached or solitary beds, but geometrical designs require much greater care and system, and as the kinds of plants necessary for the production of fine effects are both numerous and reasonable in price, bulbs should enter largely into combination with spring-flowering plants. The beds should always be raised above the surface level more or less according to the nature of the soil, strong adhesive soil requiring the greater elevation. If standing upon grass it is desirable to surround them with an edging of Sempervivum californicum or montanum with the soil moistened and made very firm round the outside. Rows of Crocus next to these are very useful for indicating the outline of the whole design, also for marking out divisional lines where necessary, but as a rule no complicated patterns should be attempted. A simple adherence to the lines and form of the general design will be found the most effective in practice. Hyacinths should be extensively planted, but high-priced bulbs are not at all necessary. Such sorts as Robert Steiger, Bleu Mourant, Grand Lilas, and Victoria, all good and cheap old sorts, are very effective. These should be supplemented by double and single Tulips, of which Artus, Couleur Cardinal, Canary Bird, and Kaiser Kroon, in the singles, and La Candeur, Rex Rubrorum and Tournesol in the doubles, are most useful, and afford a sufficient variety of colour without running into a meaningless *mélange*. Then for pretty edgings we have Scilla amœna, bifolia, and sibirica, as well as the beautiful varieties of Turban Ranunculus and Scarlet Anemone. Intermix with all these the several varieties of Viola and Myosotis dissitiflora, and we have a sufficient variety of materials to maintain the beds in great beauty throughout the spring, and until the summer bedding-out time comes round again. In planting, the bulbs should be inserted at a uniform depth according to the sort and size, in order to ensure evenness of height at the flowering season. For Hyacinths use a blunt pointed large-sized dibble, set to 6 inches; put into each hole a handful of sand, on which press the bulb down firm and cover it with more sand: a hole of 5 inches is sufficient for Tulips treated with sand in the same manner, and 4 inches will do for Crocus and Scilla, and for Ranunculus and Anemone draw out drills 3 inches deep, scatter sand therein, press the roots thereon 4 inches apart in the rows and cover them with sand, and press the soil over them rather firmly as they are very apt to be drawn out by worms.

Winter Aconites and Snowdrops will be best distributed in patches on warm and sheltered nooks in shrubbery borders and on sunny banks, and here and there in the mixed herbaceous borders; but of all things for the mixed garden and shrubbery borders nothing is more interesting than the many beautiful varieties of Polyanthus Narcissus, these should be freely distributed, and particularly the old double Daffodil, in patches by the sides of wood-walks. Now is a good time to sow some of the different varieties of hardy annuals for early spring flowering, such as Collinsia, Clarkia, Godetia and Nemophila—of the latter Nemophila discoidalis is very well adapted for sowing in single beds to flower in large masses, being dwarf, compact, and very bright. Cuttings of Calceolaria aurea floribunda, Golden Gem, and amplexicaulis should be got in at once. The best situation for the purpose is in frames or pits under a north wall; they are often inserted very thickly in such frames and thinned out in the spring, but this, if it can be avoided, is not good practice, and if room can be spared it is best to insert them at 6 inches apart every way: they can thus be prevented from drawing up weakly, and by pinching back in the spring the plants become stocky and well furnished, and can be taken up with a large ball. *John Cox, Redleaf.*

FRUIT HOUSES.

Strawberries in Pots.—Now that the growing season is over and the crowns of all the earliest potted plants are fully developed and ripened, the next thing of importance is to see that the roots of the plants are preserved intact during the period of partial rest that intervenes from now till forcing is commenced. Some years back it was a common practice to dry off Strawberries in pots either by storing them on the borders of fruit-houses or on shelves, and withholding water from them. Others fancied that stacking them against walls with the insterstices filled in with leaves or coal-ashes was a useful remedy, which undoubtedly it was as far as getting rid of the plants for a time was concerned, but I doubt very much whether the labour thus saved was a gain in the end or not. I used to treat Strawberries in this way myself, but when I came to analyse the treatment, or rather compare it with the order of Nature, I discovered the practice to be a barbarous one. My attention was first attracted to this important matter by comparing the roots of some plants that stood out all the winter with those that were protected in pits and frames and kept partially dry. The roots of the former were of a fresh lively white, whilst the latter were an irony-brown. Some people may think colour is an indication of matured roots, but this is a mistake, the roots of the current season in Strawberry plants are quite white and fresh the season through, and this is what we have to imitate in forcing. Therefore where there are the means of securing perfect drainage, I would prefer leaving the plants out-of-doors rather than setting them on the borders or shelves of fruit-houses. We have taken our plants for early forcing under cover where they can be protected from very heavy rains, but they are fully exposed to all ordinary weather and watered with as much care as they have been during the heat of summer whenever there is the slightest suspicion of any dryness. *W. Hoste, Otterspool.*

Vines.—Where Lady Downe's and other late-keeping kinds of Grapes were encouraged with fire-heat through March and the cold spring months of the past season the fruit will now be finishing off well, and the foliage, the best test of thoroughly ripened wood, will be showing the beautiful tints of colour peculiar to the thick-skinned section. If not already done, every lateral may now be taken off down to the main buds, and ventilation will require a little more attention as the days decrease in length and atmospheric moisture increases. With Grapes that are well in advance the best routine is free ventilation, with fire-heat by day, and a slight reduction of temperature by shutting off fire-heat when the front sashes are closed for the night. It sometimes happens that the inside borders of vineries become surface-dry before the colouring process is quite satisfactory, and the berries show a disinclination to finish up to the footstalks. Where this is the case a nice watering with weak tepid liquid on a fine morning frequently produces the desired effect in an incredibly short space of time. The great point of danger to be guarded against is condensation of moisture on the berries, and this may be overcome by covering the border with a layer of dry clean Fern and liberal ventilation at the apex with a little extra fire-heat. Ripe Grapes, particularly Hamburgh and other thin-skinned kinds, will now require careful management. Look them over occasionally for decaying berries. Keep the house dry and cool, and discontinue sweeping and raking or other movements that will cause dust to rise and settle on the berries. Look after the outside borders of early and late houses; cover with a good body of dry bracken, and place all available lights or shutters over it for throwing off wet; at the same time, in all low-lying cold situations, endeavour to extend and strengthen the internal root area by replacing every atom of nonproductive material with good compost, consisting of rough turf, bones, and charred wood or garden refuse. The idea that Vine roots will not travel northwards is now exploded, and the element with which the change has been brought about is water, not in driblets from a single pump and a single watering-can, as I lately saw it for a vinery 200 feet in length, but in quantities equal to a rainfall of 4 feet through the growing season. Proceed with the pruning and cleansing of the early houses, and have everything clean, sweet, and in thorough working order for a new start. Get the Vines intended for the earliest crop of Grapes into position, and if they can be started without bottom-heat from fermenting leaves or stable manure, well worked and sweetened before use. Seen from the frame ground, considerable time will be gained in forcing against Nature. Sling the rods with horizontal position over the fermenting materials. Bermeans of insuring an even break. Start minimum temperature of 55°, and gradually it as the buds expand and show signs of opening growth. Young Vines struck from eyes this spring and planted out in open borders will be affected the unseasonably mild weather, but steps must be taken for getting them thoroughly ripe without decay by keeping the house quite dry and moderately warm by day, constant pinching of all laterals except a few at the extremities, and a low night temperature with abundant ventilation. *W. Coleman, Eastnor Castle.*

PLANT HOUSES.

Orchids.—When at any time reference is made to those periods of the year which we speak of as the growing, ripening, or resting seasons, it will at once be evident to those who have already commenced growing this class of plants that such terms, suggestive as they are, and the periods likewise needing to be carefully observed, and the suggestions indicated for such times being carried out as far as it is practicable, that such recommendations and course of treatment in some measure presupposes that a number of medium-sized plants are already under cultivation, and that, as opportunity offers, fresh additions are continually made of such as are, both in regard to size and vigour, those that may justly be described as flowering plants. Leaving, however, these larger specimens we invariably find in every collection, and in some cases much more so than others, a number of small pieces scarcely sufficiently large to be looked upon as plants, many of these doubtless being pieces or back bulbs that have been taken off the larger plants, or those that have been more recently obtained when, as is now so often the case, fresh importations are bringing something fresh and new under our notice—the greater number of which, at one time or another, most of us have a try to induce to bring their blooms to maturity that we may prove their worth and value. Small pieces, such as these, are generally managed best, for a season at least, on blocks or in baskets, in which manner they seem to come on better than when in pots, for, if in the latter, it often happens that, as soon as a few roots are formed, the snails or woodlice seem to find them quickly out and, eating them through, the plants are sensibly weakened through the loss of its main supporters. To subject such small pieces to such a severe resting season as has been advised at various times to be given to the larger plants would, in many cases, have an effect far different to that which is most to be desired, and real and lasting injury would result to many if such a method were to be rigorously applied. While as yet the plants are so small they do not need, nor do they seem to expect, a long season of rest, for in many instances it will be noticed as soon as one little bulb has formed, and no sheath or flower-spike having been produced, the plant will start at once into growth again, and at whatever time of the year it may be they will continue growing; and though during the winter-time such small shoots come on slowly, yet they will still push away, and appear to expect a treatment always just in accordance with their requirements. Where there are many such as described it will be necessary that they have a careful and regular method of treatment applied to them; if possible place them all together, so that during the time they are thus growing, if it should happen to be in the winter-time, they may be treated to a little more water than those of the same species or varieties that should then be in a state of rest. Let them at the same time be benefited by all the light that can now be given them, that the breaks may continue growing, and as quickly as possible form the bulbs which by-and-bye may be looked for to produce the flowers. When a collection is grown for the pleasure that is to be obtained by a careful and studious examination of the forms and colours of the species and varieties, it is better that good flowering plants be always obtained. There are, however, many new things continually being offered, of which for a season or two many must be content with small pieces; and though, at the same time, these need a little extra care and individual treatment, the pleasure of seeing them gradually develope into flowering specimens will assuredly compensate for all the anxiety that has been felt and labour bestowed to bring them into such a satisfactory condition. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 12, 1878.

APPOINTMENT FOR THE ENSUING WEEK.

Oct 15 { Royal Horticultural Society: Meeting of Fruit and Floral Committees.

would be well if landscape gardeners and intending planters paid more frequent visits to the botanic gardens, the arboreta, or the nurseries before commencing their operations. Too often the intending planter sends off his order to his nurseryman and receives his common Laurels and Lombardy Poplars, his Limes and his Planes, in ignorance of the variety of form and the wealth of beauty that is at his disposal if he will but avail himself of them. Far be it from us to undervalue these well tried old friends: that is by no means our object. For some purposes, as where large quantities are required, no others are at present available; but, setting such cases aside, there are hundreds and thousands of instances where people go on planting the same thing over and over again, just because they know no better, just because they will not take the trouble to visit the nearest nursery and use their eyes. It is almost inconceivable how much beauty, how much fitness—and fitness is beauty—is wasted, lost by this sublime habit of ours of sending off an order and in due time of sending a cheque for the same without any further inquiry or trouble in the matter. Planting has to be done for shelter, for timber, for game cover, for ornamental purposes, for concealment of unsightly objects, in woods, in shrubberies, in borders, in masses, or singly, and so forth, and but the very slightest inquiry is made as to trees or shrubs suitable for the particular purpose. Even landscape gardeners, who are supposed to know the resources at their disposal and how to make use of them, seem too often careless in the one respect or deficient in the other. Much of this truly unfortunate ignorance might, as we have said, be dissipated by an occasional visit to some botanical or nursery establishment. The present season is not only a very suitable one for such visits on the part of those who are thinking of planting on a large scale ordinary forest or fruit trees, but specially for those who are seeking information as to ornamental trees and shrubs. The beauty of these objects depends, of course, on many circumstances, such as the mode of growth or habit of the tree, the size, colour, or form of its foliage or of its flowers, and so forth. At this season perhaps the colour of the foliage is what attracts most attention. While some shrubs wear all the year round a livery of gold or scarlet, yet in the full flush of summer, with a host of gay and brightly coloured objects around them, they may attract less attention than at this season. The golden Catalpa is gorgeous from late spring to late autumn, the golden Elm, the golden Ash, the golden Oak, and the golden Elder likewise. The purple Beech, the purple Sycamore, and its near ally, SCHWEDLER'S Maple, the purple Nut, the Birch of similar colour, are in the same case, and hosts of others, to say nothing of the golden Chinese Junipers, Retinosporas, the Thuias, the silver-splashed Cypresses, and others which throughout the year supply material for our admiration. And what combinations do not these brightly coloured trees suggest? The white-leaved Limes and the dark purple Beeches, the variegated Negundo and the dark green Pines, the golden Poplars and the purple Sycamores, and a host of others which suggest themselves at once on looking through a good tree nursery.

No more gorgeous bit of colouring have we lately seen than that afforded by the juxtaposition of the golden Catalpa and Rhus glabra, the scarlet Sumach; Rhus glabra, var. laciniata is scarcely less gorgeous, but the leaves are bipinnate instead of pinnate, and the ultimate segments irregularly toothed or even lobed. A faint glaucous bloom overlies the red or orange. Whether this plant is really a variety



FIG. 83.—BRANTINGHAM THORPE, YORKSHIRE, THE SEAT OF CHRISTOPHER SYKES, ESQ., M.P. (SEE P. 464.)

of R. glabra we somewhat doubt. In any case it is a plant which from its elegant Fern-like habit and beautiful colour at all seasons, and especially in autumn, should find a place in every garden. Another splendid contrast is afforded by the purple Birch and the golden Poplar And what a relief from the monotonous green of much of our English scenery would be afforded by the intermixture of white-leaved Poplars or other coloured trees amid the clumps of Oaks, or Limes, or Beeches. How would the distant view be lighted up by such judicious planting.

But just now, perhaps, the attention is more particularly rivetted on the gorgeous tints of some of those trees which all the summer have donned an attire of sober green, but now burst out into full radiance and glow of colour—a parting present to us as it were. As illustrations we may be permitted to mention the American Oaks, Q. rubra, nigra, coccinea, and others, the Liquidambar, the species of Rhus, all of richest ruby-red. Then the Thorns (Cratægus) in many species; the Vines, the Maples, in which the red is mixed with yellow to produce the richest orange, now fiery or coppery, now paling gradually into the purest yellow. Then there is that little-known shrub, Parrottia persica, which at this season produces perhaps the most gorgeous of all leaves. It is impossible to exaggerate the splendours of these leaves—purple and ruby, scarlet and orange, emerald and golden yellow; all these, with myriads of intervening shades, may be seen in the leaves of this plant as seen on the wall at Kew. And yet it is one next to never seen in private establishments. Pyrus arbutifolia, of which we subjoin a brief description (p. 471), is another instance of like nature. It is quite impossible to exaggerate its splendour. Vines also present the richest and most varied tints, ranging from deep purple through red to golden yellow. The Claret Grape is purple—deeper still in its purple hue is a leaf from an unnamed kind in Messrs. Osborn's Fulham nursery. By the way we may incidentally mention the effect produced in this nursery by placing a number of pot Vines by the side of a low Yew hedge, and allowing the gloriously coloured leaves to fall over the dark foliage. The effect was truly superb. Various of the Maples and Limes shine like resplendent gold at this time. Nor are these splendid colours alone the heritage of exotic trees or of shrubs bought with a price; our native woods will afford many a colour picture which will for the moment make us forget that this brilliancy and this beauty is but the forerunner of the gloomy monotints of November.

Even our weeds this year seem burning with fiery colour. Amid a heap of leaves of gorgeous American Oaks, of Rhus, and Liquidambar, and so forth now before us, there are leaves of the common Dandelion and of an almost equally common Willow-herb, Epilobium, and their colour is as rich a ruby-red as that of either of the plants we have named. The leaves of the common Sow Thistle (Sonchus) are also in many places just now of the richest purple, thinly veiled by a delicate bloom, as in a Plum. Seen in the early morning, when the dew-drops glisten on them, these despised weeds glow with a colour not to be excelled by that of a Bertolonia. How much this erubescence is due to full exposure to light is well shown by the circumstance that those leaves or those portions of leaves which have been covered by others, so as to be screened from the sun's rays, are green or even blanched yellow—clear proof, if any were needed, that the change in colour is due to chemical changes in the leaf, changes directly consequent on the agency of light.

We subjoin a list of a few of the most remarkable "self-coloured" trees and shrubs, omitting entirely variegated trees and shrubs, as coming under a different category, and omitting also evergreen or coniferous trees or shrubs:—

Leaves Golden Yellow.

Throughout the Season.	*In Autumn Only.*
Golden Catalpa	Virgilia lutea
,, Elder	Robinia pseudacacia
,, Alder	Tulip tree
,, Elm (Rosseel's)	Larch
,, Oak (Concordia)	Taxodium distichum
,, Poplar	Salisburia adiantifolia
Spiræa opulifolia var.	Norway and other Maples
&c., &c.	Limes

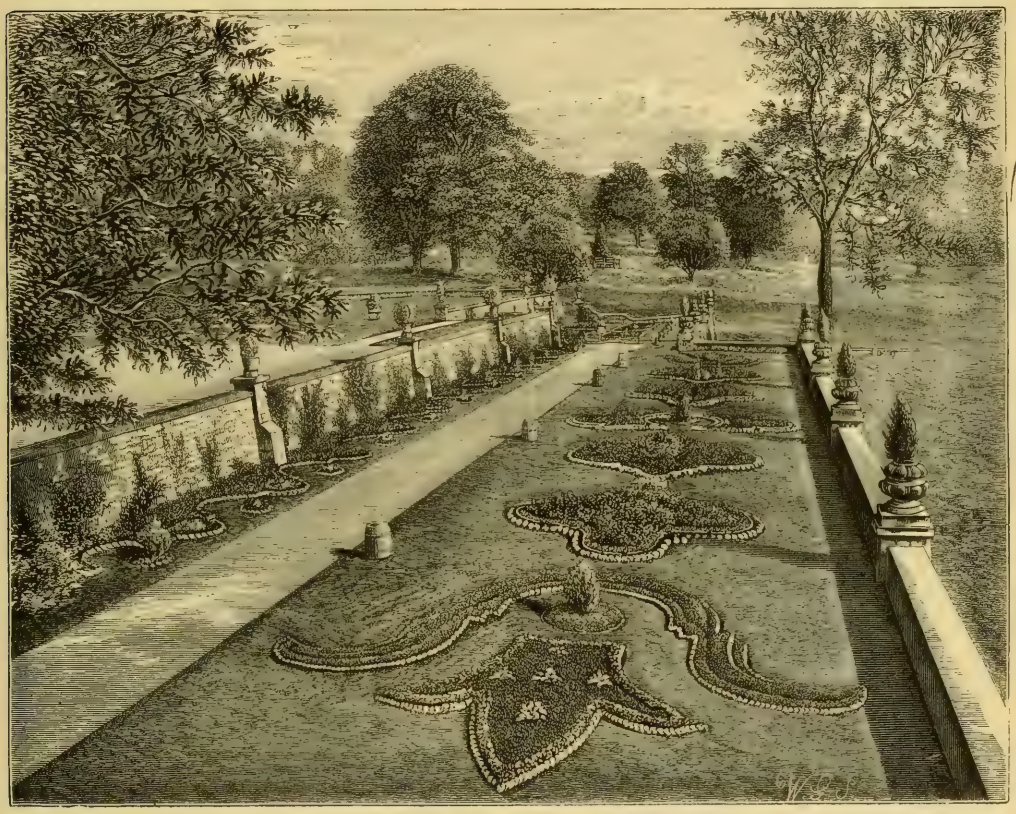


Fig. 84.—The Terrace Garden at Brantingham Thorpe. (See p. 446).

LEAVES RED OR PURPLE.

Throughout the Season.	*In Autumn only.*
Acer Schwedleri	Liquidambar
Purple Beech	Crataegus, spp.
,, Sycamore	Vines, spp.
,, Birch	Rhus, spp.
,, Nut	American Oaks
,, Berberis	,, Maples
,, Vines	Ampelopsis
Japanese Maple	Azalea (bi liant scarlet)
Acer pictum (olchicum of gardens)	&c., &c.
Purple Peach,	
Euonymus atropurpureus	
Daphne Mezereum fol. purpur.	

LEAVES OF GOLD.

Copper Beech	Parrottia persica
Rhus laciniata glabra	Vines, sp.
&c., &c.	Beech
	Oak
	Azalea, &c.

PYRUS AKIDOPHOLIA, L. ; *Lond. Arbor.*, p. 925. This is a moderate-sized shrub or small tree, with spreading, downy branches, elongate pointed buds, and leaves 3½ inches by 1½ inch, shortly stalked, obovate-lanceolate, tapering to the base, finely and regularly crenated, the crenatures terminating in a small curved spine, glabrous above, hoary beneath. The fruits are of the colour, size, and form of those of the common Hawthorn. Nothing can exceed the magnificent colouring of rich red-purple and orange tints of the decaying leaves of this shrub.

—— THE RIPENING AUTUMN.—We have been enjoying a glorious autumn, and so delicious was the latter part of the past month and the early part of the present one, that we seemed to have been visited by that delightful American institution known as the Indian summer. That such warm sunshine and soft balmy atmosphere has had the most beneficial effect upon the summer growth of all our trees there can be little doubt. Indeed, so luxuriant has this growth been this season that at no time within recollection were the maturing and ripening benefits of drought and sunshine more needed than during the now passing autumn. The fruit trees that, unchecked by an abundant crop, sent forth shoots from 3 feet to 4 feet in length, have these now as hard as whip handles and as brown as the Hazel Nut. Buds are well plumped up and look vigorous and healthy; indeed, the summer wood is already finely ripened, and if it does not prove productive in coming seasons it will not be pleaded that the growth of 1878 was deficient in vigour or lacked maturity. The deciduous trees are now fast showing their beautiful autumn tints, especially on dry gravel soils. The Lime, the earliest of all such to shed its foliage, shows the first examples of the "sere and yellow leaf," the Horse Chestnut follows with its massive foliage fast hastening to decay, and the Elm is putting on its golden and brown tints, earliest vestiges of that period of rest in which all vegetation seems to acquire fresh life and activity. In woodland districts, especially where hill and valley prevail, the October tints on the trees will be a glorious sight to see, the leafage this year being even more than usually luxuriant. The Virginian Creeper has been singularly rich in colour, but its glow is too transient, the fiery tint but presages the fall of the leaf, and in a few days all the glory has departed. Do not these periods of vegetable rest also refresh and invigorate us, and lead to our finding in each recurring spring the elements of renewed appreciation and enjoyment?

—— THE FRUIT COMMITTEE.—At the meeting of the Fruit Committee of the Royal Horticultural Society, to be held at South Kensington next Tuesday, we are informed that there will be some excellent displays of fruit—Grapes, Apples, Pears—and also of Potatos, by many of the leading growers; so that a more than usually interesting meeting may be expected. We may mention also that Messrs. PEARSON'S prize for their two new Grapes, Mrs. Pearson and Golden Queen, will then be competed for and awarded.

—— NEW PHALÆNOPSIS.—We understand that Messrs. VEITCH purpose exhibiting at the meeting of the Royal Horticultural Society, on Tuesday next, two new Phalænopsis, viz., P. violacea, from Borneo; and P. Esmeralda, from Cochin China.

—— CHRYSANTHEMUMS.—Cultivators of Chrysanthemums for exhibition purposes are getting a little uneasy at the prospect of an early bloom. The days are close and warm, and the nights so comfortable that the plants are moving rapidly, and the buds swelling up very fast. Another fortnight of this weather and many of the plants will be in bloom, or nearly so. Happily there is no necessity for housing the plants, and the longer they can be kept in a cool shady position in the open air the greater will be the delay in blooming. Last year the very reverse held good, and growers found it necessary to push on their plants into flower, and cases occurred of Chrysanthemum Societies having to postpone the dates of their shows. Some advice suitable to this season of the year was given to growers many years ago by the late MR. WILLIAM HOLMES of Hackney, in the following words:—"To Chrysanthemum growers the present time is of all others the most interesting, the buds are now showing themselves, and in the earliest stages of growth it is not difficult to determine the quality of the embryo flower. In selecting your buds take only those which are perfectly round and plump in appearance, rejecting all that have a brownish-looking colour. Look well to earwigs, a single insect may now destroy all the blooms of a plant. Use manure-water sparingly; keep thoroughly free from mildew; if any exists it will first be discovered upon the underside of the foliage, when apply sulphur without delay." Chrysanthemums in the open air are now looking uncommonly well, and with a continuance of the present genial weather a good bloom should result. Let us hope it will last: it is a kind of natural compensation for such a wet cold summer.

—— TREES INJURED BY FUNGI.—Our correspondent, "W. S.," has sent us from Devonshire some roots of a Lime tree, which is in a very unhealthy state, apparently from the attack of a thread-like mycelium. The tree and one or two neighbouring trees have been in a similar condition, and a Walnut and Horse Chestnut have perished from the same cause. The late Sir W. MIDDLETON consulted us some years since about some Beech trees in a similar condition, which were evidently suffering from a mycelium. It is, of course, difficult to do anything with large trees, but the only chance of saving them is to remove the soil very carefully, pruning off every affected root, and replacing the old soil with entirely new compost, taking care that there is no fresh source of evil. We have known such treatment to succeed where it was practicable; and if it is very desirable to save the tree in question, and the necessary labour is not grudged, we should recommend its adoption. The work must, however, be done efficiently, or there will be no probability of success. *M. J. B.*

—— BAMBUSA HETEROCYCLA.—Under this name M. CARRIÈRE in a recent number of the *Revue Horticole* figures and describes a Bamboo, which was shown in the Japanese department of the Paris Exhibition. It will be remembered that in an ordinary Bamboo cane the scars indicating the position of the leaves run horizontally round the stem, but in the variety above mentioned the scars take an oblique direction, the lowest from the left obliquely upwards to the right of the observer looking at the stem, the next above from the right to the left, and so on alternately up the stem for a certain distance, when the horizontal direction is resumed. There is or was in the British Museum a stem of such a Bamboo which is striking enough to attract the attention even of the least observant in such matters. We presume the explanation is to be sought in an uneven distribution of the force of growth, analogous to that which produces the so-called horse-shoe mode of insertion of leaves.

—— THE HARDY CHARACTER OF LAPAGERIA ALBA.—The branch of the white Lapageria which has grown through from the inside to the outside of one of the small span-roofed plant-houses at Gunnersbury Park, Acton, has this season borne several flowers, and matured a seed-pod or two, and this although it is on the north side, where scarcely any sunlight falls. It is now four years since it was first seen issuing from between the door-post and the brickwork, and from that time forward the severest weather has scarcely affected the shoot, which has now grown into a spreading branch. It has been remarked that the great aim of the grower should be to protect the roots from harm—from frost—and the branches will take care of themselves.

—— SELECT FUCHSIAS.—Amongst the desirable Fuchsias we recently saw growing at the Swanley Nursery was one called penduliflora. It evidently belongs to the corymbiflora type, but is less coarse-growing and more free-blooming. It has opaque greyish green leaves, somewhat rugose on the surface, and drooping corymbose clusters of tubular blossoms of the richest glossy crimson. Another variety, named Aurora superba, was also very attractive, its large and abundantly-produced flowers having the sepals of a salmony tint with a flush of yellow, and an orange-scarlet corolla. These varieties are both acquisitions as free-blooming decorative plants of comparatively bold habit, and have not the defective puny character and want of vigour which depreciates the value of some of the high-bred varieties.

—— ÆCHMEA LEOPOLDII, Hort., has flowered this autumn at Kew, and proves to be quite identical with Billbergia fasciata, Lindl., *Bot. Reg.*, t. 1130; B. rhodocyanea, Lemaire, in *Flore des Serres*, t. 207; Hook., in *Bot. Mag.*, t. 4883; Hohenbergia fasciata, Schult. fil, *Syst. Veg.*, vol. vii., p. 1253; Baker, in *Ref. Bot.*, sub t. 284; Hoplophytum fasciatum, E. Morren, Cat. 1873, p. 9. *J. G. B.*

—— OXALIS TORATA, IN FLOWER AT KEW, is one of the most charming of the hardy species, and, indeed, of the entire genus. It grows only 3 inches high, forming a neat and dense tuft of leaves; the flowers are of the brightest golden colour, and are so numerous as almost to hide the foliage beneath. It is a native of Chili.

—— GLEDITSCHIA MACRACANTHA (*Loudon's Arboretum*, ii., p. 655).—A low tree of spreading habit, with very large branched spines produced from the trunk. Leaves pinnate, 6 inches long, with a stout petiole and rachis channelled on the upper surface. Leaflets 3½ inches by 1⅛ inch, in pairs, separated by internodes half the length of the separate leaflets, fleshy, oblong-obtuse, slightly unequal at the base, crenate-serrate, rich deep green above, paler beneath. Flowers and pods not seen. Said to be a variety of G. sinensis. There is a fine specimen of this tree at Fulham Palace, its fleshy deep green foliage and spreading branches giving it a very striking appearance.

—— GLEDITSCHIA SINENSIS.—A singular-looking tree, of moderate size and straggling habit. The branches are slender, tortuous, with short internodes. Buds small, pointed, solitary, or in clusters, invested with scales mostly brown and membranous, but one of which is sometimes prolonged into an oblong, obovate, somewhat concave leaf, 1½—2 inches by ½ inch, finely serrated, obtuse at the apex, and tapering at the base into a short stalk. The true leaves are 3—4 inches long, imparipinnate, the leaflets glabrous, deep shining green, about 1 inch by ⅜ inch, oblong ovate, slightly acuminate, finely toothed, and shortly stalked, venation reticulate. The flowers we have not seen, but the pods are 5—6 inches long, 1¼ inch broad in the middle, flat, falcate, oblong, tapering at the base into a stalk about ¾ inch long, and gradually tapering above into a long, curved, broad acumen. We presume the specimen before us, and which was taken from the tree in the Bishop of LONDON'S Palace garden at Fulham, to be of the variety inermis, as it has no spines.

—— WATERPROOF LABELS. Messrs. FISHER, CLARK & CO., Boston, have sent us a small sample of a new waterproof tree and plant label, which they state will "stand all weathers, and by writing with their specially prepared pencil, remain at all times discernible, and cannot be rubbed out by any fair means." We have not had them long enough to test their merits, and merely mention them now as being in the market.

—— SUMMER FLOWERING CHRYSANTHEMUMS. These plants make a very attractive display at this season. Some indeed have been in bloom for several weeks, their dwarf close habit and perpetual flowering qualities rendering them great acquisitions. From a fine collection in the nursery of Mr. WARE, of Tottenham, we noted the following as specially deserving attention:—Precocité, rich yellow; Frederick Peel, rich maroon; Chromatella, yellow; Cassy, pale pink; Jardin des Plantes, yellow (there is also a white variety of this variety), Golden Button, and a very small globular flowered variety, Scarlet Gem.

—— STOKESIA CYANEA.—At Messrs. J. J. HAYES' nursery, at Edmonton, this late flowering herb is much grown for supplying cut flowers late in

the year. It is cultivated in pots, standing out-of-doors all the summer and coming into flower in September, and when put into a cold house it continues to supply plenty of its pretty blue Aster-like flowers. It is propagated by division of the roots, large plants are broken up into four or five pieces, and put singly into 48-pots. It would appear that it is not absolutely necessary to repot each year, as some plants in 24-pots bloomed well, although they had not been shifted for two years. It is one of those useful plants that is but little grown, but which when properly treated makes an ample return for the care bestowed on it. It is well worthy the attention of gardeners whose aim it is to have cut flowers in autumn and winter.

—— Autumn-flowering Cyclamens.—Messrs. Sutton & Sons have sent us a fine batch of blossoms of Cyclamen persicum, from plants which they inform us are just about a year old. They are of vigorous growth, and with remarkably bold flowers of various shades of colour. We can imagine nothing more useful at this season of the year for ordinary greenhouse and room decoration than a good supply of these autumn-blooming Cyclamens. We may also mention that we saw a few days since in Mr. Fraser's nursery at Lea Bridge a whole houseful of these autumn-blooming plants, in capital condition. Such rapid cultivation as this is a wonderful advance upon the practice of our forefathers, or even on that of many of the present generation of gardeners, the Cyclamen certainly not being, in a general way, made the most of in private garden establishments, notwithstanding all the explanations which have been given of its treatment for market purposes.

—— A New Species of Machæranthera (now reduced to Aster) is in flower at Kew, and is by far the handsomest yet introduced. It forms a rosette of narrow spathulate entire leaves 6—9 inches long, reduced upwards, then slightly toothed, and variable in form on different plants. The panicle grows from 18 inches to 2 feet high, and bears many expanded flower-heads; one measured was 2¼ inches in diameter, and had fifty ray-florets. The colour is bright blue-purple. It grew from seeds received from Colorado, and may be considered a biennial, though now flowering the first year. A figure will be published in the *Botanical Magazine*.

—— Diervilla (Weigela) rosea, Lindl. This beautiful Chinese shrub is blooming for a second time in many places. There are now several varieties of it in gardens, including one with white flowers figured at p. 80. One of the best and deepest coloured is that known as D. rosea Van Houtteï.

—— Prunus Padus, var. aucubæfolia. This is a singular variety, apparently of the Bird Cherry, Prunus Padus, with leaves, the largest of which measure 5 inches by 3 inches. They are shortly stalked, oblong obovate, shortly acuminate, rounded or tapering at the base, glabrous and dark green above, spotted with irregular blotches of pinkish yellow colour, paler beneath where the venation is prominent. It is a very pretty and remarkable variation, which we strongly recommend to planters for its novelty and beauty. Our notes were taken in the nurseries of Messrs. Osborn, Fulham.

Paris Exhibition. We understand that Mr. John Wills has been awarded a grand prize of honour and a gold medal for his contributions to the horticultural department of the Exhibition. Mr. Wills well deserves his honours.

—— Lycaste rosea, var. rubrasplena.—Under this name Messrs. Cripps & Son, of Tunbridge Wells, send us cut specimens of a very handsome variety of this superb climber, which are remarkable for the larger size, finer form, and richer colour of their blossoms, as compared with those of L. rosea superba, which accompanied them. The plant is known to vary considerably from seeds, and both the above are good forms. With them came a beautiful spray of the white variety, which Mr. Cripps remarks is "by far the freest bloomer of either."

—— Colchicum crociflorum.—This is a new, distinct, and very beautiful species. The flowers are much deeper in colour, smaller, and much dwarfer than those of C. speciosum. They are deep brilliant purple, irregularly flaked with delicate pink. Plants of it are now flowering most profusely amongst the herbaceous plants in the nurseries of Messrs. J. Backhouse & Son, of York.

—— Chrysanthemums for Market. Good market specimens are made by putting three cuttings of any suitable variety in a 60-pot in the month of August, and growing them on to come into flower at the end of October or early in November. When the cuttings are put into pots they require to be kept close for a little while in a cold frame until they root, and they are then stood in the open air and kept well watered when it is necessary to do so. A shift is given into 48-pots, and the specimens are kept growing generally. A good useful variety for this purpose is Miss Talfourd, a white large-flowering variety, and when in bloom, from cuttings struck in August, it does not exceed 1 foot in height. Such plants find a ready sale when well grown and bloomed, at good remunerative prices.

—— Phlox Virgo Maria.—This is one of the very best of the autumn flowering Phloxes. Its very free-flowering habit and fine panicles of pure white flowers give it a special value. We lately saw it in fine condition in the nursery of Mr. Ware, at Tottenham.

—— Arundo mauritanica, of South Europe, is now a fine object in the Lily-house at Kew. It has twenty-four immense feathery panicles, each about 3 feet long, and in addition the leaves are highly ornamental. Many are 2½ feet long; they taper nearly from the base, and are drooping and very glaucous. Among the stout flowering canes are many others slender and lithe, which help with their graceful leaves to form a perfect specimen.

—— Conservatory Climbing Plants.—Cissus capensis has five-sided leaves, the base being truncate or straight, the sides at first straight and parallel, afterwards converge above the middle to a point, in fact the leaf is like a palmately lobed leaf with the lobes truncated. The margin is scalloped and toothed, the upper surface glabrous, the lower paler and covered with brownish down especially along the nerves. For the back wall of a conservatory or pillar of a corridor it is well suited. As climbing plants for corridor decoration or for similar work some of the species of Cissus are noteworthy. Visitors to Messrs. Veitch's will remember the use made of the Kangaroo Vine, Cissus antarctica, in the long corridor leading from the entrance to the house in which the Tree Ferns are placed. The leaves of this species are 3 to 4 by 2 to 3 inches, ovate, slightly cordate acuminate, coarsely toothed, somewhat leathery, rich dark green and glabrous above, paler beneath, and covered with brown hairs on the prominent nerves. Cissus rhomboidea, which we met with lately in the nurseries of Messrs Osborn, is also a singular and beautiful species. The leaf before us, which is a small one, probably by no means representing the full size, is rather broader than long, quite glabrous, deep shining green above, pale brownish green beneath; ovate cordate in general outline, and consisting of three distinct slightly stalked leaflets, of which the central is the larger, rhomboid, acuminate, wedge-shaped at the base, and finely and remotely toothed. The lateral leaflets are similar, but smaller and oblique.

—— The Caucasian Cherry Laurel. It is as well to remember that this is a more desirable variety than the common Laurel. As we observed it lately in the nurseries of Messrs. William Paul & Son, at Waltham, we found the leaves of a lanceolate not oblong obovate form, and tapering not rounded at the base. The great advantage of this form consists in this, that the new growths of the year are ripened off earlier, so that there is less risk of injury from frost.

—— Schizostylis coccinea is an extremely fine hardy plant, flowering at this season. At Kew its large crimson flowers are in profusion from a tuft in one of the borders. Tigridia Pavonia is one of the showiest of all Irids, and has been in flower for two months. It prefers a warm and sheltered position, like the Belladonna Lily, and is suitably planted under the wall of a greenhouse. At Sir George MacLeay's a short time since we saw a fine variety distinguished as grandiflora. While noticing Irids we may mention that Tritonia aurea was very fine at Chiswick a short time since, and quite striking in its rich orange colour. Many of these once considered tender are now found to be hardy, and others still may be grown out-of-doors with protection. They are not so suitable for pot-culture as true bulbs, and should always be so grown when possible.

—— Quercus pedunculata var. fastigiata (*Loudon's Arboretum*, iii., p. 1731).—A very handsome tree of this variety exists in the grounds at Fulham Palace. At present it is of middle size, of flame-like form, like a Lombardy Poplar, with ascending branches densely clothed with rich foliage, which, as also the acorns, partake of the character of the pedunculate Oak. The Fulham specimen is probably a finer though not so large a specimen as that in the nursery of Messrs. Kinmont & Kidd, of Canterbury.

—— Plants Flowering Out of Season. The observant gentlemen who write to the *Times* in the silly season have duly noted the autumnal flowering of the Laburnum, and, indeed, the phenomenon is this autumn more common than it is in some years, and not only in the Laburnum but also in several other plants, such as Pears, Rhododendrons, Berberis stenophylla, Weigela, &c. In the case of the Laburnum and Pears the autumn flowers are produced on the end of the shoots of the year, not on the contracted spurs, which unfold their blossoms in spring. In fact, the shoot, instead of, as it were, remaining dormant after its formation, continues to grow, and the result is an elongated shoot, not a "spur." It is to the flowering branch what the midsummer shoot is to the wood branches. In Weigela and Rhododendron the flowers that are now opening are those which should open next spring, but which have been forced into premature development. The same is the case with the Jasminum nudiflorum, which is now in bloom on a wall in our sight as we write.

—— Fraxinus americana virescens. Leaves 12—18 inches, four-paired, jugæ widely separate, leaflets lanceolate or oblong-lanceolate, acuminate, tapering to the base into a short stalk, entire or slightly toothed, glabrous and deep green above, paler beneath, and hairy along the nerves. The terminal leaflet exceeds the others in size. The rachis or continuation of the leafstalk is flattened at the sides, and channelled on the upper surface. This is one of the varieties of the American Ash, and in point of foliage is more elegant than the common Ash. We have seen only small specimens.

—— Pancratium speciosum, flowering in the Palm-house at Kew, is one of the most handsome of easily cultivated and strong-growing stove bulbs. The pure white flowers are of large size, with long and gracefully arched segments, and numerous in each umbel. It has noble leaves, quite equal to those of the Eucharis. A native of the West Indies.

—— Gardening Changes.—Mr. J. Groom, late gardener at Henham Hall, Suffolk, has succeeded Mr. Malcolm McLean as gardener to Viscount Holmsdale, at Linton Park Maidstone; and Mr. McLean has succeeded Mr. Thomas Record as gardener to James Whatman, Esq., Vinters Park, Maidstone. Mr. H. Benham, late gardener at Warnford Park, Bishops Waltham, succeeds Mr. Groom at Henham.

THE GOURD AND THE PALM.

"How old art thou?" said the graceful Gourd
As o'er the Palm tree's crest it poured
Its spreading leaves and tendrils fine,
And hung a-bloom in the morning shine.
"A hundred years!" the Palm tree said,
"And I," the saucy Gourd replied,
"Am at the most a hundred hours,
And overtop thee in the bowers!"

Through all the Palm tree's leaves there went
A tremorous thrill of self-content.
"I live my life," it whispering said;
"See what I see, and count the dead.
And every year, of all I've known
A Gourd above my head has grown,
And made a boast like thine to-day;
Yet here I stand—but where are they?"

HERBACEOUS PLANTS.

Coreopsis lanceolata, L. ; Gray, Manual, p. 259.—Glabrous or slightly hairy, stems 1—2 feet, branching towards the base, cylindrical, striated. Leaves 2½ inches by ⅝ inch, opposite, sometimes slightly connate at the base ; lanceolate-spatulate, rather acute, tapering at the base, slightly ciliate. Flower-stalks elongate, leafless, bearing solitary terminal flower-heads 2 inches in diameter. Involucre less than half the length of the ray, of two rows of bracts, outer ovate lanceolate, green, inner similar, but more membranous and longer. Ray florets ovate, 4-toothed at apex, orange-yellow ; disc florets tubular, yellow. Southern United States.

This species may be specially recommended for the ong duration of its bright flowers, which are well adapted for cutting.

Vernonia noveboracensis, Willd., ex Gray, Manual, p. 222.—A noble purple-flowered herbaceous plant, not unlike our wild Serratula, but a much handsomer plant. Stems 6—8 feet, ribbed, purplish. Leaves 3—4 by ¾ inch, very shortly stalked, lanceolate, finely toothed, rough and dark green above, paler beneath, with prominent venation. Flower-heads ½—¾ inch across, violet purple, numerous in terminal, nearly leafless corymbs. Involucre cup-shaped. Bracts numerous, in many rows, oblong lanceolate, mucronate, appressed, brownish, half the length of the tubular 5-lobed florets.

Gentiana Andrewsi, Grisebach, ex Gray, Man. Bot. U.S. 1868, p. 388.—This is a handsome North American autumn-flowering species, about a foot in height, with opposite lanceolate entire leaves 3—4 inches long, nearly an inch in breadth, the deep blue (or in the variety, white) erect flowers are densely clustered in the axils of the upper leaves. The individual flowers are 1 — 1¼ inch long, tubular, club-shaped, and are rarely seen expanded ; hence the inference that the flowers are self-fertilised, but on examining the flowers the anthers are seen to cohere firmly by their tips, and to burst outwardly, while the stigma is concealed in the hollow cone made by the united anthers, and is thereby protected from the pollen. An examination into the life history of this beautiful plant would be desirable. Technically it is "proterandrous," that is, the stamens are ripe before the stigma, and "cleistogamous," that is, the flowers do not open.

Achillea Ptarmica fl.-pl.—This is a double-flowered variety of our common wild plant, but its little globular heads of white flowers, like a Turban Ranunculus, are very pretty and most useful for bouquet-work. They last also a long time in water. The flower is so "double" that the uninitiated would hardly recognise in this plant a Composite like the Daisy, yet such it is, the central florets being all developed in a ligulate instead of a tubular manner, as in the single form. Each apparent petal is really a distinct flower. It is a close ally of the common Milfoil, although its linear saw-toothed leaves are very unlike the extremely divided leaves of the Milfoil.

Michaelmas Daisies or *Asters*.—Their name is legion —their forms most varied, in consequence their identification is a matter of the greatest difficulty. Some are very handsome, others are weedy. To see them well they should be grown not as single plants, but in clumps or large clusters. The beds of these flowers at Mr. Ware's, at Tottenham, are just now very striking, and are likely to continue so for some time to come. Bees and butterflies also find these plants very attractive, and contribute no doubt to the difficulties of identification by assiduously "mixing the breed." Mr. Ware selected for us the following as being among the most beautiful of those now flowering :—

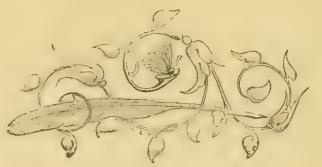
Aster Amellus.—This European species has been previously referred to at p. 407.

Aster Novæ-Angliæ, L. ; Gray, Manual, p. 235.—This is a tall-growing species, stems 3—6 feet, cylindrical, erect, much branched, purplish, studded with white spreading glandular hairs. Leaves sessile, clasping, narrow lanceolate, ciliate, and finely saw-toothed ; the upper leaves beneath the flower-heads not becoming suddenly smaller as in some other species. Bracts of the involucre numerous, erect, or partly spreading, linear-lanceolate or awl-shaped, half the length of the linear spreading violet ray-florets, central florets yellow. The flower-heads are in dense terminal corymbs, and each measures nearly 2 inches in diameter. Fl. autumn. The variety *roseus*, called in gardens ruber, is even more handsome, from the rich rosy lilac colour of its flowers. Both are suitable for the back rows of the herbaceous borders, and when seen in dense clumps in full sunlight they are really magnificent.

Aster lævis, Linn., ex Gray, Manual, p. 232.—Stems 18—24 inches, erect, much branched. Leaves like the stems, glabrous, 1 inch long, ¼ inch and upwards broad, the upper gradually smaller, and densely crowded beneath the flower-heads, sessile, ovate-lanceolate, somewhat leathery in texture. Flower-heads about 1 inch in diameter, in densely crowded terminal corymbs. Involucre cup-shaped, with numerous minute linear lance-shaped or somewhat spatulate awn-pointed, appressed scales, much shorter than the ray-florets. Ray-florets narrow, pale violet : disc yellow.

Aster longifolius, Lam. ; Gray, Manual, p. 233.—Glabrous, stem erect, 2—6 feet, much branched, cylindrical. Leaves variable, sessile, mostly lanceolate, entirely or obscurely serrulate, suddenly and conspicuously diminishing in size, but becoming more crowded beneath the very numerous corymbose flower-heads, which latter measure about 1 inch in diameter. Involucre cup-shaped. Bracts in many rows, linear, lance-shaped, spine-pointed, appressed, rays pale lilac, oblong, blunt ; disc yellow.

All the species above mentioned, except the first, are North American, and all are therefore hardy, suitable for the herbaceous border, the fronts of shrubberies, wilderness walks, or other similar situations. It may be useful to state that the points of distinction are to be looked for in size, habit, form, and clothing of leaf, in the relative size of the leaves of the barren and of the flowering branches, colour of flowers, &c.



Home Correspondence.

Hortus Europæus.—I am glad to see that the subject of a *Hortus Europæus* is again brought before the notice of the public in your leading article last week. I entirely agree with you that though the want of such a *catalogue raisonée* of cultivated plants is much felt not only by scientific horticulturists but by amateurs and the trade, yet we are not likely to get one of much practical use unless it be taken in hand at Kew. The assistance and co-operation of many foreign and colonial botanists and specialists would of course be necessary, but the work must be carried on under the direction of some great central establishment, and it will be allowed by all that no other place affords so many advantages as Kew. I am well aware that the time of the staff there, from the Director downwards, is most fully occupied already on what may be as necessary and more pressing work, but still, if the plan of operations was once decided on I believe that means would be found and men would be forthcoming to undertake the greater part of the work. It seems to me that what we want is a list of all the species, well marked varieties, and known hybrids of such families and genera as, either from their beauty, utility, or interest, are in general cultivation. It would be obviously impossible to treat of such orders as the Compositæ, Umbelliferæ, or Gramineæ, in the same way as might be done with the Rosaceæ, Liliaceæ, or Amaryllidaceæ. It is also evident, that however well up a botanist may be in any particular order, and however ample may be his material in the shape of herbarium specimens, he would not satisfy the wants of the growers of such plants unless he could bring to bear on his revision of the order such an intimate knowledge as can only be gained by observing and studying the plants under cultivation. This applies more particularly to the monocotyledonous orders, such as Orchideæ, Irideæ, Amaryllidaceæ, &c., which are, and always have been, such universal favourites, and which, as I think will be allowed by the most determined herbarist, can only be described or classified in a really satisfactory manner from living specimens. Now, as we have many men in England who are able from their own personal knowledge to work out many of the principal genera in a critical and complete manner, I do not see why a commencement of the proposed *Hortus Kewensis* should not be made. Every year certain families and genera might be selected, and the most competent persons invited to assist in or to undertake the revision. [A catalogue of the Aroids was issued this year with the annual report. EDS.] The results of their work, when brought together and edited on a uniform system, might be published annually, and in time a satisfactory basis would be laid for as complete and useful a catalogue as can ever be expected. With regard to many families which have for years been treated as florist's flowers, and which it would be impossible to catalogue in the same way as the more strictly botanical genera, the difficulties would be greater ; but here I think the resources of Chiswick and the committees of the Royal Horticultural Society might be called into play. Our annual trials, if systematised, would really be the very work which is wanted, and though in all cases a botanical basis must underlie the horticultural part of the work, yet I do not see why such genera as Pelargonium, Fuchsia, Rosa, or Berberis, should not be collected together, critically compared and catalogued at Chiswick, as well as at Kew. On the other hand, when we have to deal with Aroids, Crinums, Nymphæas, Scitamineæ, or Agaves, Kew and Kew only affords the necessary space, resources, and appliances ; while for such genera as Stapelia, Cistus, Crocus, Iris, or Saxifraga, we shall find amateurs who, having made a *specialité* of those genera, are, if working on a uniform system, better able to deal with them than a botanist who only knows them generally. Every one who has ever taken up a special genus, which I hold to be one of the greatest delights of horticulture, has had already to work out for himself almost all the facts necessary for the proposed catalogue ; and I feel sure that when the details were settled the work might get on rapidly. Let me suggest that a meeting be called at South Kensington on some convenient occasion to discuss this question, for though I fully recognise how much we owe to Professor Morren for all he has done to call attention to the subject, yet I fear that the scheme can never be carried out by an international committee. *H. J. Elwes, Cirencester*. [It is a fit subject for the Scientific Committee. EDS.]

Spring Flowers in Autumn.—A gentleman writing to *Land and Water* last week, mentions having seen Primroses in blossom. I have within the last month seen not only Primroses but Violets both blue and white in bloom. I was walking in the fields one evening, the third week in September, when I could not help remarking, "How very spring-like it feels." "Do you think so?" was the reply. "Yes ; why the very air is full of spring ; I could almost declare that I perceive the scent of Violets." "On your handkerchief, perhaps." There was the ring of a sneer in the voice, just a faint dash of sarcasm in the tone, and I was of course nettled. "There must be Violets," I cried, and on looking into an adjoining hedge I found a handful of the wild white Violet, and quoting my favourite Clare—

> "And just to say the spring was come,
> The Violet left her woodland home,
> And, hermit-like, from storms and wind
> Sought the best shelter it could find
> Beneath long grass"—

I retraced my steps, rejoining my sceptical companion. On returning home I sought out the pet bank where blue Violets and Primroses congregate in early spring, and there I discovered a few buds of the latter, but not one single blossom of the emblem of liberty. A further search in the garden rewarded my perseverance, for under the drawing-room window I picked another handful of blue deliciously sweet-scented Violets—

> "Violets dim,
> But sweeter than the lids of Juno's eyes
> Or Cytherea's breath."

A further investigation showed me that all the Violet beds in the garden were in a blooming condition. Spring flowers have evidently either dispensed with their usual winter nap, or have been called early this year. *Mrs. Alfred Watney*.

Tropæolum speciosum.—Though it is seldom that one sees this fine creeper in anything like healthy condition in English gardens, yet in Scotland it is one of the plants that appear to grow without any trouble, as it may there be seen climbing up the gable ends of buildings and looking in the most luxuriant health. This is no doubt owing to the climate there being cooler, and more moist than we have it here, a state that suits this Tropæolum. The leaves of this plant are very susceptible to red-spider, an insect that has a special liking for it, so much so indeed that it is next to impossible to keep it entirely free from its ravages. The only way to manage it successfully is to plant it at the foot of a wall or other situation where the sun never reaches it, or if so, only for an hour or two in the morning or evening, as red-spider does not make much progress except under the influence of solar heat, and the Tropæolum being naturally a shade-loving plant such a position exactly suits it. Till I hit on a plan of this kind I could not get on with it at all, but this summer I have it in great beauty on the end of a greenhouse where it is twining up strings strained tight for the purpose. I have heard of people experiencing great difficulty in transplanting it, and getting it established, but I have never had the least trouble in either respect, and it was only last autumn that I transferred the whole stock to its present position. In rooting it out of its old quarters after it had died down, numerous pieces of pale fleshy tuberous roots were found, all of which when put into the fresh soil grew and threw up several shoots that soon ran up and filled the space allotted to them. In wet cold soils it frequently occurs that the delicate tuberous roots rot, and therefore before planting it is best to give them some kind of drainage low down, that the water may quickly drain away, to aid which some leaf-mould and sand should be worked into the border to keep it open and porous. During summer it cannot well be too moist and cool at the root, and an occasional syringing is a great help in maintaining the foliage fresh and healthy as is also a mulching of light rotten manure, the effect of which is to intercept evaporation, this making a watering tell for a time. The habit and growth of

Tropæolum speciosum much resembles that of T. tricolorum or Jarratii that was once so highly prized for greenhouse decoration, but the foliage and flowers are much larger with more distended petals. Just now they have a very curious appearance owing to the peculiar way they bear their seeds, which are contained in fleshy blue berries embedded at the base of the petals but at the upper end of the tube. This as the seed swells thickens considerably and changes to a dark brick-red colour, so that the contrast between the two with the bright petals still attached is quite striking. I send you one or two with this that you may see how highly ornamental they are at this stage, and up till now and for months past the plants have been ablaze with bloom. *J. S.*

Peziza crucifera (Phillips).—Dr. Cooke considers (p. 442 *ante*) the name I have given to this little species "unfortunate, because the crosses on the hairs are no essential part of the plant." I would say in reply to this objection that the name expresses a character which, as far as our knowledge goes, is invariably present, and is directly traceable to a function of the plant. Even if the crosses resulted from some source foreign to the plant, still being always found in the curious position they occupy, the name would be as allowable as many others given and accepted by mycologists, and even by my friend Dr. Cooke himself. It is highly probable, if not certain, that these crosses, or more properly crystals, result from a fluid excreted from the terminal cell of each hair, which, collecting in a globule on the exterior, deposits a single crystal of oxalate of lime. At the recent meeting of mycologists at Hereford I offered this as a reasonable explanation of the phenomenon, and further said that I had noticed transparent granular masses of matter occupying a similar position in the following species:—Peziza solfatera, Cooke and Ellis; P. epixantha, Cooke; P. papillaris, Sow.; P. clandestina, Bull; P. Schweinizii, Awd.; P. palearum, Des.; P. latebricola (Rehm.); P. rosea (Rehm.); P. brunneola, Desm.; P. echinulata, Awd.; P. patula, Pers.; P. barbata, Kunz; P. spiræa, Schw.; P. pellita, Pers.; P. marginata, Cooke; P. scabrovillosa, Phillips; and a species unnamed in Mr. Berkeley's herbarium from the Nilgherries. These masses of granular matter have been for some time known to exist on the points of the hairs of several species, but no satisfactory explanation has ever been offered of their nature. The definite crystals on Peziza crucifera throw a new light on them, and point clearly to the fact that they also are amorphous masses of probably carbonate or oxalate of lime. The most formidable objection offered by Dr. Cooke is not that to the appropriateness of the name, which I think is sufficiently answered above, and may therefore be dismissed, but to the validity of the species, unless some other characters than this one can be pointed to as distinguishing it from Peziza virginea. This is undoubtedly a very serious objection, unless it can be fairly met. Having drawn up my diagnosis previous to being made aware by Mr. Berkeley of the nature of the crystals, I may have relied too much on their presence and omitted other essential characters. That it is not the same species as P. virginea, however, will be seen at once by comparing Dr. Cooke's own figure of that species in *Grevillea* (vol. iv., tab. 51, fig. 272) with my figure of P. crucifera in the *Gardeners' Chronicle*, p. 397. The hairs of P. virginea are there represented as non-septate, cylindrical hairs, whereas in P. crucifera they are distinctly septate and enlarged at the summits. P. crucifera has not hitherto been detected on any other plant beside Myrica Gale, and I presume is peculiar to it. To my own mind, and I venture to think to the mind of most mycologists, such differences, coupled with the invariable phenomenon of the crystal-surmounted hairs, will establish the validity of the species. *William Phillips.*

The Hyde Park Trees.—There is one point in relation to the gradual decay of the trees in this park and the adjoining gardens that does not seem to have been sufficiently noticed. Living several miles to the west of London I have often at certain times of the year had to experience, when the wind is in the east and there is a heavy atmosphere above the lower current, the most uncomfortable effects of London smoke. It not only resembles a thick fog, but further seems to be heavily charged with a sulphureous compound that renders it difficult to breathe. Hyde Park lying to the west of the metropolis must therefore be specially well placed to receive all the evils that follow from thick effusions of the discharge from all the chimneys of the East End, Bermondsey, Lambeth, &c., when borne thither by a cold biting east wind. Of course other parts of London suffer from the same evil of smoke, but the association of the keen east wind with it can only be felt on the west side, and Hyde Park is so placed as to receive the full benefit of it even if the wind should be a few points on either side of the quarter. To this there is to be added the undoubted fact that a large portion of the trees in the park are very aged, and therefore less able to combat the smoke evil than are younger ones. I fear that under the present state of the London atmosphere any gardener will find it difficult once more to convert Hyde Park into the least resemblance to a sylvan grove. *Alex. Dean.*

Is Scotland a Part of England for Exhibition Purposes?—Mr. R. Dean has made a long story under this head, and has told only part of the truth. He made the protest and I disposed of it. We sat together at luncheon, and he asked me to give attention to the matter. In my usual affable way I consented, but I did not promise to decide in his favour. The case is very simple, and turns upon the wording of the schedule, which is not, in such a case as this, open to any private interpretation. England does not include Scotland. The geographer, the lawyer, the legislator, and the scholar will all agree in this—it is not a question of Potato growing but of the legal and common-sense meaning of certain words. Had I found such terms as "Britain" or "United Kingdom" where the word "England" occurs in the schedule, I should have decided for Mr. Dean, but when the letter of the law demands strict observance England is England according to the dictionary and the map. Mr. Dean reminds me of the working man as depicted by *Mr. Punch* the other day—"Do you call this arbitration? Why, they've given it against us!" It is an act of great impropriety for Mr. Dean to raise the question when it was decided against him by an arbitrator of his own appointing. *Shirley Hibberd.*

Eucalyptus globulus.—The late mild winter, exciting hopes of others like it to follow, has led possessors of Eucalypti to compare the heights of their respective specimens, but there is one feature in the growth of E. globulus which I do not remember to have seen remarked in print, although (perhaps because) it is common to many other plants—namely, the altered character of the foliage with increasing age. In young plants not more than two or three years old, the leaves are sessile on their branch, fixed in a plane more or less perpendicular to the axis of that branch. Such branches, if growing close enough together to form a thicket, would give a fair amount of shade. This is the condition of most of the subjects seen in pots or tubs or planted out for summer ornament, and it lasts until the tree has attained a height of ten or twelve feet at least—it may in fact be asserted that, to the great majority of the frequenters of gardens, E. globulus is known in no other state. But when a three-year-old specimen, planted out in the open in spring, has taken good root and survived uninjured a winter like the last, its new terminal shoots then assume quite a different type. The leaves, once sessile, droop from footstalks an inch and a half long or longer—for their length seems to increase with increasing growth—and they hang in a vertical plane, perpendicular to the horizon, so as to afford but little shade, and the higher the sun mounts the less shade they give. The peculiarity is worth noting, not merely to show its falling in, at a certain stage of growth, with the general type of Australian foliage, but also, like your dwarf Almond and Quercus salicifolia leaves, as a caution to those who expect to get too much information from leaves alone. *Apropos* to mild winters, it would be useful if the possessors of Berberis Darwinii fences would, for the benefit of intending planters, give an account of their condition next spring, the situation they grow in, and the temperature they have supported. Of all things a hedge-plant ought to be hardy in the Midland Counties as well as in the South of Ireland. *E. S. Dixon.* [The difference between the juvenile and the adult form of the leaf is well known in many species of Eucalyptus. A similar thing occurs in Retinosporas and other Conifers. Eds.]

Marie Louise Pears.—At Thames Bank, Great Marlow, I saw the other day one of the most remarkable crops of Marie Louise Pear I ever remember. The tree occupied 262 square feet of a north-east wall; the crop now gathering is 6¼ bushels, 1390 Pears, all of a nice medium size, smooth, and clean. I was told by the intelligent gardener (Mr. Bridgman) that the tree bears every year. When one knows how uncertain the Marie Louise is in bearing, this is noteworthy. I have at my place at Hereford two large trees which never bear a crop, although every means has been tried, including root-pruning, to check luxuriant growth and induce bearing, but as yet without success. Wall-fruit at Thames Bank has been very fine this year, the Apricots and trained Plums were a picture. I may add that the garden generally, although not very large, is a model of good and clean cultivation. *George Davison, Great Marlow.*

Autumn-bearing Raspberries.—The man who raised this most useful and acceptable fruit—whoever he may have been—deserves the best thanks of the gardening fraternity. Their habit of coming in at a time of year when kindred fruits are on the wane, and continuing to bear and produce a goodly supply all through late autumn, and sometimes during favourable weather in early winter, enhances their value considerably as a dessert fruit. This year the crop has been very bountiful, and the fruit has been of an unusually large size, especially a variety (Belle de Fontenay) kindly sent me last November by Mr. Charles Smith, of Ossimsly Manor Gardens, Christchurch, a variety which bears out Mr. Smith's high—deservedly high—recommendation. It is a very robust grower and prolific bearer, and produces fruit of a dark red colour, of great size, which possesses a very pleasant and agreeable flavour. The canes of Belle de Fontenay and Autumnal Black, and another sort, of which I do not know the name, were all planted the same day in the end of November last, in deeply trenched and highly manured ground, in front of a south wall; but notwithstanding that they were all planted in the same ground, and otherwise received the same attention, Belle de Fontenay throws the other two into insignificance, thus clearly and fairly proving its superiority to the other sorts. There may be as good, or even better varieties than Belle de Fontenay, but I know them not. In conclusion I would say to my brother gardeners who have not the "Belle," to obtain it, and give it a trial, and I have no doubt they will be pleased with the result. *H. W. Ward, Longford Castle.*

Plumbago capensis.—Much, but not too much, has been written in the *Gardeners' Chronicle* in praise of this useful plant. I do not recollect if any of your correspondents have spoken of it as an outdoor or wall plant for summer decoration, but at the present time we have one on our ornamental wall here which is a really beautifully thing. It was an old large plant, and having no inside room for it a vacant space was found, and it was planted out where it now stands early in May last. Since then it has grown fast, and is now covered with its lovely bunches of bloom, forming a most agreeable contrast to the other wall plants, most of which are not now in flower. I intend matting the Plumbago up for the winter, and hope to keep it for next season. Such an experiment might be a hopeless one in some parts of England, but in this highly favoured locality much may be accomplished. *William Payne, Gr., Belmont, Taunton, Oct. 7.*

The Fuchsia.—If Mr. Smith, of Newry, would but carefully read what I have written about the Fuchsia, he would have seen that my remarks justify no such interpretation as he has put upon them. I have specially pointed out that they had reference to the decline of the plant in popularity for exhibition purposes. That it is a grand shrub for outdoor decoration I recently took occasion also to point out, therefore all his lecturing of me is absurd. *A. D.*

Autumnal Roses.—In answer to Mr. Fish I beg to say that the place where I saw those Roses blooming, of which I sent you a list, was at Messrs. Wm. Paul & Son's at Waltham Cross. The major portion of the hybrid perpetuals were young plants grown on seedling Brier, but some were on old cut-backs on Manetti and some on standards. The seedling Brier seems admirably suited for autumn blooms, as they continue growing much longer than the Manetti and the flowers seem much brighter. The reason I did not mention Niphetos and Boule de Neige was simply because they did not come under my notice, but, having seen them since, I see they are two very good autumn Roses. As regards the trees, most of them were in the open ground, some on seedling Briers, and the others that were planted out of pots, but a few were at the foot of the glass houses outside. They appear to do Teas remarkably well at Waltham Cross, as, for instance, a bed of Safrano as mentioned in the *Gardeners' Chronicle* last week, which at this time is truly magnificent, having upon it hundreds of blooms in all stages. There is also a bed of that gem of Tea Roses, Marie van Houtte, which I understand were planted out last June from pots, and it is astonishing to see the growth they have made in so short a time. I was told that Mr. Paul's method of cultivating these was simply to throw a bed up roughly in the winter, adding a little manure and let it lie till midsummer, then plant out from pots, taking care to soak the balls well, and if very hot weather occurs to keep them well watered; they will then soon "lay hold." There are two or three more beds of Teas at Waltham that were planted in the same manner last year, such as Homer, Marie Guillot, and Sombreuil, which are doing remarkably well. I would advise all who want a good display of Roses in the autumn to try Mr. Paul's method. Upon inquiry as to how they withstood the winter I was told that Mr. Paul simply has a little cocoa-nut fibre or leaves put about 2 or 3 inches high to protect the roots and bottom eyes, and then places some boughs of Beech or Fern between the branches; they will then withstand a great amount of sharp weather. I think the most remarkable growth of Tea Roses that I have seen in one year were some dwarf maiden plants on the De la Griffarie stock at Waltham, such as Maréchal Niel and Gloire de Dijon.

They have made plants 8 to 10 feet high, and are now coming into full bloom. As regards Queen of Bedders, I have no doubt it is a grand acquisition to our gardens for its colour, but I think it can hardly be more floriferous [quite as much, if not more] than Souvenir de la Malmaison, and of course you cannot class Bourbon Roses with hybrid perpetuals. I think Duchess of Bedford will become a great favourite when well known, both for summer and autumn blooming, its beautiful crimson flowers towering well above the foliage showing it off to great advantage. Rosy Morn is also a good autumnal, its rose-shaded buds being very pretty. *Rose.*

—— The remarks contributed on this subject are opportune, especially at a time when most Rose growers are thinking of increasing or renovating their collections. We have here upwards of a hundred of the best varieties, which afford ample scope for comparison; and the question has often suggested itself to me, "Which is the best and most useful Rose?" Niphetos, Boule de Neige, and La France are magnificent in their way—in fact, I should imagine that this brilliant trio is absolutely unapproachable in point of beauty; but that beauty, unfortunately, is shortlived when compared with such a fine old favourite as Gloire de Dijon. Perhaps it may be asserted that the old Gloire is deficient in that essential to a show Rose—a good centre; but, let me ask, in what other Rose do we find combined the robust growth with the continual and free bloom extending from spring to winter? I believe I cannot do better than to couple with this fine old Rose Marquise de Castellane, a more recent introduction, but a splendid bloomer. It has by this time completely established itself in every collection of Roses, and may be safely termed as one of the best types of the hybrid perpetuals. I have not the pleasure of knowing Mr. Noble's Queen of the Bedders, but from his description it must undoubtedly be a marvel. Perhaps Mr. Noble will kindly state the period of time her majesty may be relied on for flowering in the open air. *T. A. B.*

Cauliflowers.—Mr. Westland in his observation at p. 443, mentions that the Cauliflower is somewhat tender, being indigenous to a warmer climate than that of England, but lower down states that "the tropical weather of June and July was unfavourable to their growth," points that seem to involve a contradiction. I may mention in relation to the "warmer climate" question that our Snowball Cauliflower came to us direct from Denmark, which can hardly be confounded with "warm climates." Another thing in its favour is its precocity, for, not being so long on the ground, it is less subject to changes of temperature. *A. D.*

—— My own experience fully coincides with that of your other correspondents. I have several sorts growing side by side, and they are only just heading in. It does not appear to me to be a difficult matter to account for. In the district where mine are growing the weather during the month of August was cold and showery; this does not suit the delicate nature of the Cauliflower plant, which requires warm and genial weather to cause it to put forth its flower. I paid particular attention to my plants, and they did not appear to me to grow at all during the time specified, now they are coming on grandly. *S. B. D.*

—— I have not experienced a failure with my Cauliflowers. Perhaps Mr. Fish has a bad strain of seed, and he does not say what sorts he grows. For my principal crop I depend on the Dwarf Erfurt. I have grown it for some years, and find it to stand the hottest summer; I have a fine plot of it now. Veitch's Autumn Giant I grow for the latest, that is, to come in in November. I find these two to answer my purpose well. *John Chees, Headfort Gardens, Kells, Co. Meath.*

Oncidium macranthum.—The number mentioned by Mr. Serjeant Cox of fifty-five flowers on one spike is not an unusual one for a strong plant. One last autumn (1877) with me here flowered with two spikes, the larger bearing ninety-two, the small twenty-three flowers. There was not much difference between the bulbs from which these spikes proceeded—if anything the smaller spike came from the larger bulb. I have several times seen over sixty flowers on a spike in other collections, but neither with me nor elsewhere do I remember more than four flowers on any one branch. Of course in thus reckoning one counts from the terminal flower to the first bifurcation of stem; sixes, sevens, and eights may be made if all flowers to the main stem be included. There appear to be great variations in the habit of this invaluable Orchid; some are as shy in flowering as others are free. Fortunately for growers the finer varieties seem the readiest to flower well. Like all its congeners, it is very impatient of heat and of dryness in the atmosphere when in a growing state, though the temperature of an intermediate house is best to assist a due expansion of the flowers. The most satisfactory results, so far as I have proved it, have been obtained by removing the plant from its habitation with the cool Odontoglossums into a house ranging from 58° to 62° after the buds are advanced enough to show the colour of the petals. The true habits and beauty of the florescence can only be appreciated when the spike has full liberty to display its entire length; the barbarous fashion of coiling the flower-stem round stakes is, I trust, a thing of the past. The length of time the spike takes after showing the flowers and before their expansion is a prelude to their long remaining in beauty, and an indication that the constitution of the plant requires a proportionally long rest to recruit Nature after the effort. *Frederick A. Philbrick, 28, Avenue Road, Regent's Park, N.W.*

—— I think the spike of Oncidium mentioned by Mr. Serjeant Cox an unusually large one, but I should like to know if it has flowered with him before, and if so, how many flowers it had, and how long it was kept in bloom, because I have invariably found that when the plants bloom freely and are kept in bloom a long time it weakens them for another season. I have a magnificent variety in bloom now with thirty-six expanded flowers; the best branch has six and the other branches three flowers each, measuring over 3 inches across. The first flower opened on the 19th of last month, and I find by my memoranda that the first flower opened last year on September 19, several flowers lasting in good condition for three months. *F. Newman, Gr., Sunbury House, Tunbridge Wells, October 8.*

—— Referring to Mr. Serjeant Cox's remarks in p. 443, respecting his beautiful plant of Oncidium macranthum with fifty-five flowers, I have flowered several very fine plants, and the largest number upon one spike was twenty-eight flowers. From my experience I should say that Mr. Cox's plant is a very free flowering variety, and the spike is the finest that has ever come under my observation. *W. Gray, Turner Road, Lee.*

Growth of a Wellingtonia.—In October, 1858, I purchased at Messrs. Paul's, Cheshunt, a small seedling in a pot, then about 6 inches high, for which I paid 10*s*. I planted the same at Hunsdon Mill, about 12 feet above the river level. The first five years its growth averaged 3 feet in height, and in girth of trunk above-ground 4 inches annually. Its present height is about 40 feet, and above-ground the trunk measures 10 feet 7 inches; thus making an average annual growth of 2 feet in height, and in girth exceeding 6 inches. If it continues growing at the same rate, in a hundred years its height will be 200 feet, and the girth of trunk will exceed 50 feet. Will some of your numerous readers inform me whether, as the tree increases in age, the rings get compressed closer together? as we find the rings at the heart of old timber so close as to be scarcely discernible. *Thomas Garrett, Hunsdon Lodge, Ware.*

Evergreen Climbers.—You do not mention Cobæa scandens, which, 400 feet above the sea, has stood the winter and grown 20 feet in height and more in width here. It is well shaded by buildings, and is covered now with flowers. Nor do you mention Edwardsia grandiflora, still more exposed, though 60 feet lower down, which also had plenty of its bright yellow pea-flower blossoms. Woodwardia radicans, if covered with leaves and kept dry, will stand the winter well. It does so here, and is a truly noble Fern. *East Somerset.*

Notes on Pea Cultivation.—The Pea season of this year was with us entirely suspended by the frost on the morning of the 1st, but with them, as with other vegetables generally, this has been a very good year. As well, however, as a good summer for weather having to do with a crop, a good deal depends upon the state of the mould at bottom for the roots to draw nourishment from. Gardeners also it might be said often cannot get ground in the condition they would like for the different things. Neither after sowing have they always the means at command for keeping the ground clean for mere appearance sake; but if the most is made of matters as they are, the limit is then about reached. This spring, having a good deal to do and not the opportunity of getting the Pea ground in the ordinary way to my mind, I adopted a very simple plan. The ground was bare, Celery had been planted the previous year in single lines about 5 or 6 feet apart. When the ground was levelled down in the spring after the Celery had been cleared off, marks were made where the rows of Celery had been. The ground was just levelled, and the rows of Peas sown thereon. In this simple way as good rows of Peas for profit have been produced as one could desire; indeed from the very first row that was sown of Champion of England, it is but a few weeks since Peas were gathered, for after bearing the first crop second gatherings were produced. No doubt the cause of this was that the roots of the Peas fed in the last year's made Celery bed. The only mistake that was made was the sowing of one row of a dwarf sort, which once again was convincing that the dwarf varieties of Peas are not profitable to grow. For the success of Peas or Scarlet Runners it is certainly a very safe plan to have the manure almost immediately under the plants. At any rate should a quarter of the garden be devoted to them and just manured broadcast, the same result probably would not be produced from the sowings as if the ground was very well prepared immediately near for the plant to draw nourishment therefrom. A neighbour who has stiff clay for Peas generally throws out a trench, puts the manure in this, covers over, and then sows, thereby insuring good crops. This plan, however, it might be stated, is not the general way of sowing to secure good crops of Peas, which is the first of garden vegetables. In the case of Peas that require to be sown wide between the rows, is there not often a great loss experienced by not having the manure or nourishment for the plants kept within their reach? *R. M.*

Vanda tricolor sporting.—I herewith send for your inspection two spikes from the same plant of Vanda tricolor, Dalkeith variety. You will observe a remarkable difference in the colour of the flowers; both spikes opened at the same time, and the difference in colour was seen from the first. Never having seen or heard of such a freak in Vanda flowering, I should like to know if any of your numerous readers ever saw such a sport, and if you can assign a cause for such difference in colour. Mr. B. S. Williams saw the plant here, and said he had never seen anything like it before. *Alex. Paterson, M.D., Fernfield, Bridge of Allan, Oct. 7.* [In the "sport" the ovary was shorter than in the type (2 inches), the greatest transverse diameter of the flower 2 inches, instead of 2½ inches, and so in proportion. The ground-colour of the sepals and lateral petals was pale yellowish green, instead of cream-coloured, the spots a dull brown, instead of the rich ruddy brown of the type, the lip pale lilac, instead of deep rich red violet, and the keels of the lip more prominent. In addition, the flowers of the sport were almost destitute of fragrance, while those of the type were very sweet. EDS.]

Pansies: Johnny-jump-ups.—In answer to "H.," p. 434, I should think there is no doubt that the American name of "Johnny-jump-up" for the Pansy is only the New World form of the Old World "Jump-up-and-kiss-me." *H. N. Ellacombe, Bitton, Oct. 8.*

Clay's Fertiliser.—I have used Clay's Fertiliser extensively for three years, and having used Standen's manure for eleven years, and tried Amies', I find Clay's is the best and cheapest. For plants already potted I use a teaspoonful upon a 48-size pot, sprinkled evenly on the surface and watered in. Many of our principal growers for market are using it with the most successful results. I have 6000 Cinerarias and Pelargoniums potted with it. I mix half a hundredweight with one yard of loam. I think Mr. Clay should advertise it extensively, as every gentleman's gardener should have an opportunity of using it, as it doubles the weight of vegetable crops. *Wm. Wiggins, Waverley Nursery, Folkestone.*

A Second Crop of Plums.—I send you a sample of Plums, which I am now gathering, being the second crop this season. The trees were in blossom and setting their fruit when I gathered the first crop, which was not a large one, although the fruit was good; there is a larger crop now, but not so fine. Those I send are an average sample: is it not a rather unusual occurrence? [Yes.] *H. Berwick, Fortfield Nursery, Sidmouth.*

A Fine Magnolia.—Old Brompton, Chelsea, and Hammersmith, were at one time—and are in a great measure now—rich in horticultural associations; but the railways and the builders are leaving but little of the old places or the old trees. Here and there, however, we find mementos of the past in dwelling-house and garden. Such still stand in Old Brompton. The cottage is called Clairville, and against the front is a veritable Magnolia tree. This specimen had doubtless been originally trained against the face of the dwelling, but in time it burst the trammels of list and nail, and now stands alone, presenting a stem 4 or 5 inches in diameter—a magnificent evergreen tree, and throwing its shadow over the roof of the house, a screen from the heat of summer's scorching sun, and a protection from the cold winter winds. *T. S. J.*

Sutton's Magnum Bonum Potato.—The malformation of shape which "R. C. E." mentions as having characterised his stock of this excellent late Potato is, I believe, entirely attributable to its having had its growth above and consequent development of tuber below arrested prematurely this year by the early action of the fungus, the growth having been

checked at least six weeks earlier than was the case last year. In spite of this however the produce is remarkably sound. Unlike true round Potatoes which as a rule retain their shape and form from the first to the fullest expansion, some of these long kinds, of which Magnum Bonum is one, seldom display their true long kidney-shaped outline until the full growth is completed, and tubers that were ungainly in August would, if the growth could have been completed at Michaelmas, have been of excellent proportions. Magnum Bonum is one of the most robust and latest ripening of Potatos, and in ordinary seasons is not ripe for lifting until the end of September or even later, therefore to the full completion of the crop the healthy state of the plant for the last month is of the first consequence. I think it right to add that about sixty dishes of this Potato were shown at the Crystal Palace, all of excellent form, and I heard no complaints from the numerous growers who staged it. *Dean, Bedfont.*

Fuchsia Venus Victrix.—There was a plant of this Fuchsia three or four years old, in the garden of Colonel Thomas Austen, Kippington, Sevenoaks, in 1847. I believe Dr. Jephson was the next of this class which was sent out, and this some time before those "Pater" mentions; but in this I may be wrong. Among dark varieties, the most elegant we then had was one named formosa elegans, a very good one both as regards habit of growth and blooming. *Samuel Garland, Castle Street, Salisbury.*

— When I was foreman in a gentleman's garden in Wales there came a plant of this Fuchsia from a London nursery. I went to live at that place in March, 1841, and was there two years. I think it would be in 1842 that the plant came, how long it had been out I cannot just remember, but I think not long. Before that I remember Dr. Jephson but cannot call to mind where he made his appearance, but I think some years after the Venus Victrix. There were many other light sorts before Venus de Medici, viz., Duchess of Sutherland, One in the Ring, Purity, and many more. *J. M.*

— Like your correspondent "Pater" I was a great lover of these, and grew a large collection twenty-five or twenty-six years ago—I had nearly or quite seventy distinct species and varieties. The Venus Victrix was in existence but I cannot say how long before, for the first time I saw it was in my neighbour's window, and as he was not a likely person to procure it when first sent out it is very possible its age is a few years more than I have named. I was more interested in the different species, as I am at the present time. I afterwards procured the Venus Victrix, and soon after I gave up the culture of the Fuchsia, except a few varieties, which I should now like to procure again. There was a very interesting little one, named Souvenir de la Reine, which is now no doubt lost to cultivation like many of the others then existing. I consider the different species the grandest of all. *J. S. Corderoy, Blackheath.*

— This Fuchsia was raised by Mr. J. Gulliver, gr. to the Rev. S. Marriott, of Horsmonden, Sussex, and it was purchased from him by Mr. Cripps, nurseryman, of Tunbridge Wells, who advertised it for the first time in the first column of the front page of the *Gardeners' Chronicle* for March 5, 1842, and sent it out in May of the same year, at one guinea each. It was a chance seedling from Fuchsia gracilis. I need not say that it was the first white Fuchsia known; but I do say that this is all perfectly true, and that it settles all controversy on this subject. *J. Rust, Leeds Castle.*

Paraffin as an Insecticide.—There is no mistake that paraffin, if applied as recommended by Mr. Knight, and confirmed by Mr. Rust, is instant death to the mealy-bug without (in my case) injuring in the least tho young foliage of Eucharis, or even the expanded flowers; but it requires a very handy man to do it properly, as the paraffin will float on the surface of the water, and such a small quantity a (a wineglass to four gallons) may easily be lost by clinging to the syringe or can, or be drawn up by the first syringe pull. I would recommend your correspondent, who has not been successful, to try again, and mix with soft water, ordinary syringing water — one sharp squirt into the mixture, holding the syringe a little distance from the can, drawing instantly another syringeful, and squirting it on the plants, but taking care not to draw it from the surface, but thrust the syringe well into the mixture. If there is the slightest delay either in filling the syringe or squirting on the plants the paraffin separates and a failure follows; but if properly done success is sure, and the mealy-bug instantly turns brown. *Thos. Keetley, The Gardens, Dudley Abbey.*

— Thanks to Mr. Rust for giving us his experience of this very simple remedy. After reading his letter I put it to a practical test. I had a specimen plant of Dipladenia, with a good stock of mealy-bug on it, although it has been frequently cleansed with brush and sponge, taking three hours each time to do it; yet in a few days after there would be another crop, and my man said, "better destroy the plant, we shall never keep it clean." I did not want to do this as it is very showy and will be for another month or more; but I thought I would kill or cure, and put four gallons of soft water into a large open vessel and one wineglassful of paraffin, then my man held the plant over the vessel, the pot resting on a box sideways, and I thoroughly syringed it, turning it round so as to wet every part, the tender shoots and flowers being in the water. I certainly thought it would kill the flower-buds, but my object being to cleanse the plant I thought I would sacrifice the flowers. To my surprise, however, they are looking fresh and beautiful. But what about the bug? I looked in vain to find one alive: when the mixture touched them it seemed to burn them up as if they had been roasted. And I consider we cleansed the plant more effectually in ten minutes than we could have done in six hours in any other way, without injury to the plant. *O. Orpet, Cirencester.*

Cupressus Lawsoniana. — Perhaps no plant which has been introduced within the last thirty years is so useful for furnishing gardens of all sizes as this. When in a young state it is very ornamental, and it retains the same character, it might be said to be even improved, when it reaches the height of between 20 and 30 feet. This Cupressus when grown from seed varies very much in the appearance of different plants, as the eye detects in glancing along a row of them. On this being done it will probably be observed that scarcely two plants are alike—some varying more in the density of the branchlets, and others characterised by a much more graceful habit of growth. Where these notes are penned there are about a hundred plants of this Cupressus about 20 feet high and over. They are well furnished specimens, which were planted about twenty years ago. From such as these a general estimate of the value of this plant may be formed. For avenue planting they are at once more graceful and beautiful, if this appellation will be allowed, than the long rows of Irish Yews in the Elvaston gardens, though no doubt they were planted before this was introduced. For villa garden work fine boundary furnishing could be made of this, where the breadth of ground to plant is limited. Well-furnished specimens over 20 feet in height do not exceed 6 feet in diameter at the base. If this space be compared with what would be required for a Pinus austriaca of the same height a decided difference is observable. By planting this Cupressus closely a fine block could be formed, or if planted alternately in two rows, a fine appearance could also be brought about that would always look well, and would require but little attention in its maintenance. In the outskirts of London, where under-shrubs are difficult to keep under large trees, this has been found useful. As single plants on lawns, it need scarcely be remarked how useful they are. When planted in rows this Cupressus requires much less attention to keep in order than do Irish Yews; still some of the forms have a great tendency to grow up with a number of leaders, some of which after storms of high wind or snow are apt to get out of order, which shows the desirability of keeping the plants to one stem. It is much better to remove the leaders when in a young state than afterwards. This Cupressus will sometimes reproduce itself freely without any artificial aid in this country, as numerous young plants have grown near the bases of the parent ones. This year it might be noted that the crop of cones is very limited indeed as compared with last year, when there were a good many plants where this year not one is to be seen. *Robert Mackellar.*

The Villa Garden.

FRUIT GARDEN: ROOT-PRUNING.—There are many Villa gardeners who having but a small space of ground in which to carry on their operations, have endeavoured to make the most of it, and with this aim in view have planted a few Apple, Pear, and Plum trees. They had heard of pyramid and bush trees that might be kept in bounds by a strict course of pinching back and stopping—toy trees with a far larger desire to bear fruit than to produce wood; trees that had been so correctly trained in the nurseries to submit themselves to a kind of moral restraint that they had almost ceased to be trees in their willingness to become responsible agents, and were so zealous in his new character as to be prepared to bear large crops of splendid fruit year after year. Who would not desire to possess such tractable subjects in the vegetable world? Villa gardeners bought these trees and planted them in strong soils, and were not a little surprised that they grew amazingly, but fruit was looked for in vain. Of wood there was plenty, enough and to spare. It cannot be said the right sorts were not bought—the buyers selected the very ones named in the books; the fact was, Nature could not and would not be bound down by a series of regulations foreign to her methods of working out her own plans, and the trees grew vigorously because the roots struck deep into the soil, and pumping up life-blood into the branches found relief in leaves and shoots. Somehow, toy fruit gardens have faded away into the past, and become numbered with the things that once were.

Bush and pyramid fruit trees have grown during the past summer with a vigorous extension that would have an outcome, and to an extent truly appalling to Villa gardeners who had thought to keep them within a circumscribed space. What in winter were thought to be fruit-spurs lengthened out into growths like fishing-rods, the hope of fruit was substantially realised in a superfluity of wood, which botanists tell us is only fruit in a less agreeable form.

"What shall I do with these long growths?" said a gardening friend the other day. Our reply was, in the case of trees like Cox's Orange Pippin, Lord Suffield, and others that put out main shoots bristling with lateral growths, cut the laterals away, and thin out the main shoots where absolutely necessary; but do not cut them back to any extent. We further advised our friend not to look for the production of fruit by hacking away at the trees above, but to restricting the growth by means of root-pruning. This season, by reason of the weather being so favourable to growth, trees not so favoured previously have grown into good shapes if they have been looked after a little. This is something gained, for a symmetrical tree is always more agreeable to the sight than an irregular and ugly one. A good framework being assured, let the Villa gardener root-prune all the most vigorous growers.

But how to root-prune is an important matter to those who are in the alphabet of gardening practice. Simply stated, the operator has to endeavour to sever in the soil some of the main tap-roots, which, having struck down deeply into it, are the main arteries through which passes into the tree the life-bloom that produces growth. One side of the tree only should be operated on at a time. Let the Villa gardener commence to dig out a trench a half yard or so away from the main stems, and sparing all the fibrous roots near the surface seek for what we have termed the tap-roots, and sever them as near the surface as possible. He must be careful not to do too much; and the extent to which he root-prunes should be regulated by the vigour of the tree, and the rich, stimulating character of the soil. Having done this let him return the soil, laying out the fibry roots, carefully covering them, and treading all firmly down. In a year or two the other side of the tree can be served in a like manner, if the degree of fruitfulness desired has not been attained.

Apple trees do not, as a rule, make such strong tap-root growths as the Pear; the latter on a free stock puts forth many tap-roots, and though some have said that the Quince stock, on which pyramid Pears are generally worked, does not induce a growth of tap-roots, the late Mr. Thomas Rivers used to recommend the periodical root-pruning of Pears on this stock. Any root-pruning of Plum trees should be done rather more sparingly than in the case of Pears and Apples.

When is the best time to root-prune? is a piece of information the Villa gardener is sure to ask for. Here we can put forward such a high authority as the late Dr. Lindley, who in his standard work on *The Theory of Horticulture*, remarks:—"If performed at all, root-pruning should take place in the autumn: for at that time the roots, like the other parts of a plant, are comparatively empty of fluid: but if deferred till the spring, then the roots are all distended with fluid, which has been collected in them during winter, and every part taken away carries with it a portion of that nurture which the plant has been laying up as the store upon which to commence its renewed growth." Another passage bearing on this matter is to the following purpose:—"Its effect (the act of removing a portion of a root) is proportionately to cut off the supply of food, and thus to arrest the rapid growth of the branches: and the connection between this and the production of fruit has already been explained."

November is a good month to root-prune, or even earlier. Advantage should be taken of dry, mild weather; not a time of frost and cold. The earlier it

is done, the more time is allowed for the fibrous roots to lay hold on the soil, and this is a matter of some importance when, as sometimes happens, March and April are dry warm months.

Reports of Societies.

The Hereford Fungus Meeting.—The Woolhope Club held its tenth annual fungus meeting during the unpleasantly fine and sunny week ending October 5—Monday, September 30, being appointed for the arrival at Hereford of the greater Mycophagi from all parts of England. Besides the ordinary members of the Club the following gentlemen took part in the proceedings, viz., Messrs. Bull, Perceval, Vize, Cooke, Phillips, Renny, Bicknell, Plowright, Morris, Broome, Du Port, Lees, Davies, Howse, Walker, and the writer, the members culminating in numbers at the Club dinner to more than half a hundred.

Owing to the irregularities of the trains the arrival at Hereford often entails a long day's journey: for instance, the Rev. Mr. J. M. Du Port (honorary chaplain to the Club) had to start for London from Norfolk at half-past 6 o'clock in the morning, and this was preferable to going across the country, as the trains are always late, and belonging, as they do, to rival companies, the passengers are inconvenienced to the utmost extent. The London men got on very well till they got to Gloucester, but Black Monday being the annual Gloucester "Barton Mop" fair, the station was crowded (especially at night) by thousands of "roughs." First and second class tickets afforded no protection to quiet and decorous passengers, for the drinking, spitting, and tobacco-smoking "Barton Mops" crowded into all classes alike, to the horror and almost suffocation of women and children and decent people. Of course the trains were very late.

Mr. Perceval brought with him two healthy thick and shivering lumps of "dry-rot" in splendid fruit, as a special gift to the gentleman at whose house he was invited to stop; but, alas! for the apathy of some fungologists, Mr. Perceval's host did not seem to appreciate the gift; indeed, he actually asked it the specimens were infectious, and seemed glad when the spore-discharging, quivering lumps were out of his house. Mr. Perceval then most properly made a gift of these two prime specimens to Dr. Bull, who received them with true fungus-feeling, loving care and many thanks; after a day or two these objects occupied a post of honour on the new Museum tables.

Tuesday, October 1, was the first excursion day, when it was proposed to ransack the Doward Hills and Wye side. The honorary chaplain with his vasculum, and the historian with his tripod, started by an earlier train for Ross, to see the Wye from the Ross "Prospect" and the Elm trees growing inside Ross church. On reaching the town the town-crier was noticed in the streets ringing a loud bell, and informing the inhabitants that a Mr. Stotters had lost a knife with four blades. The Elm trees (or rather large saplings), fig. 85, inside the church at Ross are very curious; they are said to grow near to and to overshadow the pew in which the "Man of Ross" sat. The "Man of Ross" is made famous in the verses of Pope. The saplings are very tall, and about eighty years old: they are probably offshoots from the root of an Elm (now cut down) which once grew outside the church. Mr John Kyrle, the "Man of Ross," a great benefactor to the town, and altogether an admirable man, was buried in the church in 1724, at the age of ninety. On the church walls, tower and steeple, there grow Parietaria officinalis, Antirrhinum majus, Cheiranthus Cheiri, Asplenium Ruta-muraria, and other plants.

The two honorary officers of the Society before mentioned then met the rest of the party at the Ross Station for Symonds Yat, where a boat was in readiness to drop the whole party a mile down the deep and swift-flowing river. The boat was large, but it had more than its full complement of passengers, so that once or twice there seemed a considerable chance of the whole party getting capsised into the river. On the return to Hereford one ancient veteran (who did not accompany the party) had the temerity to say he wished the boat *had* been capsised, because the account of it would then have read so well in the *Gardeners' Chronicle*. Whatever might have been the fate of the chaplain, the honorary historian would not have gone down, for swimming has long been one of his principal "accomplishments." The Doward Hills are uncommonly rich in flowering plants and Ferns. Amongst plants seen may be mentioned Atropa Belladonna, Dipsacus pilosus, Rubia peregrina (on which a new Sphærella was discovered), Cystopteris fragilis, Ceterach officinarum, Polypodium calcareum, Asplenium Trichomanes, Scolopendrium vulgare, and a large number of other plants of note, including many stray plants of Buckwheat. Amongst the more uncommon fungi found were the rare, beautiful and delicious Lactarius volemum; the first specimens being found by Mrs. Bicknell. L. torminosus and L. deliciosus were also found: the first is dangerously poisonous, and the latter sweet and edible; as they grow (and not unfrequently) together the sharpest fungological eye cannot detect the slightest shade of difference either in size, form, or colour between one and the other. Is this "mimicry?" Does "deliciosus" protect itself by taking the form, habit, and colour of "torminosus?" No doubt some protection is afforded to "deliciosus," for some half-hearted would-be fungus-eaters are afraid of getting a stray "torminosus" into the pot. Agaricus

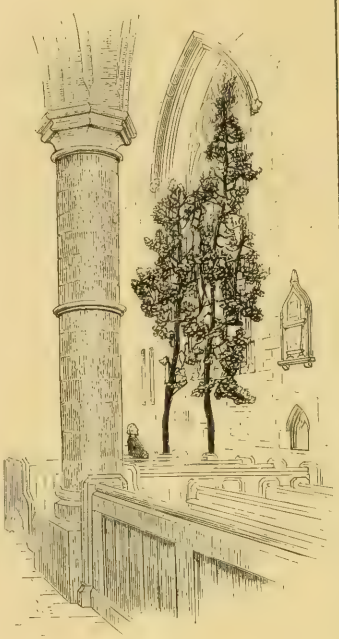


Fig. 85.—Elm saplings in Ross church.

incanus was found, with its powerful smell of mice, the large edible A. strobiliformis, the beautiful yellow-topped A. sejunctus, the cobalt-blue A. euchrous, the black A. fumosus, the handsome but bitter pine-apple-scented A. acerbus, the chestnut-tinted A. flavo-brunneus, A. velutinus (often mistaken for A. lacry-mabundus, and both for the true Mushroom), the rare and extremely beautiful Agaricus chrysophæus, and

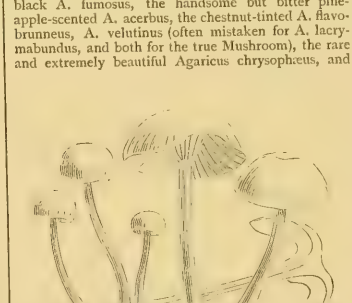


Fig. 86.—Mr. Berkeley's new fungus, Hygrophorus Wynnii.

many other common Agarics "too numerous to mention." Nyctalis asterophora, a plant rarely seen by Woolhopeans, was met with on the Doward Hills in some abundance, as was the very rare Thelephora Sowerbei. The "Hercules Club" fungus, Clavaria pistillaria, was found, together with the smaller C. argillacea, and some immense specimens of the black but edible Craterellus cornucopioides.

On the Doward Hills there is (300 feet above the Wye) a hyæna den. The chaplain and historian were first at this den, which has afforded to the Rev. W. S. Symonds a rich harvest of old bones belonging to the cave lion, the cave bear, the hyæna, the mammoth, the gigantic Irish deer, the long-haired rhinoceros, the bison, and the fossil horse. Chert and silurian rock implements made by the hand of man, cores or nuelei and flakes and chips of chert were also found by Mr. Symonds near the entrance of the cave. The hill-top is termed "King Arthur's Hall," and on the summit there is an ancient camp: the hyæna den is known as "King Arthur's Cave," this has been considerably but not completely explored, and ther are other caves in the district which have not yet been explored or excavated at all. Dr. Bull entertained a considerable number of the party at dinner in the evening, where one of the invited guests did not put in an appearance till dinner was nearly over. It was the man who wished the boat had been upset, and he did not come to dinner, he said, because he had himself fallen either into "a reverie" or into "the river-y," no one could exactly make out which.

On Wednesday, October 2, the party went in sections, the larger to the fruitful woods of Dinmore, the smaller to the castle and ancient Norman church of Kilpeck and the churches and river gravels of Lugwardine, Hagley, and Wilcroft. The river gravels were visited with a view towards the possible discovery of relics similar in nature to the antiquities from the caves, but nothing whatever was found. The churches and churchyards were of interest, Kilpeck being remarkable as one of the best and purest Norman structures in this country. When the party visited the church "harvest thanksgivings" had been going on, and the fine little Norman interior with its pure art-work was defaced all over by trashy "decorations" in the glaring "village-young-lady" style of art. How strange it is that in the midst of the best Norman brains the modern production is so seldom better than paste. "Harvest decorations" are nearly as mad as "protective mimicry." A few ears of corn may be very well in a church, but why stars and ribbons and a greengrocer's shop? Wheat may be right, but how about the Muscats of Alexandria, the Black Hamburghs, the Peaches, the Figs, the hot-house fruits and flowers? "Harvest thanksgiving" is now little better than a revival of the heathen worship of Pomona, of Flora and Ceres, denuded of the classic feeling of ancient times, and replaced by trashy symbols in coloured tissue-paper. What a change it is to leave the glaring, false, and ugly "decorations" in fiery scarlet and blue, and walk out of the church into the often ill-kept churchyard with its worse than heathen neglect. This common neglect of the last resting-place of the dead is not only a standing satire on the Christian religion but on human affection; the satire being more searching because it originates with a section of the "thanksgivers," the "decorators," and the tomb-inscribers themselves.

After dinner there was a meeting at the Museum from 8 to 10 P.M., to set out the Doward Hill and Dinmore specimens, and to arrange, name, and discuss the species exhibited. There were no Apples and Pears this year, and in one way this was a good thing, as the delicate aroma given off by certain fungi was not overpowered by the gravid smell given out by Louise Bonne and Marie Louise Pears and Gloria Mundi Apples. The Rev. W. Elliot, the secretary of the Carodoc Club, sent a good collection of one very handsome (and elsewhere rare) species in Hygrophorus calyptræformis; an anonymous donor (supposed to be the chaplain) sent a cork out of a port-wine bottle covered with the well-known cellar-fungus, Zasmidium cellare. The London publicans get up an imitation of this fungus, for if one goes to a tavern to get a bottle of fine old 1*s.* 3*d.* "Comet" port, the tavern-keeper commonly produces a bottle covered with the "false Zasmidium," which is no other than a mixture of dirty old spider-webs, soot, and sawdust—this variety, we may remark, never produces spores. On the Museum table were the rare Polyporus intybaceus, the more common Oak, P. dryadeus, a doubtful P. borealis, and many other plants belonging to the genus Polyporus. The sweet-scented Lactarius glyciosmus, the soap-scented Agaricus saponaceus, A. fragrans, with an odour like Melilot; A. radicosus, smelling like a linseed-meal poultice; Hygrophorus cossus, with the potent perfume of the he-goat; and the black H. metapodius. One of the best botanical species was the red-topped Russula lepida. Peziza sucosa with its yellow juice; P. sinuosa with its purple juice; the green Geoglossum viride, Thelephora anthocephala and caryophyllea, the latter hardly so named because it is "clove-coloured," but rather because it is exactly the same in shape, with the flower of a large Dianthus. Amongst possibly new plants were Agaricus innocuus and Cortinarius arenatus.

Most of the commoner and better known species were represented by Wednesday evening, but one group of fungi puzzled all: it was a large composite mass of Agarics from a cellar with the exact odour of the true Mushroom, and it was authoritatively labelled Agaricus campestris, but the gills were very adnate (not free), and it had not the annulus of A. campestris: added to this the true Mushroom does not grow in a fasciculate manner. The probability is that the group belonged to a highly erratic growth of Agaricus lacry-

mabundus, but the plants did not wholly accord with this or any other species described by Fries. The uncommon Puff-ball, Lycoperdon saccatum, was on the table with Peziza macropus, P. aurantia, and the extraordinary prolific variety of P. cochleata described and illustrated by Mr. Berkeley in last year's *Gardeners' Chronicle*. Trichosperma chrysosperma was exhibited, and Russula nigricans and R. adusta were shown side by side.

Thursday was the Club day, when the lawns of Sutton Court and the woody recesses of Blackberry Hill close by were hunted over with remarkable success, for though the specimens of fungi were few in numbers, yet they were uncommonly good as species. The first piece of good fortune fell to Mr. Broome, for by a trench side he lighted on a choice and prolific piece of wet and greasy rotten rag, clearly "Ditch-deliver'd by a drab" (*Macbeth*, act iv., sc. i.). On this piece of (unsavoury—this in a whisper) cloth there was a splendid crop of Ascobolus carneus, which Mr. Broome lovingly placed in a small sandwich-box for proper security. Agaricus strangulatus was one of the first species found, next A. (Eccilia) atropunctus (which by the way we do not see in Dr. Cooke's new *Clavis*), then the variety lacmus of Hygrophorus subradiatus, the new A. innocuus once more, and Agaricus sulfureus with its strong smell of gas-water or carbolic acid. The Vegetable Beefsteak (Fistulina hepatica) was common on the Oaks, distilling and wasting its rich drops of inviting and luscious gravy on the unappreciative grass. The specimens were often tenderly examined by Dr. Bull, but he pronounced them, one and all, to be hardly "ripe enough" for the table; these "beefsteaks" are like some game, best when they are a little "high."

The edible Agaricus nebularis was fortunately very abundant, and a few specimens of Bull-eat-us (as some write it) edulis were lighted on. Of Truffles two were raked out by the rakers, probably a Tuber and Hymenogaster. The curious Agaricus cucumis with its strange smell of stale herrings (Cucumbers, according to Fries), and Thelephora fastidiosa with its horrid smell of a putrid carcase. Amongst specimens found worthy of note may be mentioned Cyphella galeata, the rich orange Peziza onotica, and the yellow and brown leporina and badia; Helvella elastica and lacunosa; Agaricus Candolleanus, unicolor, umbrosus, obscurus, dryinus, geophyllus, white and blue; the great black balls known as Hypoxylon concentricum, and hard black clubs known as Xylaria polymorpha, and an Irpex of uncertain name. Marasmius erythropus was found in many places. On the top of Blackberry Hill, from which there is a view of almost unsurpassed beauty, there is a large ditched camp, and a large section of the exploring party went over this position under the kind guidance of Richard Hereford, Esq., who explained the botany and geology of the entire district, pointed out a number of remarkable trees, and regaled the whole party with bread and cheese and excellent cider.

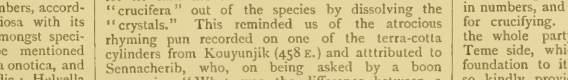
Before dinner the fungi were taken to the Museum and arranged: in the meantime Mr. Berkeley had kindly written a very pleasant letter on behalf of himself and Mrs. Lloyd Wynne from Coed Coch enclosing a few fungi of interest; these were three species of Hygrophorus, viz., the var. lacmus of H. subradiatus, the orange-topped H. turundus, not yet recorded from Hereford; and a new species of Hygrophorus named by Mr. Berkeley H. Wynniæ: this plant was immediately put under a glass case by Dr. Bull, lest it should be touched by profane and unfungological fingers. Herewith we append a figure of this species to show the form (fig. 86), Mr. Berkeley will in good time supply the characters, for it would be a mortal sin, never to be forgiven, for one person to dare to describe another person's fungus—for then, according to the laws of botany, the species would always bear the describer's name. We may venture to say that its colour is a beautiful pure semi-transparent lemon colour, with just a suggestion of green. By dinner-time a good number of the other species had been placed upon the table, but these were hardly worth enumeration as they belonged (with the exception of Gomphidius maculatus) to ordinary woodland species.

The Dinner.

The dinner went off as these dinners usually do: there was a difficulty in getting sufficient edible fungi for the banquet, so the worthy, learned and valuable Doctor who always presides (may he live for ever!) had to confine his attention to preparations of the truly delicious and succulent Hygrophorus pratensis, and the exquisite and highly pleasing Agaricus nebularis. Dr. Bull dispensed these savory and steaming viands with his own hands to the fifty-two diners, from bowls of rich fungus-soup. It really was a treat for all who understood physiognomy (as do all the Woolhopeans) to see the unmistakable external marks of internal gastronomic satisfaction suffuse the delighted faces of the recipients as they each consumed the precious and Elysian fungoid comestibles dispensed to them from the safe hands of the Doctor.

Mr. Thomas Howse and Mr. Cecil Perceval were elected Honorary Fellows of the Society, and then Dr. Bull powerfully reviewed the fungus work of the year, referring to several poisoning cases, and aptly illustrating his remarks by an account of a pauper who lost his life through eating too much pudding. Dr. Bull then read a telegram he had just received from Paris, directed to the officers and members of the Woolhope Club from Max Cornu, their last year's guest. The telegram was sent by M. Cornu and one or two other French fungologists, congratulating the Woolhope Club on the renewal of its work, and expressing pleasant remembrances of the meeting of last year. Mr. Plowright then referred in detail to the two recent poisoning cases at Hampton Court and Norfolk, the general opinion of the members being that the Hampton Court girls were poisoned by Agaricus fastibilis (it was growing everywhere at the time), and the Norfolk parties by Agaricus acutesquamosus. The Rev. Augustin Ley read, in conclusion, a valuable paper on the mosses of Herefordshire, after which Mr. Lees made a few remarks on mosses and molehills.

After dinner there was the usual *soirée* at the house of Mr. Thomas Cam, this gentleman, as usual, kindly throwing his house open to every Woolhopean interested in abstruse fungological matters. Here Dr. Cooke read a learned paper on the genus Corticium, followed by some remarks on Peziza crucifera, by Mr. Phillips: this species has recently been described and figured in the *Gardeners' Chronicle* by Mr. Phillips, and an attempt was made to extinguish the plant as a species by Dr. Cooke in your last week's number. The discussion at the *soirée* gave the outsiders a good insight into scientific sparring. Mr. Phillips skilfully put himself on his defence, and coolly and adroitly defended every vulnerable point of his "crucifera." Dr. Cooke (after declaring his undying friendship for Mr. Phillips) then made thrust after thrust, and crucified "crucifera." "It mustn't, it couldn't, it shouldn't be a species," said he. He cut the species in every direction, he hit it, he bit it, and then suddenly gave his assailant a foul and severe blow under the belt, for he said the first shower would wash all the "crucifera" out of the species by dissolving the "crystals." This reminded us of the atrocious rhyming pun recorded on one of the terra-cotta cylinders from Kouyunjik (458 B.) and atttributed to Sennacherib, who, on being asked by a boon companion "What was the difference between a winged human-headed bull cut in stone and a dead lion with his tongue cut out?" wittily replied:—



At this point Mr. C. B. Plowright came to the rescue of his friend Phillips, who was certainly badly winded, by saying that water does not readily dissolve crystals of oxalate of lime, and that "crucifera" was at any rate as good as hundreds of other species which suddenly jump into existence. Mr. Phillips, having recovered his breath, made a few more very skilful lunges, and both assailants agreed that each had had the best of it. Poor "crucifera" has no doubt lived peacefully for thousands of years, and now what a fight there is about his little crystals! Whilst this was going on the "honorary chaplain" was very properly describing the virtues of his '47 port and Yquem Sauternes to the writer. The Rev. J. E. Vize then made some remarks. It will be remembered that Mr. Vize is the famous author of Æcidium depauperans; he has now left the study of this horrid depauperised species, and studied an ally of a totally different nature; its name indicates its appearance, viz., Æcidium ornamentale. The former was a parasite on Violets, the latter now preys on the Acacia, and although the latter parasite may be very "ornamentale" to the eye of an ardent fungologist, it will never be "ornamentale" to any horticulturist. It is ornamental in the same way as a lady's face would be ornamental in the height of a bad attack of small-pox. The author of Peronosporites antiquorum W. Sm., was then asked to say something, but he declined. He wants to live in peace. So for once that half-dozen young slashers and professors who are always ready to worry and tear and declare everything some one else sees or says to be "pure imagination," were disappointed. Antiquorum intends to watch the fights of others in future, and keep his own skin whole if possible: it is only to be hoped that both sides won't come down upon him over poor "crucifera."

The Last Day.

Friday was the last of the fungus-gatherings, and Ludlow and Downton Castle grounds were appointed for the day's exploration. The fungus-eaters left Hereford by rail at 9.15 A.M., and such was the hurry to be off to time that one gentleman went off without his boots, and did not perceive that he was running in his thin slippers till he had nearly reached the railway station, he then ran rapidly back to his rooms for his boots, and caught the train (they are never punctual) after all. One of the Messrs. Fortey accompanied the party by train from Hereford, and the other Mr. Fortey met the train on its arrival at Ludlow, with Mr. George Cocking, of Teme Side, Miss Lewis (a new accession to the fungological ranks), and one or two others. Without delay the party drove at once to Downton Castle grounds, and began work in earnest. There was a profuse growth of Strobilomyces strobilaceus in every direction, the oldest Woolhopean could remember nothing like it before—young, old, and middle-aged specimens were dotted all over the grassy places and banks in profusion. Clavaria botrytis, which is as handsome as rare, was found in good condition, as well as the beautiful C. amethystina. Paxillus pannoides and Agaricus heteroclitus, both rarities, were found. For the first time during the present foray Agaricus resplendens was met with, and now in abundance, and the curious and beautiful plant referred last year without doubt to A. Russula. Mr. Howse told us that the plant was not Agaricus Russula but Hygrophorus erubescens, and that it was "settled" last year in France. It is always pleasant to hear of a fungological matter being "settled," but it is sometimes well to know who has "settled" it. I was once told in Wales that the nature and meaning of cromlechs had been "quite settled," but when I afterwards found that it was a linendraper, who also did a little printing and sold cakes in a neighbouring town, who had "settled" the job, I lost some faith in the settlement; but perhaps there is another case of "protective mimicry" in these two fungi. Cortinarius cinnamomeus in its two varieties was found, as well as the magnificent C. cinnabarinus and Russula cyanoxantha.

During this, the last day, many of the species found on former days were again met with, and an equally large number of small (ignoble, according to Fries) species. Of these I have kept no list. I respect (?) the vast army of microscopic entities and nonentities; their name is legion—they have no end and no beginning, and they are always increasing in numbers, and possibly nine-tenths would be better for crucifying. As usual Messrs. Fortey fortified the whole party in the "Moss House" by the Teme side, which house literally groaned from its foundation to its roof with the load of good things so kindly provided by these two truly good and valuable gentlemen and fungologists. After emptying all the Messrs. Fortey's hampers, boxes, and bottles, the fungologists were like giants refreshed, and returned towards Downton Castle by the other side of the river. Aspidium angulare, Cystopteris fragilis and dentata and Scolopendrium vulgare grow by the stony Teme-side, and Neottia nidus avis in the woods.

On the return drive the party took Oakley Park, the residence of Lady Mary Windsor, on the way, and paid a visit to the group of so-called "Druid Oaks." These are mentioned as large trees in *Domesday Book*, A.D. 1086. Heard from several persons that Paterson's Victoria Potato is badly diseased this year: this means a good deal, for probably no Potato has hitherto so well resisted the disease as Paterson's Victoria. Then, as if never tired of doing enough for the fungologists, the hospitable Messrs. Fortey, of Ludlow, took the whole party to their house, where hot tea and coffee and everything else one can think of except fungi (and this was a curious omission) so loaded the tables that it was simply impossible to see the cloth; and as the dusk of evening approached it gradually became even difficult to see one another. Thus pleasantly, as guest after guest shook hands and heartily thanked the good-hearted Ludlow hosts, the tenth annual fungus-foray of the Woodhope Club was brought to an end. *W. G. Smith.*

Florists' Flowers.

The Hollyhock.—This is the most stately of flowers that has been improved by the aid of the florist. It is easily cultivated, and generally commands admiration for its striking appearance in gardens, especially when placed at a distance from the observer and as a background to other flowers. Like many other flowers that have been brought to a high state of perfection, the Hollyhock owes much to one or two individuals not known to fame in any other walk of life. Mr. Charles Baron, a shoemaker, of Walden, was one of those village worthies who had a passion for a certain flower, and by careful selection and crossing of varieties he did for the Hollyhock what Richard Headly and George Lightbody did for the Auricula. But it was when men of large capital and enterprise, like Messrs. Paul of Cheshunt, Chater of Saffron Walden, and Downie & Laird of Edinburgh, undertook the raising of new varieties from crossing and selection that the greatest advance was made.

At some time or other in the history of every flower that has been long in cultivation, a period has come when the public, or at least the

flower-loving public, have displayed an amount of enthusiasm about it, perhaps more than the flower really deserved — the passion for the flower has gone on to a certain height, and then the declension has been more or less rapid, according to the nature or fervour of the enthusiasm. It has been so with the Hollyhock: it does not occupy that place in our esteem which its merits deserve, and perhaps this is the natural result of its once occupying a higher position than it fairly deserved on its own merits. I am not prepared dogmatically to say so, for I have always admired the Hollyhock, and I think it fairly deserves a high position in certain gardens, public and private, where it at present does not even find a place.

About a quarter of a century ago almost every garden of any pretensions boasted of its collection of Hollyhocks, and exhibitions arranged specially for them were held in the capital cities of England, Scotland, and Ireland, besides many provincial towns. It is scarcely necessary to ask why this state of things was not continued. There is a fashion in flowers as there is in dress, and the idol of to-day stands a chance of being trampled in the dust to-morrow. One evident reason of the Hollyhock not being grown in some districts is the decimation of the plants by the destructive fungus, named Puccinia malvacearum. This disease is peculiarly virulent in dry seasons, the fungus spreads over the leaves of the plants, and quite destroys the softer parts, leaving the naked venation rustling in the wind, a melancholy spectacle. A strong solution of soft soap and sulphur, or Gishurst Compound, has been known to check it; but sometimes the cure is as bad as the disease. The most radical cure is to destroy the plants, and begin again with a healthy stock, taking care that the nidus of the disease is not left in the garden or in the frames where the plants are wintered.

In starting to grow Hollyhocks, it is just as well to see that the plants are healthy. If they are purchased in the autumn they must be wintered in cold frames, the pots plunged in cocoa-nut fibre refuse. In January or February the plants must be repotted; if they are strong 6-inch pots must be used, the compost being turfy loam, with a fourth part of rotted manure added to it and a little sand. The ground should be prepared for the plants in the autumn by trenching it 2 or even 3 feet deep, and adding plenty of rich manure in layers from the bottom to within 6 inches of the surface. During fine weather the surface should be forked over in the winter months, and at intervals of about a month; this is especially necessary in clay soils, and it is in such soils when well worked that the Hollyhock succeeds best. The plants should be planted out about the end of April, or earlier if the weather is favourable. I drive into the ground the sticks that are intended to support the plants; they should be strong and stand 6 feet out of the ground, and 18 inches into it: this plan is preferable to placing small sticks to the plants at first and placing the permanent sticks to them when the spikes are considerably advanced. When the plants are put out in the borders I like to place some good rich loam round the roots, into which they can work at once. As the spikes advance in growth they must be fastened to the sticks. In dry weather water must be copiously supplied to the roots and a mulching of rotted manure will keep it from evaporating. One spike only should be grown to a plant if they are intended for exhibition, and all the side growths must be removed. Some of the leaves on these lateral growths have leaf-buds at their axils: these must be used to make eyes to produce plants; about an inch or more of stalk is left with each eye; the leaf and a portion of the leaf-stalks are removed, the eyes are then inserted singly in thumb-pots, with a portion of the leaf-stalk and the top end of the bit of stalk showing above ground. Place the pots in a frame in a gentle bottom-heat, but do not apply too much water else the eyes will rot. In a week or less the shoot will appear above-ground, roots will speedily be formed, and the plant must be potted into large 60's when the thumbs are well filled with roots.

If the spikes are to be exhibited it is best to cut the top off, and the skilful cultivator will manage it so that the flowers just under the cut will be expanded on the day of the show. If single blooms are to be exhibited only it is still desirable to cut off the tops of the spike to increase their size. It is not always desirable to reduce the number of spikes on a plant to one, nor is it always best to cut off the side growths. When the plants are put out on wide borders with Dahlias and other tall growing plants, and the object is to have a long continuance of flowers or to fill up a certain space, then by all means allow the plants to grow freely, and merely remove decaying flowers as they go off.

Seed should be saved from the best flowers only, and it is very desirable that they should be crossed with other good sorts to obtain new varieties. I have saved seeds from the best sorts in cultivation without crossing the flowers, and out of many dozens fifty per cent. of them were neither better nor worse than the parent, and there was scarcely any alteration in the colour of any of them. Out of fifty plants grown from seeds judiciously crossed there is more chance of getting a new and good flower than there is from five hundred where no artificial impregnation has taken place. The seeds may be sown as soon as they are gathered and dried, but I prefer to keep them until the end of May the following year; and the plants should be planted where they are to flower about the end of August. They will make a grand display the following season. The stalks should be cut off 4 or 6 inches above the surface of the ground as soon as the flowering period is over. The more choice sorts should be potted into 7 or 8-inch pots, and the others will be safe if they are planted out in a cold frame.

Although the Hollyhock is quite hardy in this country, it is absolutely necessary to treat the plants as described to obtain cuttings early in the year following; early rooted spring cuttings are quite indispensable to the exhibitor. These will come in for the late shows, and the plants propagated the previous autumn from eyes will flower quite a month earlier. In the South such plants will be at their best in an ordinary season about the first or second week in August, some earlier and some later, as autumn-struck cuttings are more erratic in their flowering than plants produced from cuttings or root grafts in the spring. It must be understood that the Hollyhock is a perennial, and plants will continue to produce spikes from the same rootstock and without removal for many years, but they will not be of anything like such good quality as those from plants managed as detailed above. It may as well be stated that some of the very finest double flowers in the South will not open kindly north of the Tweed, but flowers that succeed well in Scotland may be safely trusted to do in any part of Britain.

I am indebted to my cousin, Mr. Andrew Kerr, of Messrs. Downie & Laird's nursery, Edinburgh, for a list of the flowers that succeed best in Scotland, and which are at the same time of high-class quality. The twelve best are marked with a *. Andrew Goodfellow, *Countess of Kellie, *David Henderson, *David Marshall, *Frank Gibb Dougal, *George Johnstone, *Gem of Yellows Improved, James Neilson, James Whitton, *John Gair, John Tweedie, Joseph Norval, Lady Hume Campbell, Lord Clifden, *Mrs. T. H. Douglas, *Mrs. Downie Improved, *Mrs. Bruce B. Tod, *Model, Octoroon, *Primrose Gem, War Eagle, and William Fowler. The above, though the best in cultivation, vary in price from 1*s.* 6*d.* to 2*s.* 6*d.* each. *J. Douglas.*

MARSHALL P. WILDER.

We have often had occasion to speak of this gentleman's services to horticulture and pomology, and of his eloquent advocacy of their claims. We are glad to see that his friends in Boston, United States, have honoured themselves in honouring this venerable labourer in the field of horticulture. The fiftieth annual dinner of the Massachusetts Horticultural Society, and the eightieth anniversary of the birth of Colonel Wilder (which happened to fall within a few days one of the other), were made the occasion for a complimentary banquet. At the head of the hall was displayed the familiar painting depicting the scene at the opening of the United States Agricultural Society's exhibition on the South End Fair Grounds, in October, 1855, the central figure in which is Colonel Wilder mounted on a white horse. At the left of the picture stood two life-size statues, executed in wood by Herbert Gleason, and loaned by their owner, William Emerson Baker, of Wellesley. They represent Hon. Marshall P. Wilder standing with uncovered head, while Pomona, the goddess of fruits, is in the act of crowning him with a wreath of Laurel. Ex-Alderman Breck presided, and Colonel Wilder was seated on his right. Beside the plate of each guest was placed an elegantly executed likeness of the guest of the evening, bearing his autograph, and to which was attached the *ménu*. Colonel Wilder's speech in acknowledging the compliment paid him contains a good deal of matter which is interesting from an historical point of view, on which account we make the following extracts:—

"When we reflect upon our past labours our thoughts naturally revert to the Massachusetts Horticultural Society, whose fiftieth annual exhibition has just closed. Well do I remember its first exhibition in the old Exchange Coffee-house in this city. Well do I remember the scene, with its two small side-tables and one at the head of the hall. Well do I recollect the contribution of fruits when Robert Manning, the great pomologist of America, contributed only two baskets of fruit, and the subsequent growth of his enterprise, when he donated many hundred varieties, and afterwards had in the Pomological Garden at Salem 2000 varieties of fruit trees. Thank God, his son, bearing his own name, is with us to-day. Well do I remember the dinner at which sixty gentlemen participated, and the speeches which succeeded it. The scene is before me now. There sat at the head of the table the eloquent Dearborn, there on his right and left sat his Honour Lieutenant-Governor Thomas L. Winthrop (father of our beloved Robert C. Winthrop), and his Honour the then mayor of the city, Harrison Gray Otis, and the accomplished statesman and orator, Daniel Webster, of immortal fame. There, too, were Hon. John C. Gray, Vice-President; Dr. Jacob Bigelow, corresponding secretary of the Society, and John B. Russell, all of whom still survive; and here to-day, much to our joy, are the brothers Hovey, who were present on that occasion.

"I have lived to see great progress and improvement in the agriculture and horticulture of our country, much of which may be primarily traced to the enterprise and labours of Massachusetts men. Suffice it to say, that from the day when Governor Endicott planted his Pear tree at Salem, which still lives—from the day that Peregrine White planted his Apple tree at Marshfield, Mass.—from the day when our Society was formed, it has stood prominently before the world as a leader and patron of agricultural and horticultural science. How marvellous the progress in our own day! How grand the march of horticulture since the establishment of our own Society! It is scarcely fifty years since the Massachusetts Horticultural Society was formed. Then there were only two horticultural and but few agricultural societies in our land: now they are counted by thousands, and are scattered over the continent, all working harmoniously for the promotion of these arts. Then there was scarcely a nursery of any note west, and only a few east of the Hudson River; now they are planted from one shore of our country to the other, and among them are many of the largest in the world. Then Mr. Hovey had not sown the seeds of his Strawberry and other fruits, which have since immortalised his name, or commenced laying-out his extensive grounds and building his houses in Cambridge. Then I had not planted a seed of the Camellia, the Azalea, Pear or Grape, or even attempted the hybridisation of a plant; now our American fruits and plants enrich the gardens and adorn the catalogues of foreign lands. Then we had no such splendid villas as those of Hunnewell, Payson, Gray, and others, with their broad lawns, extensive glass structures and magnificent plants, which are such an honour to our land. Then we had many old and fine homes and gardens, but very little in the way of landscape gardening or in new or rare plants or fruits. Then our exhibitions were confined to a few days of the year, and were for many years held in small rooms; now many of our exhibitions are the best given in any State in the Union. Then we had no building of our own; now we possess the most costly and magnificent temple of horticulture that the world can boast. Then the American Pomological Society, whose President, by the mercy of God, in his twenty-eighth year of service now stands before you, had never been dreamed of—a society that emanated primarily from the influence of the Massachusetts Horticultural Society—a society that embraces not only our national domain, but whose jurisdiction extends over our continent—whose catalogue prescribes the appropriate fruits for fifty States, territories and districts, and at whose quarter centennial in this city the far-off State of Nebraska, with her governor at her head, carried off triumphantly the Wilder Medal for the best collection of fruits. Then there were few exports of fruits; now we send 400,000 barrels of Apples in good years to foreign lands. Then the Grape was scarcely cultivated; now, in addition to all that are used for the table, we make 15,000,000 gallons of wine, and wine, too, that took the first prize at the World's Exhibition at Vienna in 1873. Then the statistics of our fruit crop were not thought worthy of record; now it amounts to 140,000,000 dollars, or nearly the average annual value of our Wheat crop."

Obituary.

On the 22d of last month, at Denver, Colorado, died of rheumatic fever, in the forty-sixth year of his age, the well-known traveller, naturalist, and geologist, Thomas Belt. The son of the late Mr. George Belt, a nurseryman and seedsman of Newcastle-upon-Tyne, he was a practical botanist almost from his infancy. In 1851 Thomas Belt joined in the first great gold rush to Australia, and since that time his life has been that of a hard-working, successful mining engineer. He visited all parts of the world in the course of his profession, but whether as a digger in Victoria, as a manager of mines in Central America, or as a prospector in the wilder parts of

Russia, the engineer was always a naturalist at heart. He was an excellent observer, and a certain speculative tendency led him to group his observations so as to bring out their full theoretical bearings. He was minutely accurate in his description of facts, and bold in his generalisations. He covered so much ground that some of his theories may not bear the test of further research, but some will stand, and all bear witness to the singular grasp of his mind. The chief results of his work are to be found in his papers read before the Geological Society (of which he became a Fellow in 1866), and in a most interesting book entitled *The Naturalist in Nicaragua*, and published in 1874.

In biology Mr. Belt was an advanced evolutionist, and in geology an ultra-glacialist. In both branches of science his papers were suggestive in the highest degree. What he did was so good that much was expected of him, and his sudden loss is an irreparable one to the rapidly thinning group of eminent Tyneside naturalists, to which by right of birth he belonged. *Athenæum*.

—— We regret to announce the death, on Sept. 29, aged sixty-eight, of Mr. George Rose, who for upwards of forty years was gardener to the late and present Lord Heytesbury, at Heytesbury House, Wilts. He retired from the management of these gardens last Christmas on a handsome pension allowed him by Lord Heytesbury, and was succeeded by Mr. J. Horsefield.

The Weather.

State of the Weather at Blackheath, London, for the Week ending Wednesday, Oct. 9, 1878.

Month and Day.	Barometer: Mean Reading at 32° and Sea Level.	Barometer: Departure from Average of 63 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 years.	Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct	In.	In.	°	°	°	°	°				In.
3	30.02	+0.13	72.0	48.6	24.4	58.3	+ 4.4	49.4	73	W. N.W.	0.00
4	29.98	+0.29	68.8	47.2	21.6	57.0	+ 3.5	48.0	72	S. S.W.	0.00
5	29.89	+0.21	71.0	49.0	25.0	60.8	+ 7.6	54.0	82	S.W. to S.W.	0.00
6	29.61	−0.08	70.0	51.0	13.0	60.3	+ 7.1	56.3	87	S.S.E.	0.00
7	29.35	−0.34	68.0	55.4	13.2	60.7	+ 8.1	53.1	76	S S.S.W.	0.25
8	29.31	−0.38	65.1	54.9	13.2	59.1	+ 7.2	53.7	82	S.S.W.	0.06
9	29.35	−0.31	65.0	51.4	13.6	57.6	+ 5.7	52.3	83	S. S.S.W.	0.09
Mean	29.64	−0.04	68.8	51.7	17.3	59.2	+ 6.3	52.5	79	S.; S.S.W.	sum 0.40

Oct. 3.—A brilliantly fine day. Clear. Cloudless at night.
— 4.—A very fine, clear, warm day. Cloudless at night. Warm.
— 5.—Beautifully fine and bright. Warm.
— 6.—Fine day, but dull. Rain from 5 to 7 P.M. Warm.
— 7.—A fine bright day. Heavy rain in early morning Thin rain after 9 P.M. Warm.
— 8.—A fine bright day. Showery till 9 A.M. Windy. Cloudless at night. Warm.
— 9.—Fine till 10 A.M. Overcast, dull, with occasional rain till 8 P.M. Fine, but cloudy after. Strong wind.

London: *Barometer*.—During the week ending Saturday, October 5, in the vicinity of London the reading of the barometer at the level of the sea decreased from 30.08 inches at the beginning of the week to 29.71 inches by the morning of September 30, increased to 30.35 inches by the morning of October 3, decreased to 30.19 inches by the afternoon of the 3d, increased to 30.22 inches by the night of the same day, decreased to 30.03 inches by the end of the week. The mean reading for the week at sea level was 30.09 inches, being 0.24 inch above that of the preceding week, and 0.21 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 74° on October 5 to 62° on the 2d; the mean value for the week was 67°. The lowest temperatures of the air observed by night varied from 40° on October 2 to 51° both on September 29 and 30; the mean value for the week was 47.3°. The mean daily range of temperature in the week was 19.1°, the greatest range in the day being 25° on October 5, and the least 14.2°, on September 29.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—Sept. 29, 56°.3, + 1°.9; 30th, 56°.6, + 2°.3; Oct. 1, 53°.2, — 1°.2; 2d, 49°.5, — 4°.7; 3d, 58°.3, + 4°.4; 4th, 57°, + 3°.5; 5th, 60°.8, + 7°.6. The mean temperature of the air for the week was 56°, being 2° higher than the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 143° on October 5, 139° on the 3d, and 135° on the 4th; on the 1st the highest reading was 110.1°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 34° on October 2, and 40.2° on the 5th. The mean of the seven lowest readings was 43°.

Wind.—The direction of the wind was variable, and its strength gentle. The weather during the week was fine, bright, dry, and warm.

Fog prevailed on September 29, and on October 2 and 5.

Rain fell on two days during the week; the amount collected was 0.14 inch.

England: *Temperature*. — During the week ending Saturday, October 5, the highest temperatures of the air observed by day were 74° at Blackheath, 72° at Bristol, 71.8° at Eccles, and 70.1° at Leicester; the highest temperature of the air at Bradford was 62.8°, and at Wolverhamton was 62.3°; the mean value from all stations was 68°. The lowest temperatures of the air observed by night were 30° at Eccles, 32.8° at Sheffield, 33.1° at Nottingham, and 34.3° at Wolverhampton; the lowest temperature of the air at Brighton was 46.2°, and at Plymouth was 46°; the mean value from all stations was 38.4. The range of temperature in the week was the greatest at Eccles, 41.4°, and the least at Plymouth, 19°; the mean range from all stations was 29.1°.

The mean of the seven high day temperatures was the highest at Blackheath, 67°, Bristol, 65.4, and Truro, 65°, and the lowest at Bradford, 58.1°, and Wolverhampton, 59.3°; the general mean from all stations was 62.1°. The mean of the seven low night temperatures was the lowest at Eccles, 45.3°, Nottingham, 46°, Wolverhampton, 46.3, and Bradford and Leeds both 47.4°, and the highest at Truro and Plymouth, 51°, and Brighton, 50.3°; the mean from all stations was 48.1°. The mean daily range of temperature in the week was the greatest at Blackheath, 19.2°, and the least at Bradford, 11°; the mean daily range from all stations was 14.1°.

The mean temperature of the air for the week from all stations was 54°, being 4.3° higher than the value for the corresponding week in 1877. The highest were 57° at Truro, 56.8° at both Plymouth and Sunderland, and 56° at both Blackheath and Brighton; and the lowest were 51.6° at Eccles and Bradford, and 52° at Wolverhampton and Hull.

Rain.—The falls of rain varied from 1.8 inch at Sheffield, and 1.4 inch at both Eccles and Leeds, to one-tenth of an inch at Blackheath, Brighton, and Bristol. The average fall over the country was seven-tenths of an inch.

The weather during the week was fine, bright, and mild.

Thunderstorms occurred at Cambridge, Hull, Wolverhampton, and Leicester, on September 30.

Scotland: *Temperature*.—During the week ending Saturday, October 5, the highest temperatures of the air varied from 66° at Dundee to 62.3° at Aberdeen; the mean value from all stations was 64.4°. The lowest temperatures of the air varied from 30° at Perth to 37° at Aberdeen; the general mean from all stations was 33.8°; the mean range of temperature in the week from all stations was 30.1°.

The mean temperature of the air for the week from all stations was 50.3°, being 2° lower than the value for the corresponding week in 1877. The highest were 51.8°, at Glasgow, and 51.1° at both Dundee and Leith; and the lowest were 49° at Perth and 49.4° at Aberdeen.

Rain.—The falls of rain varied from 1.4 inch at Dundee to three-quarters of an inch at Glasgow; the average fall over the country was 1.4 inch nearly.

Dublin. — The highest temperature of the air observed by day was 69.3°, the lowest was 44.4°, the range was 25.1°, the mean was 58.1°, and the fall of rain was 0.37 inch.

James Glaisher.

Enquiries.

He that questioneth much shall learn much.—Bacon.

Hibiscus syriacus. — Is there any stock on which the beautiful Hibiscus syriacus (Althæa frutex) can be worked to get good standards? *Sarum*.

Origin of the Gros Colman Grape. -Who raised the Gros Colman Grape, and who sent it out, and when? *W. F. B.* [We know nothing of the history of this Grape, but believe it to be of foreign origin. The first time we saw it was in the early days of South Kensington, when it was shown by the late Mr. John Standish. In 1872 the late Mr. Thomas Rivers stated that he had received it twenty years previously from M. Vibert, of Angers; and we understand that the variety was first introduced to the Chiswick Garden by M. Leroy, of the same place. Will some of our foreign readers kindly answer this inquiry for its history? Eds.]

Tropæolum speciosum. — Can any of your readers tell me how to persuade seed of Tropæolum speciosum to germinate? The plant grows well in my garden on a northern aspect (no other). I have given well-ripened seed of it to many friends, but neither they nor I have ever been able to make it grow. *C. E. J.*

Answers to Correspondents.

Ampelopsis: *C. W. D.* About February is the best time to put in cuttings. Cut them to the length of about 6 inches, and insert them in any ordinary sandy soil. They do not require heat.

Calceolarias: *Amateur*. If he has not got them Mr. Cannell would get them for you, if procurable.

Clay Garden: *Troubled Amateur*. First of all, to cure your "cold, wet clay," drain thoroughly. Then burn a portion of the clay soil, to mix with the rest. The process is briefly described at p. 318. Throw up the soil in rough ridges for the winter, and let the frost get at it thoroughly. Then in fine dry weather, next spring, apply the burnt material to the surface, with any ashes or gritty matter you can collect, and fork it down, mixing as well as you can. Do this again the next winter, laying the surface up to weather as often as possible, and you will improve the staple in time. The lawn will probably come right if drained, especially if next year is less favourable to grass than the present has been.

Eucalyptus: *Eucalyptus*. The plant will not be likely to succeed in your part of the country. See pp. 461 and 473, in our present issue.

Ferns: *W. Higgte*. The two Polystichums you send are not of the same variety or type, and therefore cannot both come from the same crown. We have no doubt the explanation of the matter is this—that two seedling plants have grown up side by side into one mass, one part of which is of the crested the other of the normal form.

Fumigator: *E. H. H.* Mr. C. Harber, 15, Boughton Street, Worcester.

Fungi: *G. E., Balham*. Your large buff Fungus is Clavaria stricta. None of the coloured Clavarias are desirable adjuncts to the table. — *G. S. Wintle*. One Fungus is Scleroderma vulgare, sometimes mistaken for the Truffle. The other Agaricus lacrymabundus, sometimes mistaken for the Mushroom. The slug is the common grey garden species, Limax antiquorum. —*G. K.* Your Fungus is Xylaria polymorpha.

Gas Heating Apparatus: *A. Jameson*. Write to Mr. Shrewsbury, gas apparatus manufacturer, 59, Old Bailey, E.C. We have no actual experience of his apparatus, but understand that it does its work well.

Lilium auratum splendens: *W. W.* Flowers of this Lily vary so much in size, form, and colour, that several of the more distinct types have been given additional names for the purpose of identification. We do not know a variety named splendens, though there may be one so distinguished.

Mimulus tigridioides: *J. Carter & Co*. A handsome strain of richly marked flowers, remarkably varied in the character of the spotting and the tone of the ground colour.

Names of Fruits: *James Wood*. Doyenné Gris.— *Williams, St. Yeo*. 3, Winter Crassane; 4, Belle Julie; 5, Dumelow's Seedling; 6, Glou Morçeau; 7, 7, Easter Beurré; 8, Beurré Rance; 11, Beurré Diel; 12, Passe Colmar; 13, Beurré d'Amanlis; 14, Doyenné Boussoch. Others not recognised.—*Tydea*. 2, Marie Louise; 4, Sturmer Pippin; 5, Dumelow's Seedling; 6, Marie Louise; 7, Beurré Bose; 8, Suffolk Thorn; 9, Newton Spitzemberg. — *T. M.* 3 and 10, decayed; 4, Hoary Morning; 6, very small specimen of Round Winter Nonsuch; 7, Cornish Aromatic; 9, Northern Greening. Others unknown. — *Belmont*. *Apples*: 1, King of the Pippins; 2, Court of Wick; 3, Powell's Russet; 4, Court Pendu-plat; 5, Flat Nonpareil; 6, French Crab; 8, King of the Pippins; 9, Blenheim Orange; 10, Beachamwell. The others we do not recognise. The Pear is Beurré Diel, a dessert variety, which should be gathered at once.

Names of Plants: *Eno*. Gnaphalium uliginosum and Polygonum Persicaria. — *D. M. D.* Œnothera biennis, var. grandiflora. — *P. B.* Wahlenbergia agrestis.—*W. Bright*. No. 1 is an Arabis; 2, a Commelyna, but we cannot say which species without flowers; 3, Sedum carneum, horn.; 4, Sedum hispanicum (called glaucum in gardens).—*W. M. C.* 1, Chelone obliqua; 2, Pyrethrum uliginosum? 3, Aster Amellus? 4, Veronica spicata; 5, Serratula tinctoria; 6, Hieracium vulgatum; 7, Campanula pusilla. — *P. W. J.* 1, Festuca bromoides; 2, Trisetum flavescens; 3, Agrostis vulgaris; 4, Festuca duriuscula; 5, Carex muricata; 6, Carex flava; 7, Juncus supinus; 8, Chenopodium album. —*H. B.* Eupatorium ligustrinum = E. Weinmannianum. — *H. M. Kettlewell*. We suppose Tropæolum pentaphyllum (*Bot. Mag.*, t. 3190), but you ought to have sent leaves as well as flowers. The leaves of T. pentaphyllum are digitately 5-foliolate.—*Viator*. 1, Picea nobilis; 2, Chamæcyparis (Retinospora) squarrosa.—*W. A. L.* Phytolacca decandra.—*J. M.* We are unable to name the leaf you send as having grown out of the trunk of a tree Fern.—*R. A.* 1, Periploca græca; 2, Syringa Emodi; 3, Rhamnus, sp., but from leaves only it is impossible in many cases to determine the name of a plant.—*Alnwick*. Please send us your full address.—*W. F. C.* 1, Portulaca grandiflora; 2, Tricyrtis hirta.—*J. Lemare*. Gilia coronopifolia, *alias* Ipomopsis picta.—*A. W.*

The scrap is quite insufficient.—*E. H. H.* Your weed is one of the Dodders, Cuscuta epithymum.

PLANT BOX ON PIPES: *Amateur.* The heat from the hot-water apparatus would be injurious to the roots. You should construct a hollow, wooden stand to rest on the pipes, and support the box. If done neatly, this will be no eyesore.

ROUND AND KIDNEY POTATOS: *Enquirer.* You will find five first-class rounds for the purposes named in Schoolmaster and Rector of Woodstock (white), Grampian (red), Blanchard (white, marked with purple), and Radstock Beauty (marked with red). Of kidneys the following are a good selection:—International, Magnum Bonum, and Lapstone (whites), Trophy and Bountiful (coloured kinds). All these were in the front rank of exhibition samples at the Crystal Palace.

SOLANUM: *E. G.* Your plants are badly affected with mildew, occasioned no doubt by keeping them too close and damp after potting up. The best you can do will be to burn the plants and get a fresh stock.

CATALOGUES RECEIVED.—Charles Turner (Royal Nurseries, Slough), Catalogue of Roses, Fruit Trees, Coniferæ, Trees, &c.—R. B. Matthews (65 and 67, Victoria Street, Belfast), Descriptive Priced Catalogue of Flower Roots, Nursery Stock, &c.—Messrs. James Dickson & Sons (Newton Nurseries, and 108, Eastgate Street, Chester), Catalogue of Roses, and of Vines, Mushroom Spawn, &c.—Messrs. Osborn & Sons (The Fulham Nurseries, London, S.W.), Select List of Plants for Autumn and Winter Blooming—André Leroy (Anjers, Maine-et-Loire, France), Catalogue of Plants, Roses, Fruit Trees, &c.—Thomas. S. Ware (Hale Farm Nurseries, Tottenham, London), Autumn Catalogue of Hardy Florists' Flowers, and Climbing Plants and Roses.—Messrs. Paul & Son (The "Old" Nurseries, Cheshunt, Herts), Catalogue of Roses.—Messrs. W. Thomson & Co (16, St. Giles Street, Edinburgh), Descriptive Catalogue of Flower Roots.—Messrs. John Waterer & Sons (American Nursery, Bagshot, Surrey), Catalogue of Rhododendrons and other Plants.—John Moore (Goodhope Rose Nurseries, Market Place, Warwick), Illustrated Catalogue of Roses and Plants, Bulbs, Fruit Trees, &c.—Messrs. S. Dixon & Co. (34, Moorgate Street, London, E.C.). Catalogue of Dutch Flower Roots.

COMMUNICATIONS RECEIVED:—J. G. B.—J. J.—W. B.—W. G.—J. S.—J. I. L.—A. F.—T. C. B.—J. F.-S. & Co.—P. F.—G. Thorne (next week).—G. E.—G. S.—Prof. Koch.—E. R. L.—A. D.—T. M.—J. H.—G.—D. T. F.—D. M.—J. B.—J. F. S (next week).—G. T. (next week).—W. H.—J. D.—N. G.—C. Y. M.—W. M.

Markets.

COVENT GARDEN, October 10.

We have no alterations to quote, slack trade being the rule, and English Pines alone being in demand. A shorter supply of Kent Cobs has somewhat improved prices. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	3 0
Figs, per dozen	1 0	3 0	Peaches, per dozen	6 0	15 0
Cobs and Filberts, lb.	0 8	1 0	Pears, per doz.	2 0	6 0
Grapes, per lb.	0 9	6 0	Pine-apples, per lb.	2 0	6 0
Lemons, per 103	10 0	18 0	Plums, ½-sieve	2 0	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Herbs, per bunch	0 2	0 4
Beans, French, lb.	0 4	0 6	Horse Radish, p bun.	4 0	..
— runners, p. bush.	4 0	6 0	Lettuces, Cos, Eng., per score	1 6	2 6
Beet, per doz.	1 0	2 0	Mint, green bunch	0 4	0 6
Brus sprouts, bush.	2 0	..	Onions, young, bun	0 4	0 6
Cabbages, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Carrots, per bunch	0 4	0 6	Radishes, per bunch	0 1	0 3
Cauliflowers, per doz	2 0	3 0	— Spanish, doz.	1 0	..
Celery, per bundle	1 6	2 0	— New Jersey, doz.	2 0	..
Chilis, per 100	5 0	..	Shallots, per lb.	0 6	..
Cucumbers, each	0 4	1 6	Spinach, per bushel	2 0	..
Custard Mar., doz.	3 0	..	Tomatos, per dozen	2 6	3 0
Endive, Batav. dozen	1 6	..	Turnips, p. 12 bunch	0 6	..
Garlic, per lb.	0 6	..	Vegt. Marrows, doz.	2 0	..

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	1 0	2 0	Myosotis, 12 bun.	2 0	6 0
Asters, 12 bunches	3 0	9 0	Pelargoniums, 12 spr.	0 9	1 6
Bouvardias, per bun.	1 0	4 0	— zonal, 12 sprays	0 4	1 0
Calceolaria, 12 bun.	6 0	12 0	Phlox, 12 bunches	6 0	12 0
Carnations, 12 bunch.	4 0	12 0	Primula, double, per bunch	1 0	2 0
Cornflower, 12 bun.	2 0	6 0	Pyrethrum, 12 bun.	3 0	6 0
Dahlias, 12 bunch.	3 0	9 0	Roses (indoor), doz.	1 0	12 0
Delphinium, 12 bun.	6 0	12 0	— (outdoor), 12 bun.	3 0	12 0
Eucharis, per doz.	4 0	12 0	Spiræa, 12 sprays	1 0	4 0
Gardenias, 12 blms.	3 0	9 0	Stephanotis, 12 sp.	3 0	9 0
Gladioli, various, 12 spikes	1 0	4 0	Sweet Peas, 12 bun.	2 0	6 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Sultan, 12 bun.	6 0	9 0
Jasmine, 12 bunches	6 0	12 0	Tropæolum, 12 bun.	1 0	3 0
Mignonette, 12 bun.	2 0	6 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz.	4 0	12 0	Ficus elastica, each	2 6	15 0
Begonias, per doz.	4 0	12 0	Foliage Plants, various, each	2 0	10 6
Bouvardias, do.	9 0	24 0	Fuchsias, per dozen	3 0	12 0
Calceolarias, p. doz.	6 0	12 0	Mignonette, per doz.	3 0	9 0
Chrysanth., per doz.	6 0	9 0	Myrtles, per doz.	4 0	12 0
Coleus, per dozen	3 0	9 0	Palms in variety, each	2 6	21 0
Cyperus, do.	6 0	12 0	Pelargoniums, scarlets, zonal, doz	2 6	6 0
Dracæna terminalis	30 0	60 0	Petunias, per dozen	4 0	12 0
— viridis, per doz.	18 0	24 0	— Fairy, per doz.	9 0	12 0
Euonymus, various, per dozen	4 0	18 0	Vallota, per doz.	18 0	24 0
Ferns, in variety, per dozen	4 0	18 0			

SEEDS.

LONDON, *October* 9.—The seed market has this week been thinly attended, and the business doing very limited. Of English red Clover seed there is more offering, but the prices asked by growers are above the valuation of Mark Lane buyers. As regards the crop in America (the exported surplus of which has for several years past played so important a part in our market), no new feature has developed itself. Holders in Chicago and the other Western collecting depôts keep firm to their recent demands. At present rates there is no inclination on this side to transmit orders across the Atlantic; but a concession on the part of American houses of 2*s.* to 3*s.* per cwt. would probably induce a certain amount of English and Continental buying. The yield in the State of New York will, it is said, prove disappointing. In neither Alsike, white Clover, nor Trefoil, is there enough business doing to call for remark. The demand for Canary seed continues inactive: occasionally speculators, in order to realise their profit will let go some small portion of their holding at a slight abatement from market currencies. Hemp seed on the spot is scarce and dearer. Good black Rape seed is also in short supply. With respect to winter Tares supply still outstrips demand: quotations have now fallen to close upon a feeding level of value. Fine blue Peas steadily maintain former terms: a heavy consumptive demand for these, caused mainly by the lowness of wages, will probably be experienced during the approaching winter. It is noticed that when money is abundant with the operative, the favourite article of food with him, naturally enough, is meat, but in hard times he has to fall back upon Pulse. The New Dutch Haricot Beans show this year good quality. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday trade was dull, and prices were with difficulty maintained; fine samples of English Wheat, however, fetched late rates. Of foreign there was a fair show, and business was effected at last week's rates. Fine malting barley was steady, but other descriptions were drooping in value. Malt realised former quotations. For Oats late terms were difficult to obtain. Maize tended in buyers' favour, and Beans and Peas both were unaltered, firmness, however, being maintained as regards the former. Flour was dull, and irregular in price.—On Wednesday English Wheat was very quiet at about late rates; foreign was in slow request at Monday's currency. Fine barley, being scarce, was held at full currencies; but the trade for inferior produce was dull. Malt was without material change in price. Oats sold slowly at Monday's quotations, and the trade for Indian Corn was very quiet. Beans were held at full prices, but the market for Peas was very quiet. The flour trade remained dull.—Average prices of corn for the week ending October 5:—Wheat, 40*s.* 4*d.*; Barley, 40*s.* 6*d.*; Oats, 22*s.* 3*d.* For the corresponding period last year:—Wheat, 55*s.* 11*d.*; Barley, 44*s.* 2*d.*; Oats, 24*s.* 6*d.*

CATTLE.

At the Metropolitan market on Monday trade in beasts was very dull, and prices could not be quoted higher on the average. For sheep trade continued dull, and the demand limited, although prices were a little better on the average. There was a large supply of calves; trade was dull, at lower rates. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 4*d.* to 6*s.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 10*d.* to 7*s.*; pigs, 4*s.* to 5*s.*—The cattle trade was dull in tone on Thursday. There was an increased supply of beasts, for which the demand was heavy, at drooping prices. Fine sheep were tolerably steady, but other kinds were flat. Calves and pigs sold at about Monday's rates.

HAY.

At Whitechapel on Tuesday there was a large supply of fodder on sale, and trade ruled dull at drooping prices. Prime Clover was quoted at 110*s.* to 117*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 80*s.* to 85*s.*; inferior, 40*s.* to 70*s.*; and straw, 35*s.* to 42*s.* per load.—There was a large supply of fodder on Thursday. The trade was very dull, and quotations as follows:—Prime Clover, 110*s.* to 117*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 85*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 42*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 90*s.* to 95*s.*; inferior, 65*s.* to 75*s.*; superior Clover, 120*s.* to 130*s.*; inferior, 90*s.* to 108*s.*; and straw, 43*s.* to 48*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that there were good supplies of English Potatos at market, and prices remained steady, but foreign descriptions were scarcely so firm, owing to the increased importation. Subjoined are the current quotations:—Kent Regents, 90*s.* to 110*s.* per ton; Essex ditto, 50*s.* to 90*s.*; Champion, 75*s.* to 85*s.*; rocks, 65*s.* to 85*s.*; Early Rose, 90*s.* to 120*s.*; kidneys, 100*s.* to 110*s.*

COALS.

There was a fair demand for house coal at Monday's market at fully previous prices. On Wednesday sales were made in house coal at an advance of 6*d.* per ton. Seconds were unchanged. Quotations:—Carr's Hartley, 14*s.* 6*d.*; Springwell West Hartley, 14*s.* 9*d.*; Walls End—Hetton, 18*s.*; Hetton Lyons, 16*s.* 3*d.*; Hawthorns, 16*s.* 3*d.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.* 3*d.*; South Hetton, 18*s.*; East Hartlepool, 17*s.* 6*d.*

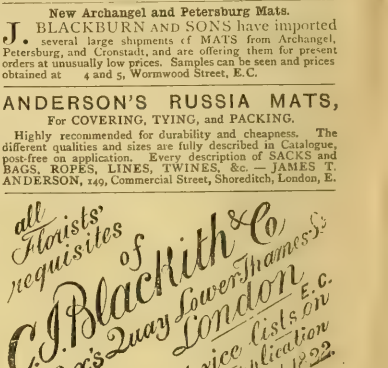
WHOLESALE RUSSIA MAT MERCHANTS.
NEW ARCHANGEL MATS.
ST. PETERSBURG MATS.
RAFFIA FIBRE, NETTING, CANVAS, &c.
MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

ARCHANGEL, PACKING MATS PETERSBURG ETC.
RAFFIA for TYING,
TRAINING STICKS and LABELS,
Bamboo Canes, Virgin Cork, &c.
C. J. BLACKITH AND CO.,
COX'S QUAY, LOWER THAMES STREET, LONDON.

NEW ARCHANGEL MATS.—10,000 just landed. Price 85*s.* per 100, positive cash. Apply to GEORGE BAKER AND CO., 210 and 211, Tooley Street, S.E.; one minute's walk from London Bridge Railway Steps.

New Archangel and Petersburg Mats.
J. BLACKBURN AND SONS have imported several large shipments of MATS from Archangel, Petersburg, and Cronstadt, and are offering them for present orders at unusually low prices. Samples can be seen and prices obtained at 4 and 5, Wormwood Street, E.C.

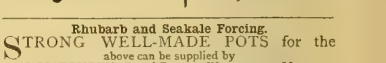
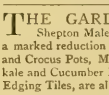
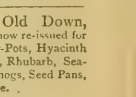
ANDERSON'S RUSSIA MATS,
For COVERING, TYING, and PACKING.
Highly recommended for durability and cheapness. The different qualities and sizes are fully described in Catalogue, post-free on application. Every description of SACKS and BAGS, ROPES, LINES, TWINES, &c. — JAMES T. ANDERSON, 149, Commercial Street, Shoreditch, London, E.



Rhubarb and Seakale Forcing.
STRONG WELL-MADE POTS for the above can be supplied by
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List Free.

THE GARDEN POTTERY, Old Down, Shepton Malet.—My PRICE LIST is now re-issued for a marked reduction on previous lists. Flower-Pots, Hyacinth and Crocus Pots, Moss Pots, Watercress Pans, Rhubarb, Seakale and Cucumber Pots, Snail-Guards, Hedgehogs, Seed Pans, Edging Tiles, are all materially reduced in price.
T. J. HICKES.—Sept. 28.

Hyacinths in Pots.
POTS MADE EXPRESSLY for HYACINTHS can be supplied by
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List Free.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.


GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME FRAMES," PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price Lists free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheets, of Plain or more elaborate designs, with prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
T. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Prices by Post per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

THOMAS MILLINGTON AND CO.,
87, Bishopsgate Street Without, London, E.C., IMPORTERS and DEALERS in WINDOW GLASS of all kinds.

Small Squares in 16 oz.

Prices for the sizes stated, and for not less than a box of 100 feet. Special price for other sizes will be quoted upon application.

No. in 100 feet	Inches.	4ths.	3ds.	2ds.	Bests.
600	6 × 4				
492	6½ ,, 4½	s. d.	s. d.	s. d.	s. d.
412	7 ,, 5	10 0	11 0	12 0	13 0
340	7½ ,, 5½				
300	8 ,, 6				
260	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8	11 0	12 6	14 6	16 9
164	10½ ,, 8½				
145	11 ,, 9				
114	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 3	13 3	15 3	17 6
111	13 ,, 10				
103	14 ,, 10				
90	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11	11 6	13 6	15 6	18 0
92	13 ,, 12				
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	11 9	13 9	15 9	18 3
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15				
44	22 ,, 15	11 9	13 9	15 9	18 3
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	12 3	14 3	16 6	19 0
40	20 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

Orchard House Glass.

In 100 feet Boxes.		21 ounce.			
Inches.	Inches.	4ths.	3ds.	2ds.	Best.
20 × 12	20 × 15	s. d.	s. d.	s. d.	s. d.
20 ,, 13	20 ,, 16	14 6	16 6	18 6	21 0
20 ,, 14	20 ,, 17				

Large Sheets for Cutting.

		Per case—s. d.
4ths Quality, 16 oz.	Common Glazing, in cases of 300 ft.	30 0
,, ,, 21 oz.	,, ,, ,, 200 ft.	30 0
,, ,, 26 oz.	,, ,, ,, 200 ft.	43 6
3ds ,, 15 oz.	Superior Glazing ,, 300 ft.	37 0
,, ,, 21 oz.	,, ,, ,, 200 ft.	37 0
,, ,, 26 oz.	,, ,, ,, 200 ft.	50 0
2ds ,, 16 oz.	Extra ,, ,, 200 ft.	37 6
,, ,, 21 oz.	,, ,, ,, 200 ft.	50 0
,, ,, 26 oz.	,, ,, ,, 200 ft.	66 6
Best ,, 16 oz.	Glass ,, ,, 200 ft.	50 0
,, ,, 21 oz.	,, ,, ,, 200 ft.	60 0
,, ,, 26 oz.	,, ,, ,, 200 ft.	80 0

BEST PUTTY, Genuine WHITE LEAD, LINSEED, BOILED OIL and TURPENTINE, COLOURS, VARNISHES, and Brushes.

BELGIAN GLASS for GREENHOUSES, &c.,

Can be obtained in all sizes and qualities, of

BETHAM & SON,

9, LOWER THAMES STREET, LONDON, E.C.

B. & Son have always a large Stock in London of 20-in. by 12-in., 20-in. by 14-in., 20-in. by 16-in., 20-in. by 18-in., in 16-oz. & 21-oz.

HORTICULTURAL WINDOW GLASS.

A large variety of sizes, 15-oz., 12s. 6d.; 21-oz., 16s. 6d. per 100 feet. Large sizes, in Cases, for Cutting up—15-oz. 4ths, 30s.; 3ds, 40s. per 300 feet;—21-oz. 4ths, 30s; 3ds., 40s. per 200 feet.—ALFRED SYER, Glass, Lead, Zinc, Oil and Colour Merchant, 8, Pentonville Road, London, N.

SEED DRAWERS.—Wanted, a Case of Second-hand Seed Drawers. A rough sketch, dimensions, general description, and price should be given.
A. D., 40, Great Edward Street, Belfast.

HELLIWELL'S PATENT SYSTEM of Air and Water-tight GLAZING WITHOUT PUTTY, and without exposing any outside woodwork to Paint, and NEW SYSTEM of COVERING ROOFS.

The fasteners are brass or copper. The peculiar arrangement of the Glass covers the whole of the Woodwork and only the small fastener is visible, therefore the roof is indestructible and outside painting unnecessary. The squares of glass can be easily removed, and the whole be taken out and cleaned by any inexperienced person. Breakage is impossible except through carelessness or accident.

The Glazing is more air-tight than the old putty system, yet any amount of ventilation can be given.

Old Roofs may be reglazed on this principle, and roofs are covered with slates or zinc on this system.

Extract from *Building News*.

"Mr. T. W. Helliwell, of Brighouse, has recently patented and introduced a New System of Glazing and covering Roofs, which is certainly superior to anything of the kind we have seen before, and it will in our opinion supersede any other system before the public."

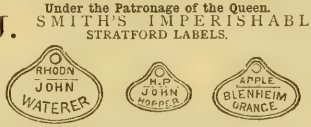
Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire; and 19, Parliament Street, London, W.C.

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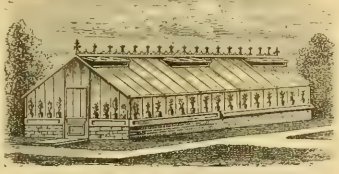
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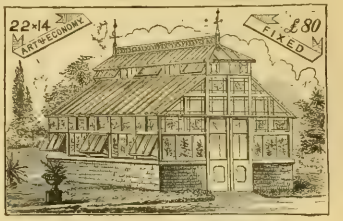
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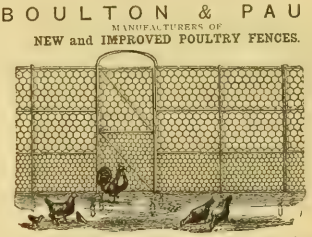


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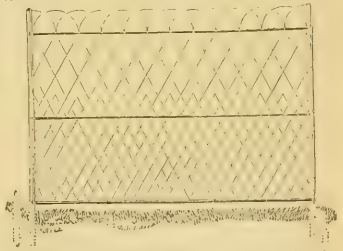


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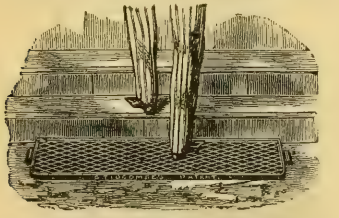
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GARDENER (HEAD, WORKING).—Age 30, single; throughly practical in the Management of Vineries, Peach-houses, Stove and Greenhouse Plants, Ferns, and Fruit, Flower, and Kitchen Gardens. Highest testimonial or abilitilies, &c.—J. THORNTON, Sadberge Hall, Darlington.

GARDENER (HEAD, WORKING).—Age 34, married; has a thorough practical knowledge of the Forcing and general Cultivation of Fruits, Flowers and Vegetables, and can take charge of Land and Stock if required. Seven years' excellent character from last situation.—W. W., 2A, St. John's Road, Upper Holloway, N.

GARDENER (HEAD, WORKING), where two or more are kept.—Age 21, married, one child; thoroughly understands the profession. A fair quantity of Glass preferred. Fourteen years' experience. Good references. Her's or adjoining counties preferred.—W. C., Mrs. Reynolds, Park Street, Baldock, Herts.

GARDENER (HEAD, WORKING), where two or more men are kept.—Married, no family; has had eighteen years' practical experience in all branches of the profession, and thoroughly competent to take the Management of any Nobleman's or Gentleman's Place. Can be highly recommended by present employer, with whom he has lived nearly five years.—WILLIAM COWLES, Gardener, Packington Hall, near Lichfield.

GARDENER (HEAD, or SINGLE-HANDED).—Age 30, married; over twenty years' experience. At liberty immediately.—P. JAMES, Mr. Bissat's, Stationer, Baxter Gate, Doncaster.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 33, married; has a thorough knowledge of Early and Late Forcing, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Excellent references.—C. D., 214, High Street, Stoke Newington, N.

GARDENER.—Age 26, where another is kept preferred. Has had good experience in all branches. Good character from last and previous employers.—WICKENDEN, 3, Willow Terrace, Woodland Road, Upper Norwood, S.E.

GARDENER.—A GENTLEMAN wishes to recommend his Gardener, who is thoroughly well up in every branch of the profession and can Lay-out Grounds.—Mr. POPE, Harold Court, Romford, Essex.

GARDENER.—Age 33, married, respectable; understands the management of Grapes, Melons, Stove and Greenhouse Plants, Flower and Kitchen Gardening.—P. W., Gardener, Sarratt Green, near Rickmansworth, Herts.

GARDENER.—GEORGE B. TILLYARD, Gardener to the Earl of Yarborough, Brocklesby Park, Ulceby, Lincolnshire, will feel a great pleasure in recommending his late Foreman, J. Riches, to any Nobleman or Gentleman requiring the services of a thorough practical Gardener.—Address as above.

GARDENER (SINGLE-HANDED).—Age 26; four and a half years' good reference.—G. WIGGINS, Eynsham, Oxon.

GARDENER (SINGLE-HANDED, or where another is kept).—Young; thoroughly competent in every Department of Gardening.—F. B., Wright, Greaves, Prestwich, near Manchester.

GARDENER (SINGLE-HANDED).—Married, no family; thirteen years' good practical experience of the profession, two years and a half in present situation. Good character.—F. RUFLEY, Gardener, Boulthurst, Smp.field, Surrey.

GARDENER (good SINGLE-HANDED, or where assistance is given).—Age 25, married; thoroughly understands Stove and Greenhouse Plants, Vines, and Flower and Kitchen Gardening. Good character from present employer.—W. C. COOK, Elmwood, Sudbury, near Harrow, Middlesex.

GARDENER (UNDER).—Age 22; leaving through family going away. Good character.—E. R., Leam, Leamington.

GARDENER (UNDER), or to look after a Pony and small Garden.—Age 18; good character.—A. B., 1, Norwood Terrace, Southall, Middlesex.

GARDENER (UNDER).—Age 24; willing to Assist in the Houses, principally outside preferred. Good character.—State wages to F. E., 115, North Cottage, Mersham, Surrey.

FOREMAN, or has no objection to good JOURNEYMAN'S place. State wages &c.—H. B., 3, Brunswick Road, Upper Holloway, London, N.

FOREMAN, in the Houses.—Age 24; can be well recommended. Two years in previous situation.—J. H., 3, Pond Square, Highgate, N.

FOREMAN, in a Nobleman's or Gentleman's establishment.—Has had good experience in Plant and Fruit Growing, having been five years with one of the leading exhibitors, also with the leading nurserymen. State wages.—C. S., 3 Poplar Terrace, Boundy Road, Markhouse Common, Walthamstow, N.E.

FOREMAN and PROPAGATOR.—Age 32; sixteen years' experience in some of the leading Nurseries. Good character from present and previous employer.—H., Messrs. Cutbush & Son, Highgate, N.

NURSERY FOREMAN, active, indoor, is open to engagement.—PLANTSMAN, E. Deakin, Reddish Green, Manchester.

TO NURSERYMEN and FLORISTS.—The Subscriber offers his services to any Nurseryman or Florist in want of an energetic WORKING MANAGER or FOREMAN and PROPAGATOR. He is also well qualified to Grow Plants and Flowers for Market. Has no objection to take a journey. Wages a secondary consideration, if progressive. ALPHA, 180, High Holborn, W.C.

ASSISTANT PROPAGATOR, or FOREMAN, or ASSISTANT PROPAGATOR and FOREMAN.—Age 25; could Manage small Business; versed in Bedding Plants, knowledge of Shrubs, also Palms, Ferns, and Winter Flowering Plants Good Salesman.—C., 3, Sefton Terrace, Alma Road, East Hill, Wandsworth, London, S.W.

JOURNEYMAN, in the Houses; age 20.—H. JARVIS, Gardener to E. Edwards, Esq., Kidbrooke Lodge, Blackheath, wishes to recommend a young Man, just leaving, for the above.

TO LANDSCAPE GARDENERS.—A young Belgian, age 32, is in want of a situation in England under a Landscape Gardener. Thoroughly understands Drawing, Plan Making, Surveying and Laying-out. Understands English, and speaks it a little. Can be well recommended. Wages not so much an object as an opportunity for acquiring the practice.—W. R., *Gardeners' Chronicle* Office, W.C.

IMPROVER, in a Gentleman's establishment.—Age 16; two years' experience in the Houses.—HEAD GARDENER, Bramley Park, Bramley, Guildford, Surrey.

IMPROVER.—A respectable young Man (aged 19) seeks a situation in a Gentleman's Garden, where he will have the opportunity of learning the general routine of Gardening. Will pay a Premium. Good references.—J. PERKIN, Heath Street, Stourbridge.

To Gardeners.

APPRENTICE, under a first-class Gardener.—Age 17. Premium given.—Mrs. DUTTON, Stoke Heath, Market Drayton.

MANAGER, TRAVELLER or SHOPMAN.—A thoroughly practical and competent person, of extensive experience in all branches of the trade, who will be disengaged in November, offers his services in either of above capacities. Thirteen years' unexceptional references—C. M. F., *Gardeners' Chronicle* Office, W.C.

SHOPMAN.—Age 23; highest references.—ALPHA, Messrs. Hurst & Son, 6, Leadenhall Street, London, E.C.

SHOPMAN (or SECOND).—Age 24; over nine years' experience in all branches. Highest references. The Provinces preferred.—J. S., Messrs. Hogg & Wood, Coldstream, N.B.

Seed Trade.

CLERK or SHOPMAN.—Experienced in both and accustomed to Travel.—M. M., 12, Whittington Grove, Highgate Hill, N.

TRAVELLER, BOOK-KEEPER, or CORRESPONDING CLERK in a Nursery or Seed Business.—Ten years' experience. First-class references. Can also undertake Management of a Shop.—C. M. S., Ferrier Brothers, 55, Hope Street, Glasgow.

TO NURSERYMEN, SEED MERCHANTS, and OTHERS.—Advertiser (married) is desirous of an Engagement; several years' experience. Is well up in Book-keeping, Correspondence, and Accounts.—B., Mr. Lewis, 51, Leconfield Road, Highbury New Park, N.

J. SCOTT, The Royal Nurseries, Merriott, Somerset, can highly recommend a Young MAN, who is desirous of engagement in a first-class London House. He has been with the Advertiser six years, the three last as Foreman and Clerk.

TO SEEDSMEN, FLORISTS and FRUITERERS.—Situation wanted, by Seaside; salary a secondary consideration, if progressive.—ALEPH, *Gardeners' Chronicle* Office, W.C.

KINAHAN'S LL WHISKY. The cream of old Irish Whiskies. Pure, mild, mellow, delicious, and most wholesome. Universally recommended by the Medical Profession. Dr. Hassal says: "The Whisky is soft, mellow, and pure, well matured, and of very excellent quality."—20, Great Titchfield Street, London, W.

E. LAZENBY AND SON'S PICKLES, SAUCES, and CONDIMENTS.—E. LAZENBY AND SON, sole proprietors of the celebrated recipes, and manufacturers of the pickles, sauces, and condiments so long and favourably distinguished by the name, beg to remind the public that every article prepared by them is guaranteed as entirely unadulterated.—92, Wigmore Street, Cavendish Square (late 6, Edward Street, Portman Square), and 18, Trinity Street, London, S.E.

HARVEY'S SAUCE.—CAUTION.—The admirers of this celebrated sauce are particularly requested to observe that each bottle prepared by E. LAZENBY AND SON bears the label, used so many years, signed "*Elizabeth Lazenby.*"

EPPS'S

GRATEFUL

(*James Epps & Co., Homœopathic Chemists.*)

COMFORTING

COCOA.

Consumption and Asthma in all their stages
INSTANTLY RELIEVED BY

DR. LOCOCK'S PULMONIC WAFERS, which taste pleasantly, and give immediate relief and a rapid cure to Coughs, Asthma, Bronchitis, Consumption, Colds, Whooping Cough, Phlegm, and all Disorders of the Breath, Throat and Lungs. In Rheumatism and Nervous Pains "they act like a charm." Price, 1s 1½d. and 2s. 9d. per Box.

DINNEFORD'S MAGNESIA.

The Medical Profession for over Forty Years have approved of this pure solution as the Best Remedy for

ACIDITY OF THE STOMACH, HEARTBURN, HEADACHE, GOUT, AND INDIGESTION,

and as the safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.

DINNEFORD'S MAGNESIA.

HOLLOWAY'S OINTMENT and PILLS.—Sudden changes of temperature sorely try all persons prone to Rheumatism, Sciatica, Tic Doloreux, and many maladies scarcely less painful, though of shorter duration. On the first attack of stiffness or suffering in any muscle, joint, or nerve, recourse should immediately be had to fomenting the seat of disease with hot brine and rubbing in this remarkable Ointment, which will assuage the uneasiness of the part, subdue inflammation, and reduce the swelling. The Pills, simultaneously taken, will rectify constitutional disturbances and renew the strength. No remedy heretofore discovered has proved so effective as the Ointment and Pills for removing gouty, rheumatic, and scrofulous attacks, which afflict all ages, and are commonly called hereditary.

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

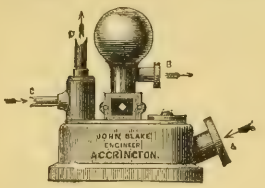
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1600 FEET.

This advertisement will appear again on October 26



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

...om the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September 6, 1875.*

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wineham, February 10, 1877.*

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July 16, 1873.*

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug. 22, 1878.*

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq, *Emmott Hall, near Colne, December 21, 1868.*

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.

GOLDEN YEWS.

The collection of Golden Yews in this Nursery is unequalled in any Trade Establishment, either in this country or in Europe.

The plants are remarkable alike for their size and variety in form, many of them are from twenty-five to forty years old, and have, during that period, been subjected to repeated close pruning, thus securing the dense, compact, and symmetrical growth which render them so strikingly attractive. The plants have been recently removed, and will be guaranteed.

TAXUS BACCATA AUREA.
(OLD GOLD STRIPED YEW).

Of this fine plant we have to offer the following :—

GOLD STRIPED YEWS, of semi-globular form, densely feathered to the ground, beautiful specimens, 2½ to 3 feet high, and 6 to 9 feet in circumference; larger sizes from 4 to 5 feet and 6 to 7 feet high, with a circumference of 8 to 10 feet.

GOLD STRIPED YEWS, of conical or pyramidal form, 8 to 10 feet high, and 6 to 7 feet in circumference.

GOLD STRIPED YEWS, 4, 5, and 6 feet high, worked on the common Yew with green pillar-like base, golden heads, conical or roundish in form, and from 5 to 7 feet in circumference.

GOLDEN STRIPED YEWS, on green feathered, 4 feet stems, 6, 7, 8, 10, and 12 feet high, the worked golden heads, 8 to 9 feet in circumference, and semi-globular, conical and pyramidal in form.

TAXUS BACCATA ELEGANTISSIMA.

Is of freer habit, and has the leaves more distinctly striped than the older variety. We offer :—

ELEGANTISSIMA GOLDEN YEWS, dense globular plants, evenly formed, 3, 4, and 5 feet high, and 6 to 16 feet in circumference, very handsome plants.

ELEGANTISSIMA GOLDEN YEWS, of conical form, 4 to 5 feet high, and 9 to 13 feet in circumference, dense and compact.

ELEGANTISSIMA GOLDEN YEWS, standard plants with roundish heads, 4 to 8 feet high, and 8 to 16 feet in circumference, perfectly symmetrical.

SEEDLING GOLDEN YEWS.

We were among the first to raise Golden Yews from seed, and in this way have obtained many distinct forms, which vary much in colour, some being quite silver-striped, and many berry-bearing.

We grow them by the thousand, handsome young plants, 2 to 3, 4, 5, and 6 feet high, and as much in circumference.

Our stock of these grand decorative plants is so extensive, and in such first-rate condition, that we have no hesitation in stating that intending purchasers will be highly gratified by an inspection, which is the only means of attaining a correct appreciation of the merit of the plants.

HOLLIES.

ILEX AQUIFOLIUM (The Common Holly).

*** The Hollies grown in the Knap Hill Nursery are altogether unique, having been made a speciality here for the last forty years. We believe that in no other Nursery Establishment in the World, can such a magnificent series of plants be found. We can offer to purchasers a selection from about thirty thousand plants, all of which have been repeatedly and recently transplanted, and which are in the best possible condition for removal.

GREEN HOLLIES.

COMMON GREEN HOLLY, finely grown specimens, 6, 7, 8, 9, 10, up to 15 feet high, well furnished and well rooted.

YELLOW-BERRIED HOLLY, well-grown plants, plentifully berried, 7, 8, 10 to 15 feet high, and as much in circumference.

MYRTLE-LEAVED HOLLY, nicely shaped plants, 6 to 10 feet high, and the same in circumference.

SAW-LEAVED HOLLY, fine pyramidal plants, 8, 10, and 12 feet high, symmetrically furnished.

SCOTICA, or BLACK HOLLY, handsome pyramids, 8, 10, and 12 feet high, and 8, 12 and 16 feet in circumference.

SCREW-LEAVED HOLLY, fine and well furnished plants, 8, 10, and 12 feet high, and 10 to 16 feet in circumference.

HODGINS' HOLLY, one of the finest of all the broad-leaved sorts, good conical plants, 5, 6, 7, 8, and 10 feet high, and completely furnished.

SHEPHERD'S HOLLY, another fine broad-leaved sort, well furnished plants, 10 to 12 feet high, and 16 feet in circumference.

LAUREL-LEAVED HOLLY, pyramidal plants, 7, 10, and 15 feet high, handsome, distinct, and effective.

VARIEGATED HOLLIES.

GOLDEN QUEEN HOLLY, splendid standard plants with clean straight stems, of 5 to 6 feet and globular or conical heads, 5 feet deep, and 12 to 16 feet in circumference.

GOLDEN QUEEN HOLLY, half standards, 4, 5, 6, 7, to 10 feet high and 10 to 14 feet in circumference, on short clear stems, with heads of various shapes, round, conical, &c.

GOLDEN QUEEN HOLLY, fine pyramids, 6 to 10 feet high, and 12 to 15 feet in circumference.

VARIEGATED HOLLIES.

SILVER QUEEN HOLLY, half standards, 4 to 5 feet high, with fine round, or conical heads.

SILVER QUEEN HOLLY, fine pyramids, 5 to 10 feet high, and 5 to 10 feet in circumference.

The stock of large plants of Golden Queen and Silver Queen Hollies consist of many hundred fine specimens.

WATERER'S HOLLY, 4, 5, 6, and 7 feet high, and 6 to 16 feet in circumference, hundreds of specimens clothed to the ground.

WATERER'S HOLLY, fine large compact headed standards, on 4 to 6 feet stems, with heads 10 to 15 feet in circumference.

Of Waterer's Holly, which originated at Knap Hill, and which is one of the hardiest of the variegated kinds, and from its dense and compact habit one of the most desirable, we possess altogether the largest number of the finest specimens in the trade.

Beside the above, we have magnificent specimens of all the best Gold and Silver striped and blotched Hollies, varying in height from 6 to 12 feet. These plants are all well furnished, and properly rooted.

Purchasers of such plants are invited to pay a visit to the Nursery, and we promise that no disappointment will arise either as to the quantity and quality of the plants, or the prices asked for them.

WEEPING HOLLIES.

GREEN WEEPING HOLLY, standards on clean stout straight stems, 8 to 10 feet high, and loaded with berries, pyramidal plants feathered to the ground, 6 to 8 and 9 feet high.

PERRY'S WEEPING HOLLY, standards, with 5 to 6 feet high stems and fine drooping heads, 10 to 15 years worked.

PERRY'S WEEPING HOLLY, grown as pyramids, feathered to the ground, 5 and 6 feet high; very handsome plants.

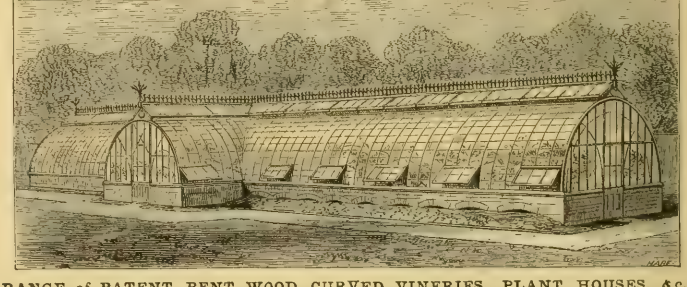
*** This variety when clothed with berries, as is frequently the case, forms one of the most attractive objects known to gardens.

NEW GOLDEN WEEPING HOLLY, a very fine new variety, standards, good plants.

WEEPING MILKMAID HOLLY, on 4 to 6 feet stems, with fine drooping heads.

ANTHONY WATERER, KNAP HILL NURSERY,
WOKING, SURREY.

W. H. LASCELLES,
HORTICULTURAL BUILDER,
121, BUNHILL ROW, LONDON, E.C.



RANGE of PATENT BENT WOOD CURVED VINERIES, PLANT HOUSES, &c., recently erected at Croydon.

These Houses are light, strong, durable, and of elegant appearance. Can be made as cheaply as a plain, straight House, and no Bent Glass need be used.

Illustrated Sheets sent, post-free, on application, and Estimates given without charge.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

No. 251.—Vol. X. { New Series. } SATURDAY, OCTOBER 19, 1878. { Registered at the General Post Office as a Newspaper. } Price 5d. Post Free, 5½d.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 *are* 1*s. each.*

THE THIRTY-THIRD ANNUAL EXHIBITION (open to all England), of the BOROUGH of HACKNEY CHRYSANTHEMUM SOCIETY will be held at the Royal Aquarium, Westminster, S.W., on TUESDAY and WEDNESDAY, November 19 and 20, when, in addition to a liberal scale of Prizes, FIVE SILVER CUPS (value Five Guineas each), will be awarded.

SCHEDULES may be had on application. Entries will be received up to and including Friday, November 15, by

WILLIAM HOLMES, Honorary Secretary,
Frampton Park Nursery, Hackney, E.

THE SHROPSHIRE HORTICULTURAL SOCIETY'S SHOW of FRUIT and CHRYSANTHEMUMS will be held at the Music Hall, Shrewsbury, on November 21 next. Applications for Schedules to be made to the Honorary Secretaries,

ADNITT AND NAUNTON, Shrewsbury.

NORTHERN COUNTIES SHEEP DOG TRIAL ASSOCIATION,
Open to the Counties of Cumberland, Westmoreland, Lancashire, and the West Riding of Yorkshire.

The FIRST ANNUAL MEETING will be held on MONDAY, November 4, at 11 o'Clock A.M., on the West Side of Barbon Fell, Westmoreland, 1 mile from Barbon Station, on the London and North-Western Railway.

Several SILVER CUPS, and PRIZES to the amount of about £40, will be offered for the Best Trained and Best Bred Dogs

Particulars of the Prizes, with Lists of Patrons and Subscribers, will shortly be issued, and may be obtained from the Hon. Secretary,

Mr. T. FAWCETT WARDEN,
October 10, 1878. Kirkby Lonsdale, Carnforth.

MY GENERAL CATALOGUE (No. 7) of New Plants, Trees, Shrubs, and Greenhouse Plants, Azaleas and Camellias, is now ready, and will be sent free on application ED. PYNAERT, Ghent, Belgium.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application

Roses.

CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready. The Trees are very fine this season.

Fruit Trees.

CHARLES TURNER'S select LIST of the above is also now ready. Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.

CHARLES TURNER'S CATALOGUE can be had on application. The Royal Nurseries, Slough.

Choice Early-blooming Plants.

SWEET-SCENTED RHODODENDRONS; also MULTIFLORUM and PRÆCOX, which should be potted at once. All are covered with flower-buds. Descriptive priced List on application.
ISAAC DAVIES, Nurseryman, Ormskirk.

DRIED FLOWERS, Grasses, Immortelles, Moss, Bouquets, Wreaths, Baskets, cheap, finest quality. Price List on application.—N. BOETTNER, Romhild, Germany

To the Trade.

STANDARD and DWARF ROSES.—A few thousands of each yet unsold. Plants unusually fine. Price on application.
KEYNES AND CO. Castle Street Nursery, Salisbury.

CHRISTMAS ROSES.—Strong blooming plants, 18s. per dozen, for cash with order, package included. The Trade supplied at the usual discount for cash only. THOMAS KITLEY, Oldfield Nursery, Bath.

CHRISTMAS ROSES. — Large consignment of the above just received in splendid condition, and ready for Sale. Price, post-free, on application to
JULES DE COCK, Nurseryman, Ghent, Belgium.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Conifers. The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

GOLD MEDAL for TUBEROUS BEGONIAS.—Seed just harvested from our unrivalled collection. Sealed packets, 1s. 6d. and 2s. 6d. each.
We offer also our noted strains of PRIMULA, CALCEOLARIA and CINERARIA, at 1s. 6d. and 2s. 6d. per packet.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

CHOICE NAMED RHODODENDRONS. —Fifty Thousand strong bushy plants are offered at £3 per 100, and AZALEAS at 10s. per 100, by
W. H. ROGERS, Red Lodge Nursery, Southampton.

To the Trade.

SEEDLING LARCH, extra fine, 1-yr and 2-yr.
SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr.
The above are offered in quantity, and are especially fine.
LITTLE AND BALLANTYNE, Knowefield Nurseries Carlisle

Spruce Firs

W. H. ROGERS, Red Lodge Nursery, Southampton, can offer the above, from 3 to 10 feet, at the low price of 10s. to 60s. per 100.

HOLLIES, Common Green, 12 to 18 inches to 2 feet, good. Price and sample sent on application.
RICHARD MASON, Windlesham, near Bagshot, Surrey.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Mistleto -Mistleto -Mistleto.

APPLE TREES with MISTLETO, 3s. 6d. and 5s. each for cash with order.
JOHN STEVENS, The Nurseries, Coventry.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers DRACÆNA INDIVISA, 16 to 18 inches high, 30s. per 100; D. INDIVISA LINEATA, 12 to 16 inches high, 30s. per 100; 100 FERNS, of ten sorts, 25s.

Vines -Vines.

B. S. WILLIAMS begs to announce that his stock of GRAPE VINES is unusually fine, and now ready for seeding out. Particulars and price on application. The Victoria and Paradise Nursery, Upper Holloway, London, N.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

SEAKALE and RHUBARB ROOTS, for Forcing, exceptionally fine. For prices and special quotations, apply to
H. THORNTON, 1, Maxwell Road, Fulham, W.

Gentlemen's Gardeners, Amateurs, and Others REQUIRING

GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

WANTED, strong Transplanted and stout Seedling THORNS. Samples to be carriage-paid, or write and give particulars for a quantity.
JOSEPH TREMBLE AND SON, Penrith.

WANTED, strong clean-grown QUICK, 2 to 3 feet; ASH, 4 to 5 feet, and 2½ to 2 feet; LARCH, 2 to 3 feet; CHESTNUTS, Spanish, 3 to 4 feet; SPRUCE FIRS, bushy, 2 to 3 feet, and 3 to 5 feet. Send sample and price to
KINMONT AND KIDD, Exotic and Vauxhall Nurseries, Canterbury, Kent.

2581 Choice Bulbs in

SUTTON'S £5 5s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

1049 Choice Bulbs in

SUTTON'S £2 2s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

539 Choice Bulbs in

SUTTON'S £1 1s. COLLECTION of Bulbs for Open Ground. Carriage free to any railway station in England or Wales.

743 Choice Bulbs in

SUTTON'S £1 5s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any port or railway station in the United Kingdom.

270 Choice Bulbs in

SUTTON'S £2 2s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any port or railway station in the United Kingdom.

136 Choice Bulbs in

SUTTON'S £1 1s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any railway station in England and Wales.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

Notice of Removal.

ROBERT COOPER, SEED MERCHANT, 90, Southwark Street, London, S.E., has Removed from 152, Fleet Street. CATALOGUE of HYACINTHS and other BULBS sent post-free.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).

THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

Miles' New Hybrid Spiral Mignonette.

EXTRA SELECTED from the ORIGINAL STOCK.

WM. MILES has to offer new SEED of the above splendid variety, carefully saved from the finest spikes, at 1s. per packet. The usual allowance to the Trade.
The West Brighton Nurseries, Cliftonville, Sussex.

HOME GROWN LILIUM AURATUM.—Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."

CHARLES NOBLE has just harvested this year's crop, and will give prices on application.
Bagshot.—October 12.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

To the Trade Only.

HYACINTHS, TULIPS, CROCUS, of first size and extra quality. We hold a large stock, and can offer them at low prices; also double Roman and Paper-white NARCISSUS, SPIRÆAS, GLADIOLUS BRENCHLEYENSIS, SNOWDROPS, BEGONIAS, CHRISTMAS ROSES.
F. SANDER AND CO., Seed Growers, St. Albans.

Bulbs for the Season.

CHARLES TURNER'S consignments of the above have arrived in fine condition. The roots are remarkably sound, and early orders are respectfully solicited.
CATALOGUES post-free on application.
The Royal Nurseries, Slough.

Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.
Highgate, London, N., and Barnet, Herts.

For every Description of Fine

NURSERY STOCK, apply to W. H. ROGERS, Red Lodge Nursery, Southampton.

CAMELLIAS.—Six large and well-grown for sale, cheap. Good sorts, healthy, and well set with bloom-buds. Apply to
S. WOOLLEY, Nurseryman, Cheshunt, Herts.

AZALEAS and CAMELLIAS.—Well budded and good forcing plants, now offered for Sale.
JULES DE COCK, Nurseryman, Ghent, Belgium.

BUDDED CAMELLIAS and AZALEAS. —Ghent Azaleas, Azalea Mollis, Spiræa japonica, Lilly of the Valley, Palms and Ferns for decoration, Ficus elastica, Begonias, &c. Also over one hundred large specimen Camellias, choicest varieties, splendid pyramids, 3, 4 to 5 feet high, grown in tubs, and nearly all covered with large swollen buds ready to flower, are offered at the usual moderate charges.
The new illustrated general CATALOGUE forwarded free on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

SALES BY AUCTION.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Station on the South-Western Railway.

IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey, to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

Unreserved Sales of Dutch Bulbs of superior quality,

comprising the finest HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, SNOWDROPS, LILIES. &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next and every following Monday, at the Mart, opposite the Bank of England, City, E.C., at half-past 11 o'Clock punctually.

P. AND M. will buy for gentlemen who cannot attend.

Catalogues had at the Mart, and 98, Gracechurch Street, E.C.

Important Sale of a First-class Collection of Dutch

BULBS, a superb assortment of 400 handsome Standard, Dwarf, and Climbing ROSES of the best varieties, selected FRUIT TREES, HARDY SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, October 22, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Addlestone, Surrey.

EXTENSIVE SALE of first-class NURSERY STOCK, in consequence of removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the various Nurseries known as the Ongar Hill, Addlestone, and Ottershaw Nurseries, Addlestone, Surrey, on TUESDAY, October 22, and three following days, at 11 for 12 o'Clock precisely each day, by order of Mr. Alfred Gray, several acres of beautifully grown NURSERY STOCK in fine condition for removal, including 20,000 Common Laurels, 1 to 7 feet; 10,000 Portugal Laurels, 1 to 5 feet; 15,000 Spruce Firs, 1 to 3 feet; 10,000 English Yews, 1 to 3 feet; 10,000 Green Hollies, 1 to 4 feet. Thousands of Pines in variety; 2000 choice Border Shrubs; 10,000 Roses comprising Standard, Half-Standard, and Dwarfs, of the very best sorts; 72,000 Fruit Trees, including 10,000 Standard, Pyramid, and Dwarf Apples, Pears, Plums, and Cherries; 10,000 Dwarf and Cut-back Peaches, Nectarines, and Apricots; 4000 Dwarf trained do.; 100,000 fine Fruit Stocks; 30,000 Ornamental, and thousands of Forest Trees, 5 to 10 feet, &c.

May now be viewed. Catalogues may be obtained of Mr. ALFRED GRAY, Nurseryman, Addlestone, and of the Auctioneers.

N.B. The following out of the 10,000 ROSES and 22,000 FRUIT TREES will be included in the first day's sale:—5500 Standard and Dwarf Roses of the best description; 5000 trained Apricots, Peaches, Pears, Cherries, and Apple Trees; 50,000 Crab, 17,000 Mussel, and 9000 Cherry and other Stocks.

Merriott, Somerset.

Two and a half Miles from Crewkerne Station.

EXTENSIVE UNRESERVED SALE of WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Royal Nurseries, Merriott, on WEDNESDAY, October 23, and two following days, at 11 for 12 o'Clock precisely each day, by order of Mr. John Scott, in consequence of his relinquishing the business in favour of Mr. John George Hill (for many years his Manager), a portion of the extensive and well-grown NURSERY STOCK, consisting of an immense quantity of choice Border Shrubs, including many handsome specimens of Abies Douglasii, Deodara, Picea Nordmanniana, Pinsapo, Regnæ-Amaliæ, Pinus excelsa, Pinus insignis, Wellingtonias, &c.; also clean grown. Fruit Trees of all the finest varieties, collected from all parts of the world; also Forest Trees, including Larch, Spruce, Scotch, Alder, Hazel, Thorn, Hornbeam, Beech, Horse Chestnut, &c.; also Plants for Seaside Planting, including Evergreen Oaks, Euonymus, &c.

Catalogues, now ready, may be had on application to Mr. JOHN SCOTT, Merriott; Mr. J. G. HILL, Yeovil; or of the Auctioneers, Messrs. PROTHEROE AND MORRIS, 98, Gracechurch Street, London, E.C.

Tooting, S.W.—Without Reserve.

To NOBLEMEN, GENTLEMEN, BUILDERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, fifteen minutes' walk from Tooting and Balham Stations, on MONDAY and TUESDAY, October 28 and 29, at 12 o'Clock precisely each day, by order of Mr. R. Parker, a large quantity of extra strong young NURSERY STOCK, remarkably well grown, and in excellent condition for removal, comprising several thousands of Evergreen and Coniferæ Shrubs in specimen borders, admirably adapted for effective planting; a large quantity of handsome Specimen Coniferæ, beautifully grown and symmetrically formed; a splendid assortment of Ornamental Forest Trees, fine Fruit Trees in bearing condition, Hardy Climbing Plants, &c.

May be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 28, Gracechurch Street, E.C.

Islington, N.

PEREMPTORY SALE. — The land being immediately required by the North London Railway Company.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Northampton Park Nursery, Douglas Road, North Islington, opposite Canonbury Station, North London Railway, on WEDNESDAY, October 30, at 11 for 12 o'Clock precisely, the whole of the choice ORCHIDS, STOVE, GREENHOUSE, and other PLANTS, comprising several hundred Orchids adapted for cut flowers, 250 Ficus, 400 Dracænas, 700 Adiantum cuneatum, 500 Bouvardias, 7000 Lycopodiums, 2000 Cytissus, 500 Pelargoniums, 9000 Scarlet and other Geraniums, Camellias, Azaleas, large white and other Rhododendrons, &c.; a brown Gelding, two Market Vans, seven Boilers, quite sound, &c.

May be viewed day prior and morning of Sale. Catalogues on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C.

St. Albans, Herts.

CLEARANCE SALE of 5 Acres of WELL-GROWN NURSERY STOCK, at the Nine Bells Nursery, and also at the New Zealand Nursery, Hatfield Road, St. Albans, four minutes' walk from the Midland Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, on THURSDAY, October 31, at 12 o'Clock precisely, a large quantity of valuable NURSERY STOCK, consisting of Hollies, Bays, 1000 large Yews, Limes, fine bearing Fruit Trees: also a quantity of choice GREENHOUSE PLANTS, including a fine lot of White CAMELLIAS, TEA ROSES on their own roots in pots, strong Bulbs of BEGONIA FREBELII, &c.

Now on View. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

West Wickham, S.E.

UNRESERVED SALE of THRIVING WELL-ROOTED NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Kirkcaldy to SELL by AUCTION, on the Premises, The Nursery, close to the Swan Inn, West Wickham, on THURSDAY, October 31, at half-past 11 o'Clock precisely, in consequence of the great number of lots, a large quantity of beautifully-grown, well-rooted NURSERY STOCK, consisting of 3000 common and Portugal Laurels, 2 to 5 feet; fine Cupressus Lawsoniana, 5 to 6 feet; 2500 Hollies and Yews, Cedrus Deodara, 3 to 4 feet; 2000 handsome Spruce Firs, 2000 Scotch Firs, 1000 Pinus austriaca, quantities of Forest Trees, choice assorted Border Shrubs, Standard Roses, and other Miscellaneous Stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.—*Re* Wm Rollisson & Sons in Liquidation.

UNRESERVED SALE of Valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, on the Premises, the Nurseries, Tooting, S.W., on FRIDAY, November 1, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, comprising about 10,000 choice Border Shrubs, varying in height from 18 inches to 12 feet, and consisting of choice Evergreens and Coniferæ, 5000 Ornamental Trees, climbing Fruit Trees, 500 Standard, Dwarf, and Climbing Roses, Hardy Climbers in pots, &c.

May now be viewed. Catalogues had on the Premises; of G. WHIFFIN, Esq., the Trustee, 8, Old Jewry, E.C.; of Messrs. LEWIS, MUNNS, AND LONGDEN, 8, Old Jewry, E.C.; and of the Auctioneers, 93, Gracechurch Street, E.C., and Leytonstone, E.

Spring Grove Nursery, Isleworth.

MR. WOODS has received instructions from Mr. Trotman to SELL, on the Premises, on TUESDAY, October 22, at 12 o'Clock, a portion of the well-grown NURSERY STOCK, including Evergreens, 4 to 6 feet (many suitable for potting): Standard and Dwarf Roses, Standard and Dwarf Fruit Trees, Ornamental Trees, &c.

Catalogues had on the Premises, and of the Auctioneer, High Street, Hounslow.

Dutch Flower Roots, for Present Planting and Spring Flowering,

arriving weekly from well-known farms in Holland. SALES every WEDNESDAY and SATURDAY during October and November, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Oncidium macranthum, in perfect health.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, October 22, at half-past 12 o'Clock precisely, a fine importation of ONCIDIUM MACRANTHUM, the most beautiful Oncidium, just to hand per *Hydaspes*, and in perfect health; also a magnificent lot of the beautiful golden ODONTOGLOSSUM PARDINUM, at few with flower-spikes; MASDEVALLIA BELLA, ODONTOGLOSSUM BOGOTENSIS, a quantity of cool ORCHIDS in flower, extra fine plants of ODONTOGLOSSUM ROSEZLII, and imported strong plants of ODONTOGLOSSUM HALLII; also a Collection of ESTABLISHED ORCHIDS from a well-known grower, including fine healthy plants of rare and beautiful varieties; a quantity of Established Plants of CATTLEYA SCHILLERIANA, CATTLEYA MARGINATA, CYPRIPEDIUM CRISPUM, &c.; some good plants of COCOS WEDDELLIANA and other PALMS, BULBS from Jersey and Algiers.

On view morning of Sale, and Catalogues had.

Nanodes Medusæ, Maxillaria Lehmanni, ODONTOGLOSSUM ROSEUM, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 24, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., IMPORTED ORCHIDS, just received by Royal Mail Steamer *Moselle*, consisting of several hundreds of Odontoglossum cirrhosum, several hundreds of O. roseum, fine plants in quantity of O. Hallii, Maxillaria Lehmanni, Trichopilia (Piluma) fragrans, Nanodes Medusæ; at the same time will be offered 100 Odontoglossum Cervantesii, starting into growth, 100 growing plants of O. Alexandræ, established plants of Phalænopsis Schilleriana, Odontoglossum Roezlii, Aerides Lobbii, Dendrobium Bensonæ, Cattleya Dowiana, Oncidium varicosum, &c.

On view morning of Sale, and Catalogues had.

Pyrus Maulei.

MR. J. C. STEVENS has received instructions from Messrs. Maule & Sons, of Bristol, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 24, 1000 plants of this beautiful New Fruit, in lots to suit both the Trade and private buyers. Recently exhibited at South Kensington, and much admired.

On view the morning of Sale, and Catalogues had.

Insects, Bird Skins, Books, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, October 25, at half-past 12 o'Clock precisely, several small collections of BRITISH LEPIDOPTERA, including some fine specimens of P. alpina, P. rubeculosa, and other good Scotch Insects, Cabinets, Entomological and other Books, eighty-three fine Peacock Skins, Bird and Animal Skins from Ceylon and Natal; few lots of MINERALS, and other Natural History Specimens.

On view morning of Sale, and Catalogues had.

No. 58, Larkhall Rise, Clapham, S.

MR. J. C. STEVENS, will SELL by AUCTION, on the Premises as above, on TUESDAY, October 29, at half-past 12 o'Clock precisely, STOVE and GREENHOUSE PLANTS, consisting of fine Specimen Plants of Camellias, Palms, Ferns, and other plants suitable for Table Decorations, &c.; also a well-built GREENHOUSE.

On view the day prior and morning of Sale, and Catalogues had of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Nursery Stock, near Station, Potter's Bar, G.N.R.

MR. J. HARLAND will SELL by AUCTION, on THURSDAY and FRIDAY, October 24 and 25, at 12 o'Clock each day, 670 LOTS of thriving HARDY SHRUBS and TREES, including Pears, Plums, Apples, Apricots, Filberts, and Cob Nuts, Gooseberries and Currants; 2000 Spruce, about 2 feet; 1000 Cupressus; 2000 Portugal, common, and other named Laurels; 2000 Limes, 6 to 10 feet; 2000 Rhododendrons; 2000 Green and 1000 Gold and Silver Hollies, 2 to 6 feet; 2000 Yews, 500 large Aucubas; 2000 Asparagus, 2 yr.; Pampas Grass, Agaves, Araucarias, Acacias, Azaleas, Catalpas, Chestnuts, Gum Cystus, Deutzias, Syringas, Lilacs, Cryptomerias, Euonymus, Bays, Junipers, Tulip Trees, large Oaks, Planes and Poplars, 200 Picea nobilis, Pinus of sorts, Retinosporas, Thujas of sorts, Wellingtonias, Yuccas, and others in great variety.

Catalogues on application to JAS. BUTTERFIELD, Osborne Nursery, Potter's Bar, N.; or of Mr. J. HARLAND, Auctioneer, Barnet.

Goldworth Road Nursery, Woking Station, Surrey.

MESSRS. ROWBOTHAM AND CO. have received instructions from the Widow of the late Mr. Cobbett to SELL by AUCTION, on MONDAY, October 28, and three following days, the whole of the well-grown NURSERY STOCK, comprising about 10,000 Roses of the best known varieties, a quantity of Trained Peaches, Nectarines, Apricots and Apples; Standard Pears, Apples and Plums; several thousand year Thujas, Junipers, Cupressus, Aucubas, Portugal and Common Laurels, Spiræas, Deutzias, Quick, Ash, &c. The whole having been recently moved, are now in good condition for planting.

Catalogues of R. E. GEACH, Esq., Solicitor, Guildford; and of the Auctioneers, at their Offices, 136, High Street, Guildford, Surrey.

The Dorking Nurseries.

IMPORTANT SALE of VALUABLE and WELL GROWN NURSERY STUFF, SURPLUS STOCK.

MESSRS. WHITE AND SONS will SELL by AUCTION, as above, on MONDAY, October 28, and two following days, at 11 for 12 o'Clock, about 20,000 various TREES and SHRUBS, in good condition for transplanting, including handsome specimens of Wellingtonias, Deodaras, Pinus of sorts, Piceas of sorts, Abies, Thujas, and Cupressus in great variety, &c., in height varying from 10 to 12 and 15 feet; also a fine lot of Aucubas, Box, Phillyreas, Common and Portugal Laurels, Variegated and Green Hollies; Irish, Golden, and Common Yews; Laurustinus, Berberis, Cupressus, Thujas, &c., from 2 to 5 feet in height, and Spruce Firs in all sizes, Green and Variegated Ivies, and a quantity of Rhododendrons, Kalmias, and other Flowering Shrubs; also a splendid lot of Standard Mulberries, and a Miscellaneous Collection of GREENHOUSE PLANTS, such as Azaleas, Camellias, Exotic Ferns, Palms, Eucharis, Cyclamen, Isolepis, Veronicas, Libonias, &c.

Catalogues may be obtained in due time at Messrs IVERY AND SON'S Nurseries, Reigate and Dorking, and of the Auctioneers, Dorking.

Brox and Woodham Nurseries, Chertsey, Surrey.

One Mile from the Addlestone and Two Miles from the Woking Station on the South-Western Railway.

By Order of the Executrix.

NOTICE of an IMPORTANT SALE of NURSERY STOCK.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Gray to SELL by AUCTION, on MONDAY, October 28, and four following days, the very valuable and well-grown Stock, on the above Nurseries, comprising 7000 Standard Pyramid Trained and Maiden FRUIT TREES, all true to name, and best leading sorts; 3000 Green Hollies, 2 to 3 feet; 2000 Variegated Hollies, 16,000 SPANISH CHESTNUT, 3 to 12 feet; 4000 POPLARS of sorts, 6 to 10 feet; 11,000 HORSE CHESTNUT, 6 feet in the stem; Golden and Flowering ASH, 5000 BIRCH, 4 to 10 feet; 500 LIMES, 6 to 10 feet; large quantity of ASH, OAK, ELM, ALDER, MAPLE, Purple BEECH, and other FOREST TREES, 1500 Laburnum, 8 to 10 feet; 1200 Spruce, 1 to 3 feet; Acer Negundo, Variegated and Common ditto, 6 to 10 feet; 300 Standard Thorns, of sorts; 7000 Pinus insignis, Strobus, austriaca, excelsa, Laricio, 2 to 6 feet; 5000 Larch, 3 to 4 feet; Weymouth Pine, 3 to 6 feet; 700 Cedrus Deodara, 3 feet; 1500 Cupressus Lawsoniana, 3 to 5 feet; 300 Abies Douglasii, 7000 Thuja Lobbii, 5000 Cob Nuts, 5 feet; 3000 Yews, 2 to 3 feet; 3000 Hornbeam, 5 to 7 feet; 5000 Common and Portugal Laurels, 2 to 3 feet; 10,000 Transplanted Quicks, STANDARD ROSES of the most choice sorts; 6000 Manetti Rose Stocks, Ponticum and Hybrid RHODODENDRONS, BERBERIS, about 125 lots of Choice Mixed Shrubs, suitable for immediate Ornamental Planting.

The Auctioneers have pleasure in inviting the attention of Gardeners, Nurserymen, and others to this Stock, which is in perfectly safe condition for removal.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises; and of Messrs. R. & J. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

Nursery Sale.—Expiry of Lease.

HIGHLY IMPORTANT SALE of Magnificent HOLLIES, &c.

MR. DAVID MITCHELL has been instructed by Messrs. Cunninghan, Fraser & Co. to dispose of, by public AUCTION, at their Edge Hill Nursery, Edinburgh, on WEDNESDAY, THURSDAY, and FRIDAY, October 30 and 31, and November 1, each day at 11 o'Clock forenoon, the whole of the SPLENDID HOLLIES growing thereon, consisting of thousands of Golden and Silver Queens from 2 feet to 7 feet 6 inches in height; maderensis and nobilis in quantity, from 3 to 9 feet, beautifully grown plants; splendid lot of Hodginsi, platyphylla, laurifolia, and scotica, all finely formed plants and in the most robust health. Also a magnificent lot of AUCUBA JAPONICA, in sizes. The whole to be Sold without reserve, as the ground has been purchased by the Western Cemetery Company.

NOTE.—The Auctioneer would beg to call special attention to this most important SALE of HOLLIES. The whole of the plants are in magnificent health and well rooted, and can be removed any distance with perfect safety.

Catalogues ready on the 22d inst., and may be had from the Auctioneer, 6, Comely Bank, and the Proprietors, Comely Bank Nurseries, Edinburgh.

Bridge Nursery, Castelnau, Barnes, Surrey:
near the Suspension Bridge, Hammersmith.
CLEARANCE SALE of CHOICE and FINELY-GROWN FRUIT TREES, SHRUBS and PLANTS.
To Gentlemen, Owners of Ornamental Grounds, Contractors, Nurserymen, Builders and Others.

MR. J. A. SMITH is favoured with instructions from Mr. Grant to SELL by AUCTION, at the Nursery, near the "Red Lion," Castelnau, Barnes, Surrey, on WEDNESDAY, October 30, at 12 for 1 o'Clock punctually, the carefully selected NURSERY STOCK of about 25,000 very choice Fruit Trees, and well selected and strongly grown Shrubs and Plants, consisting of dwarf, pyramid, and standard trained Apple Trees, of known sorts, including Manx Codlin, Lord Suffield, and others; standard, dwarf, trained and pyramid Plums, Victorias, old and new Orleans, Dancer's No. 1, Kirk's Hybrid, and others; red Currants, Gooseberries, Cob Nuts, red Filberts, also 5000 Lombardy and Black Italian Poplars, Laurels, Scotch and other Firs, white and yellow Birch, white and yellow Spanish Broom, Lilacs, Laburnums, Privet, green and variegated Euonymus, Sweet Brier, Virginia Creeper, golden Honeysuckle, Chinese Arbor-vitæ, Box, and many other choice varieties. The whole have been selected and grown with great care, and are of a quality very rarely to be met with.

May be viewed the day prior and Morning of Sale. Catalogues may be had at the Nursery; the "Boileau Arms," and "Red Lion" Hotels; and of Mr. J. A. SMITH, Auctioneer and Land Agent, 58, King Street East, Hammersmith, W.

Warminster Nurseries, Wilts.
PRELIMINARY NOTICE of an EXTENSIVE SALE of a portion of one of the choicest NURSERY STOCKS in the kindgom, consisting of many thousands of rare Conifers, evergreen and deciduous Trees and Shrubs, large quantities of Fruit Trees of all kinds, hardy Bulbs, &c.

MR. WM. ABRAHAM is instructed by the Executors of the late Mr. George Wheeler to SELL the above by AUCTION, without reserve, early in November, further particulars of which will be given in future advertisements.

Preliminary Notice of
MESSRS. PROTHEROE AND MORRIS' forthcoming SALES of NURSERY STOCK:—
NOVEMBER 5, 6, 7, and 8.—AMERICAN NURSERIES, Leytonstone, two days, and the NURSERIES, Wanstead Plats, two days.
NOVEMBER 5 and 6—OXTON HILL NURSERY, Birkenhead. By order of Mr. W. Henderson.
NOVEMBER 8.—The NURSERIES, Gravesend. By order of Mr. T. Eves.
NOVEMBER 12 to 16.—Five days' Sale at the NURSERIES, Loughton. By order of Mr. Wm. Paul.
NOVEMBER 12.—UPPER TOOTING PARK NURSERY, Balham. By order of Mr. C. Young.
NOVEMBER 19 to 23.—The NURSERIES, Exeter. Five days' Sale. By order of Messrs. Luccombe, Pince & Co.
EVERY MONDAY. — At the Auction Mart, London. Extensive Consignments of Dutch Bulbs.
Catalogues of any of the above Sales may be had, when ready, on application at the Auctioneers' Offices, 98, Gracechurch Street, E.C.

Preleminary Notice.
MESSRS. CAPES, DUNN AND PILCHER have received instructions from T. M. Shuttleworth, Esq., of Howick House, Preston, who has retired from exhibiting, to SELL by AUCTION, in APRIL NEXT, at the above address, his entire collection of MATCHLESS EXHIBITION SPECIMENS, including Stove and Greenhouse, Flowering and Fine-foliaged Plants, Exotic and British Ferns. The noble collection exhibited by Mr. Shuttleworth in July last, at the Provincial Show of the Royal Horticultural Society (awarded the Lindley Medal), will be included in this Sale, and the entire collection to be offered by auction is unique in character, quality and condition.
Further particulars in future advertisements, and from the Auctioneers, 8, Clarence Street, Manchester.

WANTED to RENT, within 10 miles of London, an Orchard of about 6 to 12 Acres, with a few Acres of Land for Cultivation and Dwelling-house.—S, Bolton Cottage, Mandervilla Road, Enfield Highway, Middlesex.

Land.
WANTED, on Lease, from 2 to 3 acres, suitable for a Nursery, within 20 miles of London, and near to a Railway Station. Apply to
H. K., 5, Cumberland Villas, Acton Green, Middlesex.

TO BE DISPOSED OF, an old-established NURSERY and SEED BUSINESS, in complete working order. Capital required, about £3000.—For particulars address
S. B., Hurst & Son, 6, Leadenhall Street, London, E.C.

Seed, Corn, Coke and Tillage Business.
TO BE DISPOSED OF, an old-established concern as above, comprising House, Shop, Warehouses, &c. Situated in a thriving town in Nottinghamshire. Early possession can be had, and terms arranged.
VERITAS, D. Sell & Co., Wine Coopers, 9, Bush Lane, London, E.C.

TO BE DISPOSED OF, an old-established MARKET GARDENER'S BUSINESS, consisting of 20 Acres of first-class Land situated at Newchurch, and about 12 Acres at Barton Hill, all in the parish of St. George, near Bristol, both in full working order. STOCK to be taken to by valuation in the usual way. HOUSES and OUTBUILDINGS suitable for a Market Gardener if required.—GEORGE T. HASELL, Market Gardener, Barton Hill, Bristol.

To Nurserymen and Others.
Re JOHN CHARLES COLLINS, a Bankrupt.
TO LET, with Immediate Possession, the DWELLING-HOUSE and valuable NURSERY, containing about 2 Acres (but capable of extension), known as the Rose Villa Nursery, near Harrogate, with the Conservatory, Fern-house, Greenhouses, and Forcing Pits.
The extensive Conservatory, Fern-house, two Greenhouses, Forcing Pits, &c., belong to the tenant, and along with the valuable collection of Nursery Plants, including some thousands of Roses, are to be taken at a Valuation, or, if preferred, the Trustee would be prepared to consider a Tender for the same.
For further particulars apply to Mr. JAMES HEWSON, Auctioneer, Knaresborough, the Trustee of the Bankrupt, or to Messrs. BATESON AND HUTCHINSON, Solicitors, Harrogate.

FOR SALE, the LEASE, STOCK, and GOOD-WILL of a small NURSERY, FLORIST and JOBBING BUSINESS in a good neighbourhood in the south of London. For full particuiars apply to
A. B., 26, Silver Street, Regent Street, W.

TO BE LET or SOLD, a FLORIST'S and SEEDSMAN'S BUSINESS, near London, with Dwelling-house and Greenhouses attached; also a good Jobbing Business, together or separate. Established more than twenty years. For particulars apply by letter to
A. Z., Mr. Lewis, 1, Phœnix Yard, Cavendish Square, W.

West Hallam Nurseries.
TO BE LET, the above old-established NURSERIES, consisting of about 5 acres, with House and other Buildings, situate near the Great Northern Railway. The choice young Shrubs and Plants to be taken by valuation. Apply to
OLIVER, NEWBOLD AND OLIVER, Wardwick, Derby.

Great Eastern Railway Company.
DUTCH BULBS.
THE GREAT EASTERN RAILWAY COMPANY have now made special arrangements for the conveyance of Bulbs and Roots from Holland at a rate of 25s. per ton from Rotterdam to London, including delivery within the ordinary cartage limits. Traffic sent by this service will usually be delivered in London on the second day after shipment in Rotterdam. The Company have also instituted an Express Service for the carriage of Bulbs from Rotterdam to London at 45s. per ton, including delivery within the usual cartage limits. The Company guarantee delivery (against forfeiture of freight) the day after shipment in Rotterdam, the act of God alone excepted. The Company are prepared to quote Throughout Rates from any town in Holland to any town in England. The Bulbs should be consigned to the Company's Agents, Messrs. Hudig & Pieters, Rotterdam, to whom full instructions (stating whether the Bulbs are to be forwarded by ordinary or express train) must also be sent. Senders are requested to address their cases in full, and to mark them "Bulbs" in large letters, so as to avoid the possibility of error or delay.
For further information, address The CONTINENTAL DEPARTMENT, Liverpool Street Station, London, E.C.



PARIS EXHIBITION, 1878.

IMPORTANT AWARDS.

MESSRS. SUTTON & SONS

Have the pleasure of stating that they have received an Official Announcement that the Jurors have awarded them both

A GOLD MEDAL
AND
A SILVER MEDAL
FOR THE
EXHAUSTIVE COLLECTION
OF
SEEDS, GRASSES, MODELS, &c.,
EXHIBITED BY THEM AT THE
GREAT PARIS INTERNATIONAL EXHIBITION,
1878.

SUTTON & SONS,
THE QUEEN'S SEEDSMEN,
And by Special Warrant
SEEDSMEN to the PRINCE of WALES,
READING, LONDON, and PARIS.

FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.
CATALOGUES on application.
The Lawson Seed and Nursery Company (Limited) Edinburgh.

HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application.
CRANSTON AND CO., King's Acre Nurseries, Hereford.

BOX EDGING.—10,000 nursery yards, very superior, at £9 10s. per 1000.
J. B. YOUNG, Landscape Gardener, Bridge of Allan.

STRAWBERRY PLANTS, extra strong and true to name, twelve leading sorts. Price List and Sample Box of Twenty Plants (four sorts), post-free for twelve stamps. C. POCOCK, Nursery, Wincanton.

Cabbage Plants—Cabbage Plants.
W. VIRGO, Wonersh Nursery, Guildford, can now supply in any quantity the following good, strong, healthy, autumn grown Plants:—Early Battersea, Early Enfield Market, Early Nonpariel, and Robinson's Drumhead, at 3s. per 1000; Red Pickling, 5s. per 1000.
LETTUCE—Brown Cos and Admiral, 5s. per 1000.
Reference required from unknown correspondents.

New Catalogue.
MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for Covers, PLANTS for Winter Bedding,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
Milford, near Godalming, Surrey.

NEW AND RARE LILIES.
LILIUM NEILGHERRENSE. This splendid Lily gives flowers nearly 1 foot long. 7s. 6d.
LILIUM COLUMBIANUM, extremely rare, 7s. 6d.
LILIUM BATEMANÆ, quite new, 7s. 6d.
LILIUM JAPONICUM KRAMERI, 5s.
Selections of choice kinds can be made by Mr. WILLIAM BULL, at 30s., 42s. and 60s. per dozen.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

WEBB'S PRIZE COB FILBERTS and other NUTS.—Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to
THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS and OTHER SPRING PLANTS.—Early orders are solicited for the above choice plants. Apply to
THE MANAGER, Calcot Gardens, Reading.

SCHIZOSTYLIS COCCINEA.—Very strong clumps, really fine, would fill 9 or 10-inch pots, now coming into full bloom, 9s. per dozen, 60s. per 100.
RODGER McCLELLAND AND CO., Newry.

WELLINGTONIA GIGANTEA. — For Sale, about 400 well grown trees, from 3 to 5 feet high.
C. W. LISTER KAYE, Osberton, Worksop.

PRIMROSES.—For Sale, 500 dozen Double White, at 10s. per 100. Good roots. A remittance must accompany all orders.
DAVID MILLS, Strand-on-the-Green, Chiswick.

WINTER-FLOWERING CARNATIONS. Six best varieties for winter-blooming, well-rooted in pots, just showing buds, 8s. per dozen; fine large plants, in 48-size pots, set with buds, 16s. per dozen.
R. MOSLEY, The Nursery, Saxmundham, Suffolk.

PEAR STOCKS, transplanted, 1 to 2½ feet, very strong, clean and healthy. Sample and price on application.
RODGER McCLELLAND AND CO., Newry.

Fruit Trees, Forest Trees, Ornamental Trees and SHRUBS, ROSES, and other NURSERY STOCK.
WOOD AND INGRAM'S abridged TRADE LIST for 1878 is now ready, and will be forwarded (to the Trade only) free on application.
The Nurseries, Huntingdon.

SUTTON'S MAGNUM BONUM POTATO —Seed direct from the Raiser. True and good sample. £9 per ton, or 14s. 6d. per sack (of 168 lb.), sacks inclusive, delivered on Rail at this Station. Terms cash with order (or satisfactory reference. Cheques crossed "Wilts and Dorset," Post-office Orders payable to
H. T. BATH, Nurseryman and Seedsman, Lymington, Hants.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

To the Trade.
DOWNIE AND LAIRD have to offer choice fancy and show PANSY SEED; also VIOLA, MIMULUS, COWSLIP, POLYANTHUS, AURICULA, DELPHINIUM, and PRIMULA JAPONICA; all grown under their own supervision. Prices to the Trade on application.
DOWNIE AND LAIRD, Nurserymen, Seedsmen and Florists, 17, Frederick Street, Edinburgh.

SPECIAL OFFER. — A quantity of Oak, Elm, Chestnut, Poplar, Birch, Lime, Ash, Sycamore, &c., 12 to 20 feet, straight stems and good heads; Standard Portugal Laurels, 4 to 6 feet stems, splendid heads; Pinus austriaca, Cembra, excelsa, and Strobus, Cedrus Deodara and atlantica, Wellingtonia, &c., 5 to 9 feet, splendid specimens. Put on Midland or G. W. Railway. Prices and Catalogue on application.
J. PRICE, Stanley Nursery, Stonehouse, Gloucestershire.

Florists' Flowers, Roses, and Climbers.
THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

Vines—Vines—Vines.
W. G. CALDWELL AND SONS beg to inform their Friends and Customers that their stock of the above is unusually fine this season. Samples have been exhibited at various Shows in the North of England, and they have been highly commended for their excellent quality.
Orders are now being booked for the following varieties:—

Black Hamburgh	Foster's Seedling
Black Alicante	Lady Downe's
Buckland Sweetwater	Madresfield Court
Duke of Buccleuch	Muscat of Alexandria.

Strong Planting Canes, 5s. to 7s. 6d. each.
Extra Fruiting Canes, 7s. 6d. to 10s. 6d. each
The Nurseries, Knutsford, Cheshire.

CHOICE ORCHIDS.—Many thousands of good plants to select from Mr. WILLIAM BULL is constantly receiving large importations from his Collectors and Correspondents in Assam, Colombia, Burmah, Brazil, Mexico, Costa Rica, Venezuela, Ecuador, West Indies, and the Eastern Archipelago, and can offer many of the rarest and most beautiful kinds at extremely low prices. Customers can choose their plants from eleven large houses full of Orchids. An inspection is invited.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
,, PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s ; and 20s. per 100. Extra large clumps at moderate prices.
ROSE QUEEN OF BEDDERS,
Booked for autumn, 12s. per dozen, 75s. per 100.
CHARLES NOBLE, Bagshot.

Notice to the Trade.

W. G. CALDWELL AND SONS are now sending out their well-known AZALEA AMŒNA CALDWELLI, strong plants, 18s. per dozen ; larger size, 24s. Also splendid plants of GLEICHENIA DICHOTOMA, at 3s. 6d. and 5s each, 36s and 50s. per dozen.
The Nurseries, Knutsford, Cheshire.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 9s. per dozen.
POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz. ; smaller plants, 6s. per doz.
BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen ; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.
ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.
PRIMULA, ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 9s. and 12s. per dozen.
ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s. per dozen, £4 per 100 ; smaller plants, in 2½-inch pots, 50s. per 100.
MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen — offered to make room for smaller stuff.
PTERIS SCABERULA, good plants, 12s. per dozen.
ADIANTUM FARLEYENSE, 2000 fine plants, in 4-inch pots, 24s. per dozen ; ditto, in 3-inch, 18s. per dozen.
PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.
CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.
GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.
CYCLAMEN PERSICUM, fine strain, 12s. per dozen.
GENISTAS, splendid stuff, 5½ inch pots, 50s. per 100 ; ditto, in 4-inch pots, 30s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

Potatos for Planting.

JOHN AND GEORGE MCHATTIE, SEED MERCHANTS, Chester, have this season grown large quantities of the undermentioned kinds from carefully picked stocks, which they will shortly be able to offer at very moderate prices, or special quotations will be given now for immediate delivery :—
MYATT'S PROLIFIC.
MAGNUM BONUM.
OLD FLUKE.
HUNDREDFOLD FLUKE.
YORKSHIRE KIDNEY.
OXFORDSHIRE KIDNEY.
GLOUCESTERSHIRE KIDNEY.
EARLY ROSE.
LATE ROSE.
SNOWFLAKE.
FORTYFOLD.
PATERSON'S VICTORIA.
EARLY WHITE DON.
CHAMPION DON.
And nearly all the new English and American varieties of merit.
A Descriptive CATALOGUE will be published shortly.

THIRTY THOUSAND CAMELLIAS, alba plena and other best sorts, all home-grown, well set with bud and very forward. Also many thousand AZALEA INDICA, best sorts, well set for bloom ; and hard-wooded HEATHS, half and quarter inch specimens, fine healthy and well-formed plants. For price and particulars, see *Gardeners' Chronicle* of September 21, 1878.
B. WHITHAM, The Nurseries, Reddish, near Stockport, has the above unequalled collection on Sale.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families ; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c. ; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers AZALEA INDICA of all sizes, AZALEA MOLLIS and A. PONTICA, CAMELLIAS, CHRISTMAS ROSES, DEUTZIA GRACILIS, DIELYTRA SPECTABILIS, LILY of the VALLEY, SPIRÆA JAPONICA, PALMS for Table use, DRACÆNAS, FERNS, and YUCCA VARIEGATA. Catalogues free on application.

Mushroom Spawn.

OSBORN AND SONS call the attention of Mushroom Growers to the speciality they make of the above. Their Spawn never fails to give satisfaction. For testimonials see Catalogue of Bulbs, which will be forwarded on application.
Price 5s. per bushel. Trade price on application.
The Fulham Nurseries, London, S.W.

STRAWBERRY DUKE of EDINBURGH (Moffat).—Strong well-rooted runners of this famous variety from the original Stock, the best for general crop and marketing, 7s. 6d. per 100 ; 12 plants post-free for 2s.
TODD AND CO., Seedsmen, Maitland Street, Edinburgh.

FERNS advertised by "E." last week for SALE, 28s. ; also three ornamental-leaved BEGONIAS, two large CYCLAMENS, 7s. 6d. ; the lot 35s.
R. ERRINGTON, Scotby Farm, near Carlisle.

A. RIEMSCHNEIDER, Brandenburg-on-Havel, Germany, has to offer :—
HELLEBORUS NIGER, strongest clumps, 90s. per 1000.
GERMAN LILY OF THE VALLEY, for forcing, 37s. per 1000.

To the Trade.

ROSES. — Standard and Half-Standard, extra fine. Low quotation with Purchasers selection.
MARECHAL NIEL, in pots, very fine, 75s. per 100 ; second size, 65s. per 100.
LIST of varieties on application.
GEORGE COOLING, Nurseryman, Bath.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

EUCALYPTUS GLOBULUS,
Tasmanian Blue Gum, Evergreen.
A Disease Destroying Tree.
Destroys the influence of the miasmatic exhalations from the ground in swampy and malarious districts, acts as a preventive of the miasmata which produces intermittent fever, ague, &c. See *Times*, September 5, 1877.
Seeds, 1s. per packet. Plants, 1s. and 2s. each.
J. STEELE, Chelmsford.

For Immediate Disposal.

SPECIMEN STOVE and GREENHOUSE PLANTS.
WM. MILES has for disposal some splendid specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Tree and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to
WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

Special Offer to the Trade.

ASH, 1-yr. seedlings, 2s. per 1000 ; 1-yr. transplanted, 1 foot, 5s. per 1000. BEECH, 1-yr. seedlings, 2s. 6d. per 1000. CHESTNUTS, Spanish, 1-yr. drilled, 6s. per 1000. OAK, English, 1-yr. drilled, 3s. per 1000. SPRUCE FIR, 2-yr., fine, 2s. 6d. per 1000 ; do., 2-yr. transplanted, fine, 5s. per 1000 ; do., 3-yr. transplanted, 12 to 15 inches, 8s. per 1000. PINUS LARICIO, 1-yr., 1-yr. transplanted, 7s. 6d. per 1000. Cheaper by the 100,000. ARALIA SIEBOLDII, extra fine, bushy, pots 6-inch, 20s. per 100.
GARLIES MITCHELL, Nurseries, Stranraer.

In Liquidation.

WILLIAM ROLLISSON AND SONS,
The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d. ; Planting, 2s. 6d. to 5s.

LAND SOLD for BUILDING.
40,000 LARCH, strong transplanted, 3 to 5 feet.
20,000 PRIVET, extra strong transplanted.
10,000 APPLE and PEAR TREES, Standard.
300 000 QUICKS, Seedling, 2 and 3-yr. old.
500,000 CABBAGE PLANTS, Nonpareil, 3s. 6d. per 1000.
2 000 RHUBARB ROOTS, Myatt's Victoria (very cheap)
Apply to GEO. WINFIELD, Sandhurst Road, Gloucester.

CLEMATIS.—Jackmanni, rubro-violacea, Miss Bateman, Lucy Lemoine, Gem, and others, very strong,
50s per 100, £20 per 1000.
RICHARD MASON,
Windlesham Nursery, Bagshot, Surrey.

PETER DE COCK AND COLLUMBIEN, The White Flower Nurseries, Meirelbeke, near Ghent, Belgium, offer to the Trade :—
SPIRÆA JAPONICA, £5 per 1000.
CHRISTMAS ROSES, £6 per 1000.
AZALEA INDICA, in bud, £4 and £5 per 100.
CAMELLIAS, in bud, £6 and £7 per 100.

New Strawberry, Duke of Athole.

MESSRS. DICKSON AND TURNBULL have much pleasure in offering the above first-class Strawberry, equally good for Dessert or Exhibition. Plants now ready. £3 per 100, 10s. per dozen.
All Orders executed in strict rotation.—Descriptive Circular forwarded on application.
Perth, October 8.

TRANSPLANTED FOREST TREES.—
2,000,000 LARCH, 1 to 3 feet.
2,000,000 SCOTCH, 1 to 3½ feet.
1,000,000 AUSTRIANS, ¾ to 2 feet.
500,000 SPRUCE, ¾ to 2½ feet.
Other Trees in smaller lots, all beyoud two years twice removed, robust, and finely rooted.
CATALOGUES, with special offer for large quantities delivered free at any Railway Station south of Dublin.
R. HARTLAND, The Lough Nurseries, Cork.

RICHARD WALKER, Market Gardens, Biggleswade, can still supply any quantity of the best CABBAGE PLANTS in England : Red Dutch Pickling Plants, 4s. per 1000, and all sorts of Green Plants, 2s. per 1000. Connover's Colossal ASPARAGUS, good plants, 3-yr. old, 2s. per 100, or 15s. per 1000 ; 1-yr. old, 5s. per 1000. SEAKALE for forcing, 8s. per 100. Best Sovereign RHUBARB ROOTS, large clumps, 6s. per dozen for forcing. LEMON THYME, 8s. per 100 for planting. SAGE, for planting, 3s. per 100. Dark WALLFLOWER and dark SWEET WILLIAM, for planting, 1s. 6d. per 100. Terms Cash.

NEW RACE of BEGONIAS.—Hybrids of B. discolor crossed with B. Rex. These fine hybrids combine the habit of growth, flowers, and hardiness in the open air of B. discolor, with the highly ornamental foliage of the hothouse varieties of the family of Begonia Rex. They were awarded a First Prize at the International Exhibition held at Versailles in August, 1878, and a similar honour at the Autumnal Horticultural Exhibition at Bordeaux in September, 1877. First offered for sale in October, 1878, at the following prices :—
8 distinct named varieties, 70 francs, or £2 16s.
9 plants of each variety for 125 francs, or £5 ; by
G. BRUANT, Horticulturist, Poitiers, France, who will also send CATALOGUE with full details of these plants free by post to any address on receipt of application prepaid by post.

New Picotees.

BENJ. SIMONITE is prepared to send out the following first-class PICOTEES :—
Teresa, light rose edge, very smooth petal, edge solid white, pure, extra fine, 10s. 6d. per pair.
Violet Douglas, light red-edge, petal very broad, solid wire edge, white, pure, without bar, extra fine, 10s. 6d. per pair.
BENJ. SIMONITE, Rough Bank, Sheffield.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

SEAKALE for Forcing.—Many Acres for sale of excellent large roots that cannot be surpassed, price 90s per 1000, and 2s. packing ; 500 and under 10s. per 100 and 1s. packing. ASPARAGUS of all ages, and RHUBARB of all varieties, HERBS, &c. Price on application.
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W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the following Plants, Trees, &c., in fine condition, growne specially for the Trade, have much pleasure in offering them at the following low prices :—
AURICULAS, finest mixed alpine, in 60-pots, 16s. per 100
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DAISY, aucubæfolia, golden netted foliage, 5s. per 100, 40s. per 1000
,, Crown, fine, 4s. per 100, 30s. per 1000
,, Rob Roy, fine, dark red, 4s. per 100, 30s. per 1000
,, The Bride, finest white, 5s. per 100, 40s. per 1000
MENTHA PULEGIUM, 2-yr., 15s. per 1000
MYOSOTIS DISSITIFLORA, 6s. per 100, 50s. per 1000
PANSY, Cliveden Blue, 8s. per 100, 65s. per 1000
,, Blue King, 8s. per 100, 65s. per 1000
,, Dean's White, 8s. per 100, 65s. per 1000
,, Yellow Bedder, 8s. per 100, 65s. per 1000
PINKS, in 25 named varieties, 20s. per 100
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ROCKETS, double Purple, 12s. per 100
,, White, 10s. per 100
THYMUS, citriodora aurea marginatus, 4s. per 100, 30s. per 1000
WALLFLOWER, True Harbinger, 3s. per 100, 25s. per 1000
,, Golden Tom Thumb, 2s. 6d. per 100, 10s. per 1000
ALDER, 3 to 5 feet, very fine, 25s. per 1000
ASH, common, 3 to 5 feet, very fine, 30s. per 1000
,, 2 to 3½ feet, very fine, 22s. 6d. per 1000
HORNBEAM, 2 to 3 feet, 20s. per 1000
PRIVET, 1½ to 2 feet, bushy, 12s. per 1000
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, 70s. to 75s. per 100
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APPLES, fine Standards, in variety, 60s. per 100
PEARS, fine Standards, in variety, 75s. per 100

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IN STOCK.

128 AND 129, HIGH HOLBORN, W.C.

ONCIDIUM MACRANTHUM, in perfect health.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, October 22, at half-past 12 o'Clock precisely, a fine importation of ONCIDIUM MACRANTHUM, the most beautiful Oncidium, just to hand per *Moselle*, and in perfect health; also a magnificent lot of the beautiful Golden ODONTOGLOSSUM PARDINUM, a few with flower-spikes, MASDEVALLIA BELLA, ODONTOGLOSSUM BOGOTENSIS, a quantity of Cool ORCHIDS in flower, extra fine plants of ODONTOGLOSSUM ROEZLII, and imported pieces of O. HALLII; also a Collection of ESTABLISHED ORCHIDS from a well-known Grower, including fine healthy plants of rare and beautiful varieties; a quantity of established plants of CATTLEYA SCHILLERIANA, C. MARGINATA, ONCIDIUM CRISPUM, &c.; some good plants of COCOS WEDDELLIANA and other PALMS, BULBS from Jersey and Algiers. *On view morning of Sale, and Catalogues had.*

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

NANODES MEDUSÆ, MAXILLARIA LEHMANNI, ODONTOGLOSSUM ROSEUM, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 24, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., IMPORTED ORCHIDS, just received by the Royal Mail Steamer *Moselle*, consisting of several hundreds of ODONTOGLOSSUM CIRRHOSUM, several hundreds of O. ROSEUM, fine plants in quantity of O. HALLII, MAXILLARIA LEHMANNI, TRICHOPILIA (PILUMNA) FRAGRANS, NANODES MEDUSÆ. At the same time will be offered 100 ODONTOGLOSSUM VEXILLARIUM starting into growth, 100 growing plants of O. ALEXANDRÆ, established plants of PHALÆNOPSIS SCHILLERIANA, ODONTOGLOSSUM ROEZLII. AERIDES LOBBII, DENDROBIUM BENSONIÆ, CATTLEYA DOWIANA, ONCIDIUM VARICOSUM, &c. *On view morning of Sale, and Catalogues had.*

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

PYRUS MAULEI.

MR. J. C. STEVENS has received instructions from Messrs. MAULE & SONS, of Bristol, to offer for SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 24, 1000 Plants of this beautiful NEW FRUIT, in Lots to suit both the Trade and Private Buyers. Recently exhibited at South Kensington, and much admired.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

To Amateur Strawberry Growers.

RUNNERS, strong and well rooted, are now ready, from H. de Thury, President, Sir J. Paxton, and British Queen—four of the best varieties in cultivation. Price List on application. Sample Box of Plants, post-free, 1s. Manual on Strawberry Culture, 6d.
W. LOVELL, Strawberry Grower, Weaverthorpe, York.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

HARDY AZALEA MOLLIS, one of the finest and handsomest flowering plants for forming Clumps and Masses, in ten named varieties, well budded, £6 to £8 per 100; stronger plants, 2s. to 2s. 6d. each.
HARDY GHENT AZALEAS, twenty-five of the best varieties, covered with buds, £5, £6, to £8 per 100; stronger plants, 2s. to 2s. 6d. each.
J. APERS, Nurseryman, Loochristy, near Ghent, Belgium. Agents in London: Messrs. R. SILBERRAD AND SON, 15, Harp Lane, E.C.

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MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF-TRAINED PEARS.
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STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
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SIMPLY AN ANNOUNCEMENT.

BULBS.—BULBS.

H. CANNELL (F.R.H.S.) begs to announce that his LIST of the above is ready, and the fact of his having tested the whole family of Dutch Bulbs, and devoting two 100-feet houses last season entirely to their culture, enables him to offer the briefest, best, and cheapest List of Hyacinths and Tulips ever sent out, and the same with Bedding and Forcing kinds. These, together with his Stock (largest in England) of Winter and Spring Bedding Plants, offer unusual advantages to purchasers to attain success. Sent post-free.

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Strawberries.

FROM the fact of my being located in the midst of hundreds of acres of all the best and most profitable kinds, I am enabled to offer unusually fine Plants and perfectly true to name. All those who wish to grow for gain should have the Kentish well-known varieties. Having them from a distance, together with change of soil, is the very secret of success.
CATALOGUES with valuable information post free.
H. CANNELL, Swanley, Kent.

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NEW COLEUS, totally distinct from all others ever yet sent out, and will add an additional charm to every greenhouse. Their many colours are very vivid and attractive.
G. BUNYARD.
KENTISH FIRE.
LORD FALMOUTH.
Post-free, 1s. each, the three for 2s. 6d.

THE FINEST NEW ZONALS OF THE SEASON.—WHITE VESUVIUS, by far the best white for winter, 2s. each, 18s. per dozen.
SALMON ditto, splendid both winter and summer, 1s 6d. each, 12s. per dozen.
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DR. J. DENNY, positively blue, 2s. each, 18s. per dozen.
GUINEA, splendid colour, totally eclipsing Jealousy, decidedly yellow. This and Dr. Denny, grand pot plants both summer and winter, 1s. each.
Good plants of all the above, five for 10s., package free. Cuttings half price, post-free.

H. CANNELL'S named Collection of CINERARIAS now just ready for shifting into 5-inch pots (see Guide). Will send twelve splendid kinds for 7s. This would add a superior feature to any conservatory throughout the spring.

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H. CANNELL will send the best twenty-four varieties in cultivation for 18s., twelve for 10s., package free. They should be potted-up at once to give a blaze of bloom for Christmas. Cuttings at half above price, post-free.

WINTER-FLOWERING TROPÆOLUMS.—Perhaps there is nothing so cheap to purchase and to grow and to give such an abundance of flowers all the winter as the above. Six best for 4s. small, by post, 3s. 6d., free.

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MANSION HOUSE BUILDINGS,

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FOR GROWING IN GLASSES, POTS, VASES, &c.
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☞ *These Collections contain a liberal assortment of the finest varieties in cultivation.*

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HYACINTHS, extra choice selected	12*s.* to	21 0
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,, Mixed, Red, White, or Blue ..		3 6
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	Per 1000.	Per 100.
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SINGLE or DOUBLE.

100	Extra Selected, in 25 varieties	16	0
50	,, ,, 10	7	6
25	,, ,, 8	4	0
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FOR
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100 Hyacinths, in 100 very choice sorts	£4	4 0
100 Hyacinths, in 50 very choice sorts	3	10 0
50 Hyacinths, in 50 very choice sorts	2	2 0
50 Hyacinths, in 25 very choice sorts	1	15 0
25 Hyacinths, in 25 very choice sorts	1	1 0
12 Hyacinths, in 12 extra fine sorts	0	12 0
12 Hyacinths, in 12 choice sorts	0	9 0
12 Hyacinths, in 12 good sorts	0	6 0

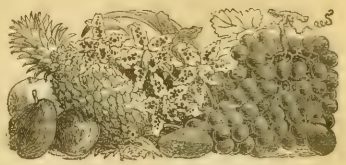
The order should specify whether they are intended to be grown in water or earth, as all kinds are not equally suited to both purposes. It should also be stated whether single or double-blossomed sorts are preferred. The single varieties generally thrive best in water, but their merits are never apparent until the flowers are fully expanded.

"I congratulate you on the very superior quality of your bulbs. 100 Hyacinths purchased of you are a grand lot, remarkable both for enormous size and great variety of colour."—Mr. T. Sillence, Jun., *The Gardens, Roche Court.*

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How to Grow Flower Roots successfully.
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HYACINTHS, TULIPS, CROCUS, LILIES, NARCISSUS, &c.,
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THE QUEEN'S SEEDSMEN, READING.



SATURDAY, OCTOBER 19, 1878.

PETWORTH HOUSE.

THE present is naturally more engaging than the past to the living generation, and some persons who visit the Wealden town of Petworth may not be aware of the connection which existed for many centuries between Petworth and the Percies. Hotspur's father, however, owned Petworth Park, and his widow, quitting the turbulent North, married Lord Camoys, of Trotton, near Petworth, and lies now in a "magnificent table tomb, with canopied brasses," on the banks of the Western Rother, the prettiest stream in Sussex.

At Petworth you are in a town of much antiquity; not that the houses are as old as the Percies, but the streets are older. The place was a Saxon "worth," or estate. It was bequeathed by Henry I. to his queen, Alice of Loraine (Adeliza), who married the Earl of Arundel after conveying Petworth to her brother, Josceline de Louvaine (A.D. 1140), who took the name of Percy on his marriage with the heiress of that family.

Except the Percy dust entombed in Petworth church and the emblazoned monuments, there are few memorials of the Percies left where they were once all-powerful. There is one, however, in the sign of the "Half-moon," the principal inn, borrowed from the Percy badge of the crescent. The great house and little town are divided only by a wall, and a door opens a direct communication between the churchyard and some of the apartments. The ground here is high, and the pretty spire, when seen from the park, looks like an ornament of the house, which completely hides the edifice behind it.

The Percy annals, though by no means tiresome, are too long for the present narrative; but perhaps I may dip so far into history as to relate the short story of the "Cecil Oak." This interesting memorial of a critical period in the family history stands on a broad expanse in front of the kennel. All around this spot the park is tumbled about in little hills of various form, but the Cecil Oak stands on comparatively level ground, thinly planted and pleasurably surrounded by the higher ground. From among the Chestnuts on Lawn Hill you have an exceedingly pretty view of the park and the Surrey hills beyond; and on the level ground around the Oak you will probably see, besides deer, some hounds and horses exercising.

About eighty couple of hounds are kept here, and thirty-five horses to hunt the pack four days a week. The habits of men have very much improved since the time of Hotspur. His amusement was the slaughter of his neighbours across the border; Lord Leconfield, his descendant, the noble Master of the Petworth Hounds, follows, and I daresay does not invariably kill the fox—a little beast who owes his preservation to the social and healthy amusement to which he is a party.

Numerous deer were scattered, as usual at this time of year, over the wide park, beneath the Oaks and Beeches, on the brows and sides of its little hills. The hounds paid no attention to them. Neither the uplifted heads, nor upset, wagging tails, seemed in the least conscious of the presence of the deer. What a surprising as well as cheerful scene this is! What an in-

teresting train of thoughts it fires—thoughts of old and modern times and pastimes, from Hotspur till to-day. And what a wide, delightful landscape!

But I am wandering from my subject, like the fowls who were asked how they would be cooked. "We would rather not be killed," they said. The "Cecil Oak" was planted during the reign of the last Earl of Northumberland but one. The Earls had been unfortunate. Our virtuous Henry the Eighth had abjured Romanism, and the Earls had not all of them followed his example. One was shot in the Tower with a "dag or pistol" by somebody. There were two stories; within the walls the official story ran that he shot himself—people outside gave credence to another version. His son was the "Wizard Earl," who was imprisoned in the Tower during fifteen years, under the unjust suspicion of complicity in the Gunpowder Plot. His two charming children, a boy and girl, were the favourites of all who had access to them within the grim fortress of the Tower. They grew up, and spread the wings of youth. She loved a Sydney, he a Cecil. The Wizard Earl, a man of contrarieties and many virtues, with pride embittered by imprisonment, passed some tempestuous days on this occasion. The blood of the Cecils and Percies would not mix, he said, though poured into a ditch together. He sent word to Sydney that his daughter should bring him no dowry. The young people answered the threat by immediate marriage. Lady Anne Cecil, too, became a bride, and planted the Oak in Petworth park as a memorial of the marriage. A touching incident lends additional interest to this tree and story. King James, out of respect to the family of Cecil, attended the wedding, and with true economy as a Scotchman he presented the bride with a piece of paper as a wedding present. This proved to be a pardon for the Wizard Earl, who retired to Petworth and lived there in scholarly retirement, delighting in the new art of gardening which wealth and Lord Bacon had introduced, and in the cultivation of flowers.

Recollections such as these shed a kind of perfume over Petworth, which most persons find agreeable. There is not a trace of the gardening of the Wizard Earl remaining, but some of the Chestnuts around the cricket-ground may have been planted by him. His grandson, the eleventh and last Earl, died in 1670, leaving his only child, Elizabeth, Baroness Percy, the sole heiress of his estates and name. This was one of those great calamities to which all landowners are liable, as Sir Bernard Burke informs us in the *Vicissitudes of Families*. The Lady Elizabeth, however, married the "proud" Duke of Somerset, and brought him thirteen children. He lived at Petworth in much state, a nobleman of great splendour and many noble qualities. Pride was his infirmity, and his fox-hounds were a freak which failed to accomplish what he desired, which was to oust the master of the neighbouring Charlton pack, which occasionally crossed his park and came betwixt the wind and his nobility. His son was created (before the "proud" Duke's death) Earl of Northumberland, with remainder to Sir Hugh Smythson, the husband of his only daughter. He was also created Earl of Egremont with remainder to Sir Charles Wyndham, son of the great statesman—

> "Wyndham, just to freedom and the throne,
> The master of our passions and his own"—

who had married Catherine, one of the thirteen Seymours, olive branches of the "proud" Duke, one of whom he "cut off" with £20,000, or some other small trifle, because she fell asleep during her father's afternoon *siesta*, when he always kept a daughter or two waiting round his chair.

The greatest of very many generations of the owners of Petworth—Hotspurs and Wizards notwithstanding—was one of the reigning house of Wyndham, the third Earl of Egremont, a grand agriculturist, friend of John Ellman and Arthur Young, and patron of the arts and of several young artists who studied here in his famous galleries. He died in 1837, aged eighty-five, and his grandson, the present Lord Leconfield, reigns in his stead. Having inherited his ancestor's agricultural tastes, he farms on an extensive scale, and, residing himself in the largest and most magnificent of houses, he has been careful to erect for the cottagers of his estate houses of a superior kind. *H. E.*

(*To be continued.*)

New Garden Plants.

Hæmanthus (Diacles) Arnottii, *Baker, n. sp.**

A near ally of H. albiflos, Jacq., from which it differs by its small flowers and nearly round leaves. It was sent by Mr. Arnott from the province of Colesberg to the Kew collection, where it produced flowers this present year in June, the leaves not being developed fully till September.

Bulb large, compressed, with thick green truncate outer tunics. Leaves two, produced after the flowers, spreading, round-oblong, 4—5 inches long, 3—4 inches broad, fleshy, very obtuse, dull green on the face, very pale green on the back, glabrous except at and near the edge, where they are furnished with long, soft, whitish hairs. Peduncle 3—4 inches long, green tinged with purple, rather compressed, not spotted. Bracts about six in number, overtopping the head of flowers, permanently erect and imbricated, oblong, whitish with conspicuous green veining, 1¼—1½ inch long. Pedicels ½—¾ inch. Ovary green, globose, 1-12th inch long. Perianth white, ⅜ inch long, the erecto-patent segments a little exceeding the cylindrical tube. Filaments white, erecto-patent, much exserted, ½ inch long, Anthers small, oblong, bright yellow. Style a little overtopping the filaments. *J. G. B.*

Eucomis amaryllidifolia, *Baker, n. sp.*†

A native of the eastern district of Cape Colony, sent by Mr. MacOwan to the Kew collection, where it flowered in the August of this present year. It comes near E. undulata, Ait., *Bot. Mag.*, t. 1083, from which it differs by its narrow Amaryllis-like leaves, not at all crisped at the edge, and subspicate inflorescence.

Bulb ovoid, 1½—2 inches in diameter. Leaves 5—6, contemporary with the flowers, suberect, fleshy in texture, lorate-lingulate, 12—15 inches long, 15—16 lines broad two-thirds of the way up, narrowed gradually to the base, obtuse, quite unspotted upon either back or face, channelled down the face in the lower half. Scape under 1 foot long, cylindrical, terete, ½ inch in diameter, unspotted. Raceme oblong, dense, 2—3 inches long, 1½ inch in diameter, furnished with a coma of 15—20 oblong leaves, 1—1¼ inch long, with a crisped cartilaginous margin; pedicels very short. Perianth green, ½ inch long; segments oblong. Filaments green, perigynous, two-thirds as long as the perianth segments. Ovary oblong, pale yellow, with a white style as long as itself. *J. G. B.*

Eucomis bicolor, *Baker, n. sp.*‡

This, with its purple-margined perianth-segments and coma-leaves, is a handsome, robust-growing Eucomis, closely allied to undulata, discovered by Mr. Christopher Mudd in his recent journey through Natal. The bulbs were sent by him to Messrs. Veitch, with whom they flowered in August of this present year.

Bulb globose, about a couple of inches in diameter, with copious fleshy root-fibres. Leaves five or six, contemporary with the flowers, suberect, oblong, unspotted, a foot long, 3—4 inches broad at the middle, crisped towards the edge. Scape a little shorter than the leaves, terete, unspotted, ½ inch in diameter. Raceme dense, oblong, 3—4 inches long, above 2 inches in diameter, with a coma of 20—30 congested oblong leaves, with purple crisped edges; bracts lanceolate; lower pedicels ⅝ inch long, upper shorter. Perianth ⅝ inch long; segments oblong, pale green, with a sharp purple edge. Filaments deltoid, dark purple, half as long as the perianth-segments; anthers minute, oblong, greenish. Ovary oblong, green; style dark purple, half as long as the ovary. *J. G. B.*

Agave paucifolia, *Baker, in Gard. Chron.* 1878, p. 266.

I find that Professor Todaro, in *Hort. Bot. Panorm*, t. 19, published in August, 1877, has already used this specific name, so I wish to change mine to *oligophylla*. *J. G. Baker.*

* *Hæmanthus* (*Diacles*) *Arnottii*, Baker, n. sp.—Bulbo magno compresso, tunicis crassis viridibus truncatis; foliis 2 post scapum productis rotundis patulis viridibus immaculatis facie glabris, margine pilosis; scapo brevi immaculato; bracteis erectis oblongis diu imbricatis capitulo longioribus albidis venis viridibus percursis; pedicellis flore subæquilongis; perianthio parvo albo segmentis tubo paulo longioribus; genitalibus distincte exsertis.

† *Eucomis amaryllidifolia*, Baker, n. sp.—Bulbo ovoideo, foliis 5—6 synanthiis suberectis anguste lingulatis pedalibus immaculatis margine planis, scapo cylindrico immaculato foliis breviore, racemo denso oblongo pedicellis brevissimis, comæ foliis 15—20 oblongis margine cartilagineis crispatis, perianthio viridi semipollicari segmentis oblongis, staminibus perianthio triente brevioribus.

‡ *Eucomis bicolor*, Baker, n. sp.—Bulbo magno subgloboso, foliis 5—6 synanthiis oblongis pedalibus immaculatis margine crispatis, scapo cylindrico immaculato foliis paulo brevioribus, racemo denso oblongo, pedicellis productis, comæ foliis 15—20 oblongis crispatis purpureo marginatis, perianthii semipollicaris segmentis viridibus purpureo marginatis, filamentis deltoideis purpureis perianthio duplo brevioribus, stylo purpureo.

CHRYSANTHEMUM ULIGINOSUM.

(Pyrethrum serotinum of Gardens.)

This is one of the finest tall-growing white flowered herbaceous plants flowering in late autumn. Stems erect, 4 to 6 feet, cylindrical, ribbed; leaves sessile, 3 inches by ½ an inch and upwards, lanceolate, coarsely toothed, rough on the upper surface, smooth and paler beneath; veins prominent, especially on the lower surface; flower-heads terminal, solitary, often 3½ inches in diameter, flattish; involucre of numerous appressed, oblong, obtuse green scales edged with a brown membranous margin, less than half the length of the pure white spreading strap-shaped ray florets; disc rather flat, yellowish. This plant (fig. 87) is a native of Hungary, and is worthy a place in every herbaceous border. It is very like in general aspect Chrysanthemum lacustre, a Portuguese plant known in some gardens as Aster leucanthemus, or Chrysanthemum maximum, but which latter is a shorter growing plant with thick fleshy leaves more finely toothed than in the preceding, and with the veins obscure. It is a near ally of the Ox-eye Daisy of our fields.

BRIDGE HALL, BURY, LANCASHIRE.

O. O. Wrigley, Esq., the owner of the gardens here, is an enthusiast in the culture of Orchids. His plants are well known as having obtained the highest positions in competition in Manchester, where Orchids are exhibited (since the great Whitsuntide shows have been established) much better than they are in London. Orchid fanciers will also remember that in May, 1876, a great exhibition of flowers and fruit was promoted by the proprietors of the Royal Aquarium, Westminster, and that Mr. Wrigley's Orchids occupied the highest position on that occasion in the building. When the great success obtained by Mr. Hubberstey is noticed, the extent of the collection should also be taken into account; it is larger than that of the late F. G. Wilkins, Esq., of Leyton, but I have seen several larger collections. It would serve no good purpose to describe in detail the size of the different houses; enough to say that they are not large, and my impressions previously formed were confirmed. The Orchids succeed best when the houses bear a reasonable proportion to the size of the plants. It is generally known amongst all good cultivators that Orchids succeed best in small houses; by small is to be understood not broad or elevated, the length is of no consequence. Mr. B. S. Williams in his excellent work says:—"I would advise all large Orchid-houses to be pulled down, and their places occupied with small ones." He further says:—"The structure should not be more than 10 or 11 feet high in the centre, 17 or 18 feet wide, and about 100 feet long." Except the house devoted to the larger specimens, none of the Orchid-houses here are so large as Mr. Williams advises.

The Masdevallias from the mountainous regions of New Grenada, Columbia, and Peru, Lycaste Skinneri from Guatemala, and other species and varieties such as Odontoglossums of the crispum and Pescatorei sections are cultivated in small houses. One of them, span-roofed, seems well-adapted for the purpose, and its adaptability is further increased by its running parallel with a west wall and sufficiently near to be considerably shaded by it. A small lean-to house also contained some excellent specimens. Like all successful cultivators, Mr. Hubberstey does not use large pots, in proportion to the size of the plants. Nearly all Orchid growers for exhibition act on this

principle, and do not grow the large specimens of such species as Cypripedium, Masdevallia, &c., in the large pots in which they are exhibited, but they grow a number of plants in 5, 6 or 7-inch pots, and before taking the plants to the exhibition the best are selected, carefully turned out of their pots, and as many as a dozen plants are potted into one large pot. This making-up of specimens may be carried too far, but in the case of Cypripediums at least a good specimen grown here, named M. Harryana sanguinea; it is distinct from the first-named sort, and is said to be quite as good. Yet another and very distinct form is M. Harryana cœrulescens; it is more of the M. Lindeni type, but is certainly superior in its clear rich magenta colour flushed with blue: the colour of M. Lindeni fades soon, but the other keeps its colour almost until the flower fades. Mr. Hubberstey has exhibited a variety of M. Harryana with 108 flowers, and the fine beautiful condition: it was not quite in flower, indeed it is a winter-flowering species, and on that account its pure white flowers are more valued.

The question then arises, what are the conditions under which the plants are grown to produce such excellent results? I noticed first that plenty of drainage is put in the pots, the compost is turfy peat, sphagnum, crocks, and charcoal, the last two broken into much smaller bits than is usual. There is suffi-



Fig. 87.—Chrysanthemum uliginosum. (see p. 492.)

cannot otherwise be produced. Besides the small plants grown there are other single specimens of Masdevallias here, which are second to none in the country.

I quite agree with Mr. Hubberstey in the belief that Masdevallia Harryana is the best species yet introduced, and of this there are several grand varieties at Bridge Hall. The "bull's-blood" variety of the collectors is very brilliant—it is intense crimson; the flowers and foliage are also of large size. This variety I believe flowered first in the celebrated collection at Meadowbank, Uddingstone, N.B. There is also another variety M. Harryana sanguinea with 50, and M. Lindeni with 130. M. Veitchii is a very splendid and distinct species, which was in flower at the time of my visit, September 27; some large specimens had many finely developed flowers. I was told that it did not remain constant; a very good variety would sometimes come of quite mediocre character: this has probably something to do with the time of flowering. My experience with M. Veitchii is that it flowers best from March to May; but if it flowers a second time, as it does in August or September, then the flowers are not nearly so good. M. tovarensis is grown here in cient atmospheric moisture without so much as to make the flowers spot and decay soon after they open. Live sphagnum is also placed on the surface, and it is kept alive by sprinkling with water. Then as to propagation, M. tovarensis is propagated as freely as I can propagate Auriculas. As soon as a leaf is formed it is cut off with the roots attached to its base; it speedily becomes established, and the plant, even if it has only two or three leaves, will break again at almost every leaf, the new breaks to be again taken off in the course of a few months. There is yet another observation to make before leaving the Mas-

devallias, and that is the mysterious disease which causes leaves of different ages to rot off; if only the oldest leaves were to suffer it would not matter so much, but the new growths fall victims to the fell destroyer as readily as those three or four years old. My own convictions are that it is not a disease, but that it is caused by the hot, close weather experienced about the end of summer. Mr. Hubberstey is also of this opinion. It this is so, abundant ventilation and judicious shading would obviate the danger to a certain extent.

Oncidium serratum is a rather pretty Peruvian species that was throwing up strong spikes in the cool house; they are 8 or 10 feet long, and two plants will form a cordon of flowers 20 feet in length. Passing from this house into the span-roofed house alluded to we find amongst other healthy plants a lot of Lycaste Skinneri in splendid health. Plants, large and small, are making most exuberant growths, in many cases two from one bulb. I measured leaves of these Lycastes, and found them a yard long and of proportionate width and substance. The temperature of these houses will be about 45 to 50 at night during the winter. In another house, where the temperature is 55° to 60°, grow the Odontoglossum vexillarium and O. Phalænopsis. The last-named has not done so well during the last few years as it did previously. I have found this in my own experience. Whether it is that the plants desire a change to another district I know not. If one or two plants out of many went wrong one might blame the culture, but when the whole of them get into an unhealthy condition with the treatment that has always been successful, it is hardly fair to blame the cultivator.

In the large span-roofed house devoted to the largest specimens are some wonderful productions. Here is the Anguloa Clowesii that gained the Veitch Memorial Medal at the last Whitsuntide exhibition at Manchester. The prize was given to the best Orchid in the show, to be selected from any of the classes. The plant had on it forty-four of its large golden flowers, and it has very much increased in vigour since. The bulbs are 9 inches long and very thick, the leaves are 3 feet in length and 9 inches across. This species of Anguloa has been grown here several times with two flowers on one stem. Anguloa eburnea is a splendid species, growing with great vigour; the bulbs are darker in colour than in the other, and the flowers are produced from them in greater numbers—on the largest plant grown here no less than fourteen of its waxy white flowers with pink spotted lips, from one bulb; and when such a large number of flowers as this is produced from one bulb two growths will break from it. Mr. Hubberstey has hit upon the right treatment for Anguloas, and yet the potting material and the method of potting is no way different from that of other growers—good fibrous peat, sphagnum and potsherds, with plenty of drainage. Calanthe veratrifolia is much esteemed, the specimens are very large and well grown; the potting material is mostly turfy loam with a little rotted manure added to it.

Mr. Hubberstey is also a master in the culture of specimen Ferns, and especially so in that of the genus Gleichenia, a genus of Ferns seldom seen in very good health. My own impression is that they are often subjected to too high a temperature. They do best in a greenhouse, but with rather less ventilation than is usual for such plants as Ericas, &c. It was a cold dull day when I visited Bridge Hall, and air was being freely admitted by the side lights. The potting material does not seem to be of vital importance either, as the old compost from the Orchid pots is sometimes used, and they are also potted in good turfy loam with the same success. There is so much difference in the character of loam—some of it being well adapted for Ferns, while in loam of another character they will not succeed—that I would advise using good fibrous peat and the pots half-filled with clean potsherds: under that treatment Gleichenias grow very freely with me. The largest specimen has grown almost too large to be moved to an exhibition again, it is about 7 feet high and as much across—truly a noble specimen of the Gleichenia Speluncæ. Mr. Hubberstey does not think that there is any difference between G. circinata glauca and G. Mendelii, of which there are several fine specimens. G. rupestris glaucescens is a fine variety of the species, and a large specimen of G. flabellata has been growing in the same pot for nine or ten years. Indeed it is not necessary to pot Gleichenias very frequently after they have attained a specimen size. They are propagated by division, but this is a very difficult operation, and G. flabellata is especially difficult; and this is the reason that the plants remain so expensive.

I have some notes of the Sarracenias and Nepenthes, but as the remarks already made are longer than I intended, I will devote a separate article to them, and will only say that they are well grown. A specimen of the rare Nepenthes sanguinea has twenty-four pitchers upon it, twelve of them very large; the largest is 12 inches long by 9 inches in circumference. In the same house with the Pitcher-plants are some good specimen Orchids, some of them being quite historical specimens, notably the Saccolabium guttatum giganteum from Mr. Russell's sale, which had five spikes in 1877, and shows how it has improved by producing seven spikes in 1878. S. Blumei Dayanum was in flower, and had four spikes; one of them measured 18 inches in length. Dendrobium crepidatum was doing well in a basket. It is a fine species, but imported plants of it cannot always be depended upon to come true to name. It is, moreover, a very useful species for the early exhibitions, and must be kept back for them by placing the plants in a cool house during the winter, as is done with Dendrobium nobile. Zygopetalum rostratum was also in flower in this department. It is a scarce Orchid that used to be exhibited in collections, as it flowers in early summer as well as in the autumn. The sepals and petals are greenish brown, and the large pure white lip is starred at the base with pale lilac. It had three or four flowers on a spike, and is a very desirable Orchid to cultivate. *J. Douglas.*

THE NEW FRENCH ROSES.

IF it be desired to make public the earliest information upon any topic, such particulars as can be obtained ought to be used as they come to hand without waiting to collect ulterior details, before which much of their interest would probably have passed away. With respect to the new French Roses for the season—always a subject of lively anticipation to enthusiastic connoisseurs—this mode of treating the subject is specially useful, owing to the dilatoriness of some raisers in the dispatch of their announcements. It is therefore a difficult matter to get them together so as to present them all at once to readers in a complete form, to say nothing of the wearisome task of rendering the French terms into English equivalents or of wading through them when so reduced. The sameness of phraseology employed, repeated successively in sixty or seventy descriptions, is always as bewildering to the reader's power of "counterfeit presentment to the mind's eye" as a long inspection of Roses in bloom is to the discrimination of the beholder's judgment—both are surfeited and confounded with excess. In the first instance, descriptions ought always to be as literal as the language will permit, though some words, such as "*arbuste* or *rosier*, shrub, or Rose-tree," must be freely translated. Colours also as given are difficult to define. But to proceed to our lists. The first will be that of M. Levet, Lyons (Rhône). From the sterling quality and deserved popularity obtained by many of his productions, M. Levet bears a very favourable comparison with too many of his countrymen. This year he indulges us as follows:—

Tea, Reine Marie Henriette.—Gloire de Dijon with red flowers. A vigorous shrub, with stout green wood, firm, and little thorny. Foliage deep green, flower large, well formed, fine red-cerise. This superb plant is as yet unique in the series of Gloire de Dijon Tea Roses.

Allowing for every exaggeration which usually characterises French raisers' descriptions of their issues, a brilliant high-coloured Gloire de Dijon would be unquestionably an acquisition (if real) of no mean importance, and that not only individually but as an indication of the possibility of obtaining other colours in a most admirable line.

Hybrid Teas, a new and very proper division, which appears establishing its way. First, Mdlle. Brigitte Viollet, tree or shrub, vigorous; flower large, full, well formed, flowering in corymbs; bright rose, slightly violet, edges of petals salmon. Plant of the first order. Madame Etienne Levet.—A vigorous shrub; flower large, full, well formed; red-cerise, tipped yellow-copper, superb. This fine plant is extremely free flowering.

H.P. Barthelemy Levet.—Shrub of medium vigour, foliage clear green; flower large, full, well shaped; fine bright rose; superb.

H.P. Pierre Carot.—Shrub, vigorous, upright or stout branches, deep green foliage; flower medium or large, full deep red passing to fine clear red; superb.

M. Liabaud, Lyons.

H.P. Madame Lilienthal.—A very vigorous plant; flower large, full, well formed; bright rose, tea-scented odour.

H.P. Claude Bernard.—Very vigorous, stout branches; flowers large, full, globular; deep rose; seedling from Jules Margottin.

H.P. Mdlle. Lydia Marty.—Very vigorous; flower medium or large; flesh rose, shaded with lilac; very fresh.

The moderate terms in which the above descriptions of M. Liabaud's new Roses are set forth is worthy of remark as a feature.

M. Joseph Schwartz (Lyon-Guillotière), successor to M. Gallot, Sen.

H.P. Jules Chrétien.—A very vigorous Rose tree, foliage of remarkable size, fine brilliant green; flower very large, full, well formed, colour bright poppy-red, shaded purple. This fine Rose, freely flowering, was exhibited in 1877 under the name of André Schwartz, and I have since dedicated it to the chief of floral culture in the Parc de la Tête d'Or. It has been rewarded with gilt medals of the first class.

Note.—Those who purchase at least two plants of this variety will receive a coloured engraving.

H.P. François Gaulain.—Very vigorous, straight branches; foliage deep green; wood almost without spines; flower large, well shaped; "wine-lees red, very decided"—one of the deepest colours known up to this time.

Hybrid Noisette Emilia Plantier.—Very vigorous, of a foliage quite remarkable; purple green in developing, passing to shining green; flowers medium or large, clear copper, taking afterwards a yellowish white tint; colour entirely new in this series.

Hybrid Noisette Mdlle. Auguste Perrin.—Vigorous, foliage olive-green, medium, full, well formed; colour very fine rose, reverse of petals whitish. Plant very "coquettish (sic).

This magnificent variety has been rewarded with a 1st prize (silver medal of the 1st class) for seedling Roses at the Lyons Exhibition, September, 1878.

The remaining lists will be furnished as they come to hand, and comments upon the whole will be deferred till the period of their completion. *W. D. Prior.*

THE RENOVATION OF TREES IN THE LONDON PARKS.

WHEN Columbus had found out the great American continent everybody knew that there was such a western world; and when the egg would not stand on end until he showed them how it was done, his critics felt the rebuke which their jealousy had called forth.

I have read with great interest Mr. Fish's paper on the plans proposed for the old trees in the London parks, to renovate their limbs and foliage, and throw fresh vigour into their systems, and thought I might back him up as far as I am able by telling him what has already been done on the very same ground, and with the very same trees of Kensington Gardens and St. James's by my namesake, William Forsyth. This gardener came to England in 1763, and served under Philip Miller; was afterwards gardener to the Duke of Northumberland at Syon House; subsequently Curator of the Botanic Garden, Chelsea; and in 1784 was appointed Royal gardener at Kensington and St. James's. For his improvements in the cultivation of fruit trees, and for his mode of renovating those that were decayed he received a grant in money from Parliament, who considered it a national improvement. He remarks at p. 425 of his book:—"I shall beg leave to state a few of the very numerous experiments that I have made on the forest trees in His Majesty's gardens at Kensington, where the salutary effects of the composition are evident to every attentive observer. The first trials of its efficacy were made on some very large and antient Elms, many of which were in a most decayed state, having all their upper parts broken, by high winds, from their trunks, which were withal so hollow and decayed, that a small portion alone of the bark remained alive and sound. . . . From the tops of these decayed and naked trunks stems have actually grown of above 30 feet in height, in the course of six or seven years."

Forsyth's book on Fruit Trees, third edition, with which is incorporated the Observations on Diseases, &c., is dated 1803, and it is very much to the

purpose, and to the point in hand to have the opinion of one so well qualified to judge of the matter, for it is evident that in his day and generation he was second to none. I do not say this because he was born and educated in the parish where I claim kindred (and for aught I know may be related to him), but I cannot help admiring the real "plucky" way in which he fought his battles when assailed by jealous critics. There was in that parish, and I believe there still is, a FREE school, and its fruit has been seen in such cases as that of William Forsyth. Some of my own schoolfellows "cast their bread upon the waters" of the Antipodes, and came back treading the deck of their own ship, not having "shamed the land that bore them."

Now let my "brother in the trade" just overhaul Forsyth's schemes and experiments, lest he should fall into the same rut, and get blamed for plagiarism. If he sticks to the root there will be no chance of renovation, and he need not heed the water supply, for heaven has fixed the supply of that element at or about 30 inches in Kensington Gardens. I lived some time in Kensington parish, and know the soil well. It is healthy, and resting generally upon the finest bed of gravel anywhere to be found; but, alas! the roots, the real feeders of the Elms, are far removed from either stiff clay or marl, or indeed from any other good earthy medium, but yet if all the other forest trees in the kingdom can do without watering at the roots by hand, why should not these do well also? The Elms in Kensington Gardens, Hyde Park, and St. James's have served their generation fairly, as Forsyth's evidence proves, for if he doctored them, whether with quackery or otherwise, it was evident that they stood in need of having rotten wood cleared away and replaced by new growth, and this was done to the satisfaction of some ten or a dozen noblemen and gentlemen who were commissioned to inspect both fruit and forest trees, and who reported favourably of the system of scraping the dead wood away, and coating the wounded places with Forsyth's composition, thereby encouraging the bark to spread and eventually fill up the defects.

No one should be misled by this exceptional season of 1878, for we see, hear, and read of localities drenched at one time until it was despaired of having any dry summer weather, and after that came heat and dryness so great that even the Potato plant, fond as it is of heat, could not hold its own, but produced tubers no larger than marbles, of excellent quality but of no weight; while many trees and shrubs cast their leaves untimely "where they had no deepness of earth." Now where the soil is shallow, and the roots near the surface, that is just the condition under which the Elm and most trees with watery sap can be reached by mulching. But there comes a time, and that must be near at hand now, when seventy years have gone over these Elms since Forsyth trimmed their heads and salved their wounds. Mr. Fish would replant, but not in straight lines. I should differ from him on that point, for the grandeur of the perspective has a charm that it can neither lend nor barter away; and although the curve may have the "bend of beauty," nevertheless "the long drawn aisle" ministers marvellously to the sublime. *Alex. Forsyth.*

THE NEW EARLY AMERICAN PEACHES.

As these Peaches are the subject of some interest both here and in their native country, it may be of use now to sum up all that is known of them in England, and, from report, abroad.

In this country they have been recently introduced by Mr. Rivers, and I have had some specimens of them under culture in the orchard-house.

Unfortunately, owing to the youth of the trees, I could not procure any Peaches to ripen, they having fallen off when swelling; but enough was seen of them to form some opinion on their value in conjunction with their habits of growth, flowers, and glands, and they promise well.

As is stated to be the case in America, they seemed here to me to be very much alike, with the exception that the Alexander has the more developed glands. Occasionally in their native country one ripens rather earlier shan the other, but both are believed to be earlier than Early Beatrice. Whether this will prove to be the case under glass here or not remains to be seen. Precocity of ripening is the most valuable quality which a Peach can possess, unless it be purchased at the expense of flavour and size; and even then these defects may be removed by crossing. It is evident that if a Peach can be grown in an unheated orchard-house early in June—and some may be even earlier—that such a fruit is a competitor against our old-fashioned forced kinds, good as they are. Already Early Beatrice ripens early in June in Algeria. In America in the south, the Amsden and Alexander Peaches ripened the first of all, while in the Northern States it is said that these were excelled in precocity by other native seedlings, such as the Muster and the Wilder, which, however, were clingstones and of moderate size. In Pennsylvania the Alexander was unripe on July 6, which is unpromising for its very early maturity here. As I always expected, the Early Louise proved the best of my old friend's early seedlings. No reasonable doubt could long exist, whether this as an early Peach would not be the most valuable for the open wall in England, and this opinion is general in France and Belgium. In Rochester (America) the Amsden Peach was the earliest, followed by the Alexander, and then by Early Beatrice.

I should, however, advise amateurs not to place too much reliance on these American seedlings, for, having grown for years nearly every one of them of any note, I have come to the conclusion that they degenerate in this country, though most valuable for crossing purposes. With orchard-houses, however, a trial is easy, and the results should be carefully noted and compared, for very early Peaches are of much importance. *Thos. C. Bridgeman.*

HERBACEOUS PLANTS.

HERBACEOUS plants as a rule require to be seen in masses to realise the full effect of their beauty. At Mr. Parker's nursery at Tooting the plan of growing various kinds in a sort of ribbon border has been adopted with conspicuous success. Even at this late period of the year some of the rows are very resplendent—for instance, one consisting of a central row of Tritomas and Pampas-grass intermixed, flanked on either side by a dense row of Aster amellus. It is difficult to imagine anything more brilliant than this, and there is a transparency, or what artists would call "air," about these flowers which is wanting in the equally highly coloured Pelargoniums and bedding plants generally. Other rows consisted of a central line of Acer Negundo variegatum worked as dwarf standards and bordered by Rudbeckia Neumanni and that fine old plant Verbena venosa.

In another case the row was composed of a centre of small plants of Taxodium distichum supported on each side by rows of summer flowering Chrysanthemums, variegated Weigelas and outside all a line of Dielytra eximia. In parallel lines were also planted variegated Periwinkle, succeeded by small plants of Kerria japonica, Purple Nut, Symphytum tuberosum variegatum and Rhus glabra laciniata, a remarkable association but by no means unpleasing. A mixed edging of Lithospermum prostratum and a variegated Helianthemum was also particularly striking.

Linaria dalmatica. A handsome perennial, 2–3 feet high, glaucous, with slender, erect, wiry stems. Leaves sessile, 1 inch, broadly lanceolate acute. Flowers in loose clusters, each nearly 1½ inch long, clear yellow. This is, for garden purposes, superior to our common Toad-Flax, L. vulgaris, which it much resembles.

Linaria triornata Skora. This fine old perennial has long been an inmate of our gardens, but the variety carnea is not so generally met with. Like the type the flowers are borne in verticils of three, looking like so many miniature birds settling round the stem. The colour of the flower in the variety carnea is a pale rose, the long spur being more deeply coloured than the other part of the flower. The palate is yellow, veined with purple.

Gaillardia Tehemuha. One of the handsomest of this very handsome group of Composites is one we saw lately at Mr. Parker's nursery at Tooting under the above name. The flowers were fully 3 inches across, the ray-florets broad, deep yellow, shading off in the centre to rich orange-red. The disc-florets are of a rich brown.

Ourisia Bæckii. This is one of the handsomest of the genus, but requires a warm situation, a cold damp soil being unpropitious. A good situation for it is in a border under the front wall of a greenhouse. The leaves are tufted, each with a cylindrical leaf-stalk, 2–3 inches long. The blade of the leaf is divided into three obcordate segments, smooth above, downy beneath, as is also the leaf-stalk. Flower-stem erect, leafless, 6–7 inches, bearing at the summit an umbel of bright rose-coloured flowers of great beauty.

Commelyna cœlestis must not be omitted from any collection of herbaceous plants, its intense blue flowers furnishing a colour rarely seen in gardens and comparable to that of Plumbago Larpentæ. The plant is 18 inches to 2 feet high, with lanceolate sheathing leaves. The flowers emerge from singular boat-shaped horizontally spreading spathes, and are of highly curious structure.

Silphium integrifolium is perhaps the handsomest o these noble Composites. They are all suited for the back row of the herbaceous border or in mixed shrubberies where their straggling habit is somewhat concealed. The bright yellow flowers of this species measure 4–5 inches in diameter, and are surrounded at the base by closely packed, very broad ovate leafy involucral bracts.

S. perfoliatum is similar, but with smaller flowers and very rough leaves; those on the middle portion of the stem are united by their bases.

Liatris pycnostachya, Gray, *Manual*, p. 224.—A handsome perennial, 3–5 feet high, with erect rod-like branches clothed with cottony hairs, especially towards the upper part. Leaves spreading, sessile, lanceolate, rough, with glandular scales. Flower-heads in dense terminal spikes, each about ½ inch. Bracts oblong-lanceolate, ciliate. Florets rich lilac, with very long projecting lilac strap-shaped stigmas. A noble plant for the back rows of the herbaceous border, flowering in late autumn.

Hypericum empetrifolium, Wild., ex Boiss., *Fl. Orient.* i. 792.—A neat habited Heath-like undershrub, 8 inches to a foot in height, with erect slender terete branches and whorls of spreading linear-obtuse leaves, three in a whorl, each about ⅜ inch long, dark green above, paler beneath, and with revolute edges studded with pellucid dots. Flowers yellow, ½ inch across, in stalked cymes, arising from the axils of the upper leaves. Buds globular, sepals less than half the length of the petals, obtuse, studded with small black glands, and often marked with two longitudinal vittæ, or oil glands, on each side of the midrib. This is a native of the Levant, whence it was long ago introduced into cultivation under the name of H. Coris, L., which is a different plant. It is figured under the name of H. Coris in an early number of the *Botanical Magazine*, t. 178, and also in Sibthorp's *Flora Græca*. In gardens it is generally known as H. Coris.

Senecio pulcher.—The beauty of this flower is not to be exaggerated. We lately saw a plant in full bloom at Mr. Parker's nursery, the blooms measuring 3½ inches in diameter, the rays of a bright rosy lilac, the disc orange. Some people find it difficult to grow, but the difficulty is not insuperable, as we have seen seedlings raised from the plants this year in one or two places, and every scrap of the root will form a young plant.

SOME MORE ASTERS.

ON a recent occasion (p. 407) we alluded to some of the best of the larger-flowered Michaelmas Daisies, which are such conspicuous ornaments in our gardens at this season. The list is by no means exhausted; indeed, the numbers are so great, and their identification so difficult, that it would be a long task indeed to unravel them. Indeed, for garden purposes only, it is hardly worth the trouble, as they are almost all very free-flowering and highly ornamental, excellent also for cutting purposes. Like most other things they well repay cultivation, though they will bear a good deal of neglect and ill-treatment. They look to best advantage when massed in groups. In addition to those mentioned previously we now select the following from among the smaller flowered kinds, which we saw recently at Mr. Parker's nursery, taking the names as we find them, without attempting to authenticate them.

A. dumosus, Hort. Parker. Dwarf-habited, glabrous, stems furrowed, flowering branches ascending, upper leaves sessile, auricled, lanceolate, gradually diminishing in size along the flower-stalks. Flower-heads very numerous, in terminal corymbs, each about ¾ inch diameter. Ray florets in some cases white, in others on the same branch pale lilac, the disc florets red; stigmas in the latter case violet, in the former yellow. This diversity of colour has a very charming effect. We do not find the species named in Gray's *Manual*, and the specimen before us is not sufficiently complete to enable us to determine it with accuracy.

A. horizontalis, Hort. Parker. This name also we do not find in Gray's *Manual*; it is common in our gardens, and is of spreading bushy habit with purplish stems, thinly clothed with soft silky white hairs. The upper branches are slender, wiry, spreading horizontally and bearing a number of small stalked flower-heads, the stalks of which all turn upwards. Upper leaves rather rough, sessile, lanceolate, spreading, entire,

1—2 inches long. Flower-heads ¾–½ inch diameter, vase-shaped, borne on stalks of about equal length with themselves, and clothed with very small recurved leaves. Bracts of the involucre in many rows, overlapping, oblong acute, green at the tips with white margins. Ray florets white, disc florets violet.

Aster Reevesii, Hort. Parker.—A dwarf bushy species, nearly or quite glabrous. Stems furrowed or marked with lines running down from the base of the leaves. Upper branches ascending. Upper leaves ¾ inch long, sessile, linear, spreading; leaves on the ultimate flower-stems suddenly smaller, apiculate. Flower-heads numerous, nearly ½ inch diameter. Involucre vase-shaped; bracts numerous, overlapping, awl-shaped, green. Ray florets white, disc florets yellow.

Aster Tradescanti, Hort. Parker.—Dwarf, bushy. Stems purplish, rigid, slightly pubescent. Flowering branches loose, spreading nearly horizontally. Stem-leaves deflexed, 1 inch long, finely serrulated, linear-lanceolate; leaves on the ultimate peduncles smaller, spreading. Flower-heads ½ inch diameter. Involucre vase-shaped. Bracts overlapping, linear, green; ray-florets white, disc yellow. This is probably the A. Tradescanti of Gray's *Manual*, p. 232, but many different plants go under this name in English gardens.

Aster multiflorus, Hort. Parker.—This is exceedingly like the preceding—so like, indeed, in habit and foliage that it is probably a mere variety of one and the same species. Of the two the leaves are rather smaller and more obovate-oblong than in the one called Tradescanti, and the flower-heads are somewhat smaller, about ⅝ inch diameter.

THE NEW GLASS-HOUSES AT WILLERSLEY CASTLE.

Inferiority as well as excellency in the construction of horticultural buildings, whether as regards quality of materials, modes of heating and ventilating, or arrangements for the accommodation of their occupants, &c., is so usual that it is a matter of serious moment for the intending builder to decide what system to adopt or avoid, or whom to employ. In some cases—and I am referring especially to houses for cultural purposes—the designer, strongly utilitarian in his disposition, too often produces a result sufficiently well adapted no doubt for the purposes contemplated, but characterised by a homeliness of style befitting the exigencies of the market-garden rather than the requirements of the well appointed garden of a gentleman's residence; or, on the other hand, being possessed by a *penchant* for the ornate, he will as often furnish designs with decorations out of harmony with the surroundings as well as out of keeping with the purposes for which the structure may be intended. Appliances for heating, ventilating, &c., also may be amply efficient for their objects, but at the same time unnecessarily expensive through refinements of ingenuity, and from the same causes also greatly subject to a liability to derangement.

For those reasons therefore I venture to believe I am acting in the interests of the horticultural public by inviting its attention to a range of plant and fruit-growing houses recently constructed by Mr. P. J. Perry, of Banbury, in the gardens of F. C. Arkwright, Esq., Willersley Castle, Matlock, which are considered to possess in an eminent degree the best features desirable in such erections—namely, materials of the best quality, skilful and conscientious workmanship, well-considered arrangements in the relations of the houses and their accessories, so as to secure a saving of time and labour, a heating apparatus simple of structure but of the highest efficiency, and of a minimum degree of liability to become disordered, and a ventilating mechanism characterised also by simplicity and quickness of action. The architecture is also chaste and sufficiently decorative to satisfy the eye of good taste, and throughout the arrangements every cultural requirement apparently has been duly provided for; in short, the general effect is suggestive of a happy blending of the useful and ornamental.

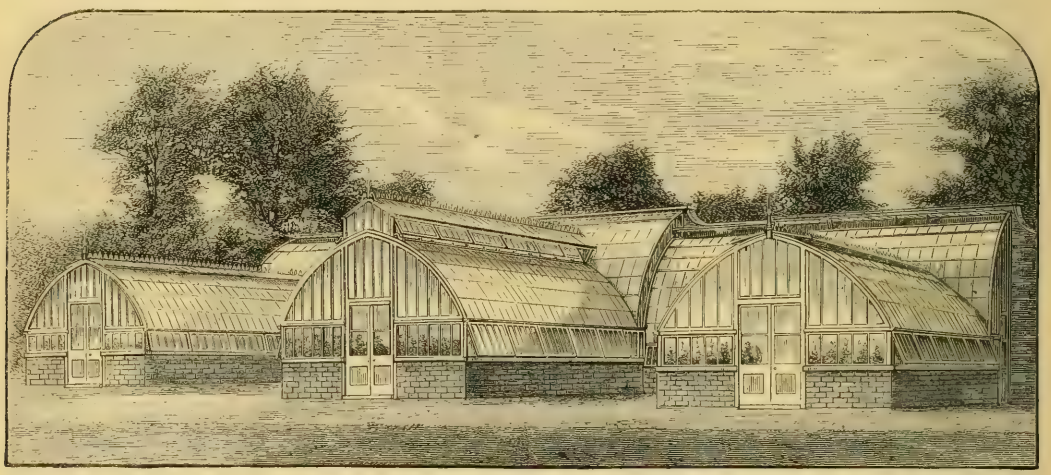


Fig. 88.—Forcing-houses at Willersley Castle.

Through the favour of the designer I am enabled to furnish the two accompanying illustrations, which will give a better idea of the character of the houses in question than any written description can afford, and, with permission, I will add a few explanatory notes that may prove serviceable. The principal block (see fig. 88) consists of three lean-to curvilinear-roofed Peach-houses, measuring respectively 30 feet by 12 feet, 25 feet by 12 feet, and 36 feet by 10 feet, and immediately connected with them are one curvilinear-roofed vinery, 32 feet by 18 feet; one other vinery, 34 feet by 18 feet; and one curvilinear plant-stove (centre house), 32 feet by 20 feet. The left wing, as depicted in fig. 89, is composed of one lean-to vinery, 37 feet by 9 feet; and branching from it are one span-roofed vinery, 35 feet by 14 feet; and one span-roofed Cucumber-house, 35 feet by 14 feet, with divisions.

A wing corresponding with the last lot is intended shortly to be added to the right of the centre. The whole of the range is heated by a "Climax" boiler.

The above account it is to be hoped will enable the reader to realise a fair conception of what the writer has tried to describe, but if an opportunity of making a personal inspection should occur, a visit would be amply repaid, and the visitor may feel assured that every courtesy will be extended to him by the worthy and intelligent gardener, Mr. Tissington. *Viator.*

PLANT PORTRAITS.

Acer rufinerve albo-limbatum, *Revue de l'Horticulture Belge*, March, 1878.—Of this variety, distributed by the late Mr. Standish, M. Lavallée writes that it is a native of Japan, figured by Siebold, *Flora Japonica*, t. 148. The leaves are deltoid cordate acuminate, 3–5-lobed, toothed, glabrous above, but provided beneath with reddish hairs along the nerves. The variegation, says M. Pynaert, is not constant, but when well developed is irregular, and the leaves are also margined with crimson.

Allium karataviense, Regel, *Gartenflora*, t. 941.—A species with very broad, flat, glaucous leaves, sometimes variegated, and dense globose heads of white flowers. Native of Central Asia.

Anemone trifolia, L., *Gartenflora*, t. 931.—A species greatly resembling our wild A. nemorosa. Mountains of Austria.

Apple Calville de Saint Sauveur, *Bulletin d'Arboriculture*, April, 1878.—This Apple, which is in season in the beginning of winter, is of large conical truncate form, with a short stalk, and a deeply depressed eye surrounded by projecting ribs. M. Burvenich recommends it for cordons or for pyramids on the Doucin.

Apple Jolly Beggar, *Florist*, March.—A beautiful plate of an excellent early kitchen Apple. Fruit medium size, roundish and somewhat ribbed near the eye, which is large and set in a shallow cup; stalk short, inserted in a deep hollow. Season October to December. Very prolific.

Asarum Thunbergii, *Gartenflora*, t. 928.—Better known under the name of Heterotropa. The leaves are cordate, and mottled like those of a Cyclamen; the flowers quaint, dull brown, pitcher-shaped, with a 3-lobed limb, and springing from the root. Japan.

Begonia Oriflamme, *Floral Magazine*, t. 298.—One of Mr. Laing's new tuberous Begonias, with flowers of a vermilion hue.

Bilbergia Saundersii, *Belgique Horticole*, t. 1 and 2, 1878.—This, according to M. Morren, is the same as B. chlorosticta, hort. Saunders, *Gardeners' Chronicle*, 1871, p. 1425. The leaves are tufted, strap-shaped, rounded at the apex, terminated by a mucro, saw-toothed, green above, purple beneath, and spotted on both surfaces with whitish spots. The flowers are about 2 inches long, disposed in a loose pendulous inflorescence, and have a crimson calyx half the length of the corolla, the petals being yellow outside, blue within. M. Morren points out that the present plant is intermediate between B. granulosa as to the leaves, and B. viridifolia as to the flowers. It

was introduced into commerce by Mr. W. Bull, and is a native of North-east Brazil.

Blandfordia flammea var. princeps, *Belgique Horticole*.—A reproduction of the figure in the *Botanical Magazine*, 1876, t. 6209, and previously alluded to by us.

Calamus Lewisianus, *Illustration Horticole*, t. 294.—A Javan Palm, with short stipes and petioles studded with prickles; fronds ovate, pinnate, erecto-patent, recurved at the tips, pinnæ linear-lanceolate.

Cattleya citrina, Lindl., *Gartenflora*, t. 931.—This beautiful Orchid, with its singular inverted habit of growth, its glaucous leaves, and citron-yellow flowers, needs no special mention in this place.

Cherry Leopold II., *Bulletin d'Arboriculture*, January.—A new Cherry, raised by M. Thirionet, nurseryman, of Jambes, near Namur. The tree is said to be of good form, moderate height. The fruit is medium-sized, flattish, bright brick-red in colour; flesh soft, juicy, uncoloured, sweet; stone globose, small.—Season, July.

Chrysanthemums Golden Empress of India, Diamond, *Floral Magazine*, t. 300.—The former is graceful form, with pink leaf-stalks and recurved lanceolate leaves, green on the upper surface, paler beneath, and marked with a central pinkish midrib. Introduced by M. Linden from the South Sea Islands.

Dracæna Goldieana, *Illustration Horticole*, t. 300.—A coloured figure of Mr. W. Bull's well known Dracæna, if Dracæna it be. It is a native of West Africa, and its finely barred and mottled leaves render it a prize to gardeners. Botanists are much interested to see the flowers of this fine species, which has been provisionally called Dracæna.

Gloxinias, new vars., *Floral Magazine*, t. 316: Beauty of Anerley, Mrs. Wills, and Earl of Beaconsfield.—As the lettering of the plate does not correspond with that of the text, we do not cite the descriptions.

Hoodia Bainii, *Botanical Magazine*, t. 6348.—A succulent Asclepiad with erect cylindrical stem covered with thick flattened subglobose tubercles terminated by an awl-shaped spine; it has large (2½—3 inches diameter) cup-shaped flowers of a cream colour. One of the most curious and beautiful of succulents. Native of South Africa.

expanded into a broad, rounded, somewhat two-lobed disc, is white spotted with red in the variety figured. M. André furnishes some valuable hints as to the proper treatment of this Orchid, which grows, it appears, in an atmosphere perpetually saturated with cold vapour in a temperature varying from 2°—10° C. = 35°—50° F. Absence of cold, absence of heat, and perpetual moisture, are therefore the main requisites, much as in the case of Masdevallias.

BOSCOBEL AND THE ROYAL OAK.

[SEE PAGE 501]

I PAID another visit to this old historical place on July 8, and feel inclined to lay before you one or two facts concerning the Oak tree (of which I send you a photograph—fig. 90) which some say is the self-same tree that sheltered King Charles, and which I contend it is not. I may add that one requires a good amount of courage—at Boscobel—to maintain one's own opinion, as it is somewhat irritating to be told at every turn that any one must be an idiot, and that

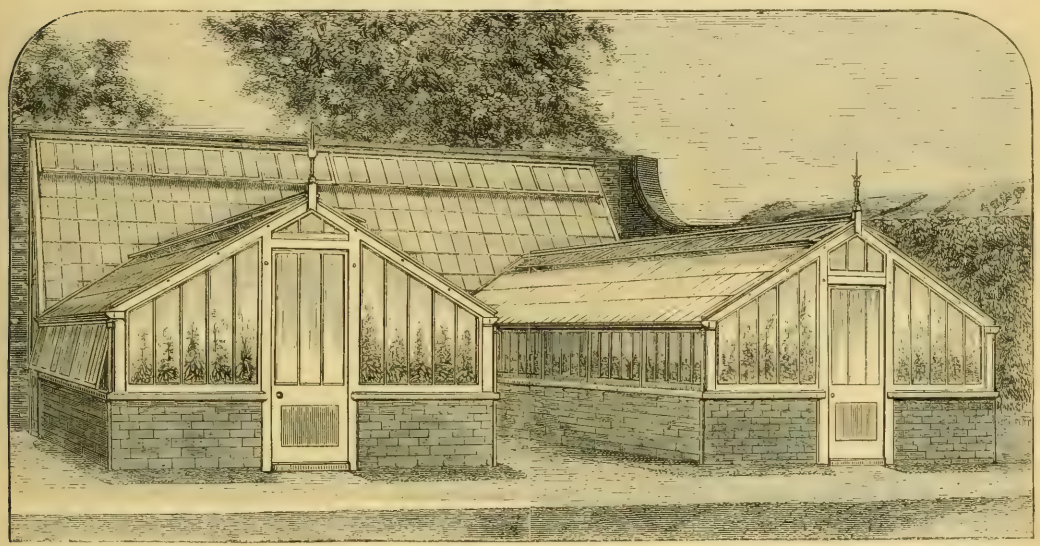


Fig. 89.—Forcing Houses at Whitley Castle. (see p. 496.)

a sport from the white variety; Diamond is a Japanese variety with incurved bronzy red florets edged with yellow.

× Chysis Chelsoni, *Floral Magazine*, t. 297.—A hybrid raised by Mr. Seden at Messrs. Veitch's, between C. Limminghii ♀ and C. bractescens ♂. The flowers are in racemes, each 2½ inches diameter, buff or yellow, the segments tipped with a pink blotch, the lip striped with red.

Clematis Duchess of Edinburgh, *Belgique Horticole*, t. 13, 1877.

Clematis Duke of Connaught, *Floral Magazine*, t. 313.—A very handsome large double flower of the lanuginosa type. Colour, lilac-mauve. Raised by Messrs. Jackman, Woking.

× Clematis Jackmanni and C. rubro-violacea, *Belgique Horticole*, t. 14, 1877.

Crocus serotinus, pulchellus, vallicolor? Byzantinus and longiflorus, *Floral Magazine*, t. 299.—Autumn and winter flowering species, of great beauty, suitable for pot-culture in a cool frame.

Cyclamen Rosy Morn, *Floral Magazine*, t. 315.—A fine variety of the giganteum section of the species persicum, with rosy lilac flowers of large size and good substance. Raised by Mr. H. B. Smith.

Dracæna Aurora, *Ill. Hort.*, t. 304.—A slender,

Jasminum [didymum, *Botanical Magazine*, t. 6349.—A trifoliolate Jasmine, with large tufts of small white funnel-shaped flowers succeeded by purple berries. Native of New Caledonia, the Fiji Islands, &c.

Karatas humilis, E. Morr., *Revue Horticole*, 1878, p. 190.—A tufted Bromeliaceous plant, with recurved, lanceolate, strongly toothed leaves, the lower ones greyish, mealy, the upper surrounding the flowers crimson. Flowers in central depressed tufts pink.

Loasa vulcanica, E. André, *Illustration Horticole*, t. 302.—One of M. André's discoveries on the western slope of the Andes of Ecuador. It is a bushy annual covered with stinging hairs; the leaves are palmately 3—5-lobed, the segments cut, and the flowers are axillary, each about 1½ inch across, white, spreading, with five erect connivent staminodes or nectaries of a red colour barred with transverse yellow and white stripes, which give the plant a peculiar appearance.

Oncidium cucullatum, Lindl., *Ill. Hort.*, t. 305.—A very variable species, growing at a greater elevation than most of its congeners. The sepals are barred with brown; the lateral petals are joined together with a hood, and are of a violet colour; the lip, which is much larger, narrower at the base, and

"one's own plain sense must tell them it is the identical tree." "Absurd" and "ridiculous" are quite mild words expressing their dislike of being even questioned as to its identity.

It so happens that my employer, together with two others, in February, 1857, took the girth of the Royal Oak at 4 feet from the ground, and the circumference then was 11 feet 4 inches. I took particularly the circumference at the same height on the day above named, and found it just 12 feet 3 inches. Therefore, in twenty-one years and five months it has increased in girth 11 inches, or nearly exactly half an inch annually. I think you will bear me out in saying that it would have increased in size much faster in its prime, or say during the second hundred years of its existence. It is now 227 years since the event happened which the Oak commemorates (1651), so that at the rate above recorded it would be reduced to a very small tree, if not to an acorn; and it is on record, by the King himself, that the Oak in which he sat had been lopped, but the present tree bears no visible trace of it.

I will just give you a few particulars from my pocket-book. Circumference on the ground level, following the indentations of the tree, 19 feet 5½ inches; ditto, tape on stretch, 15 feet 7 inches; at 4

feet from the ground, 12 feet 3 inches; at 19 feet from the ground, 9 feet 10 inches; height to the spread of main branches, 21 feet. This terminates what may be termed the trunk of the tree. The main leading branch above this is 7 feet 6 inches in circumference. If this is the tree in which His Majesty sat he would be at least 24 feet from the ground, so that it would require a good long nut-hook with which to pass up food to him.

The garden at Bisebohl was very gay with an assortment of Poppies, Snapdragons, Candytufts, Sweet William, Roses, &c; no new-fangled notions are allowed here. *A. S. Kemp, Haughton Hall, Shifnal, Salop.*

Apiary.

The Past Honey Season.—Believing it may be of interest to certain of your numerous apiarian readers to know the results of the past honey season in this part of the kingdom, I venture to send you a line, trusting to your courtesy to give it insertion. As was the case everywhere this spring, the long spell of wet, blusterous weather in May and June considerably retarded the labour of honey gathering, and it was not till the 20th of the latter month that the honey harvest commenced in earnest. After little more than a week of tropical weather from that date, four of my heaviest supers yielded a total of 122 lb. of honey on the combs being emptied by the honey extractor—which latter article, I may add, *en passant*, is a most indispensable adjunct to an apiary where bees are kept for profit, as the honey is taken without destroying the more valuable combs, which at the close of the season are put by for another year. All the supers in use in my apiary are furnished with frames of comb thus saved from 1½ inch to 2 inches in thickness. Three stocks filled two supers, and my strongest hive filled three with honey. The total amount of honey taken from twelve stocks is 372 lb., or an average of 31 lb. per hive, which in this particular district is barely half the usual average. With the generality of amateur bee-keepers it is not so well understood as it should be that bees will store from three to four times as much honey when the supers are already provided with combs placed on the hives in spring. Looking at it in the light of £ *s. d.*, an extractor must be considered a sound investment. It is asserted, on excellent authority, that bees consume 20 lb. of honey in making 1 lb. of comb—thus involving a loss to the producer of 18*s.* on every pound of wax sent into the market. Of this fact our Transatlantic brethren, wiser in their generation than the majority of bee-keepers in this country, are well aware. In the great American apiaries, especially in the West, the extractor takes a prominent place. There, surrounded by vast flowery prairies, yielding honey in a profusion unknown elsewhere, the average per stock is simply enormous. It has been lately mentioned that upwards of 2 cwt. has been taken from a set of supers, the produce of one stock of bees on the prairies in a single season. *Alfred Rusbridge, The Apiary, Sidlesham, Chichester, in the "Times."*

Florists' Flowers.

Auriculas.—In some respects the Auricula is the most remarkable of all our florists' flowers. It requires the cultivator's unceasing attention all the year round; to no other class of florists' flowers have really good new varieties been added so slowly—none has maintained its oldest varieties in cultivation so long and so surely—and it is the only one where the name of the raiser is persistently coupled with the name of the flower. We need not wonder that an Auricula once named and sent out keeps its place. A flower worthy of ranking with the famous beauties on the Auricula stage is selected with the most fastidious care, and though in every case it may not reach perfection yet it must be possessed of many points of excellence. No one can behold a collection of Auriculas in bloom without a sensation of the highest pleasure and admiration. There is such a quaint, formal beauty about the flowers, such an erect stateliness of bearing in some, while others desire to shade their charms modestly with a hood, and such a mingling of green, grey, and white-robed forms, with here and there a self arrayed in darker hue, that the sight is one which will not soon fade from their memory. The varied shapes and hues of the foliage, too, have a peculiar interest to the Auricula grower. Some have foliage of a deep glossy green, others have a sparse dusting of white powder on their leaves, and others are completely covered with a dense coating of it, pure and bright. Some have smooth, shapely, and symmetrical foliage, in others the veins stand boldly out above the surface of the leaf, and others have the edges of the leaf serrated and rough. And then how intently does the grower watch for the first symptoms of a break in his choicest kinds in order to get an offset; and with what joy does he see the little dot increase, open, and develope into a goodly plant ready to take a place among its kindred. But, on the other hand, his joys are not perfect, for he sometimes sees decay place its withering finger on some cherished plant, and, do what he will, it dies and perhaps cannot be replaced.

Could we have every named Auricula which has been cultivated since Hughes' Pillar of Beauty—said to be the first of the stage varieties—gladdened the eyes of the raiser, collected into one great show, what a glorious sight it would be! I am certain some of the oldest kinds would yet hold their places against all comers. I am very strongly of opinion that some of the old varieties will never be surpassed.

But I must now come to the circumstance which has led me to write the present paper. By the kindness of two friends I have been favoured with two catalogues of Auriculas, one thirty years old, and the other twenty-five; and also with a volume, called *The Floral Register for Lancashire, Yorkshire, and Cheshire*, 1840. The volume is published by R. J. Kaye, Rock Street, Bury, and contains lists of the prizes awarded at various shows to Auriculas, Polyanthuses, and Tulips. To the cultivators of these flowers at the time, the publication must have been full of interest. From the short preface it appears that the volume was chiefly designed to be "useful and highly advantageous to amateur growers." Jealousy then must have been at work, as it is yet, for it is stated that some individuals will no doubt be surprised at their lists not appearing on its pages; but the author assures them it is not his fault, as he has spared no pains to obtain them. He is aware that certain individuals to whom they were entrusted have, either through neglect or design, kept them back, but he fears it is from the latter cause, as he knows for a certainty that some of the dealers are greatly afraid of, and opposed to, its publication—especially to that part of it containing the residences of the winners.

Auricula shows must have been held at more localities in 1840 than at present, for we find records of shows held at the following places between April 21 and May 13:—Bolton, Bradford, Bury, Chester, Congleton, Huddersfield, Halifax, Hunslet, Leeds, Middleton, Northwich, Rochdale, Sheffield (two shows, at Botanical Gardens, and Bazaar Hotel); Thwarld Gate, Trentham, Tong Lane, and Wakefield.

At these shows the prizes obtained by each variety are given, and then they are tabulated, showing the total number gained by each at all the shows, and the class of prize. The prizes ranged from first to eighth, but I need only give the total number, which is placed before the name for convenience:—

Green Edged.

16. Booth's Freedom
9. Lee's Colonel Taylor
7. Waterloo
7. Barlow's King
6. Oliver's Lovely Ann
6. Howard's Lord Nelson
6. Pollitt's Highland Laddie
5. Do. Standard of England
5. Litton's Imperator
5. Faulkner's Ne Plus Ultra
4. Lady Ann Willraham
4. Moor's Jubilee
3. Howard's Shakespeare
3. Lord Brougham
3. Commander
3. Robin Hood
3. Warris' Blucher

Grey Edged.

23. Kenyon's Ringleader
10. Grime's Privateer
14. Fletcher's Mary Ann
13. Sykes' Complete
11. Taylor's Plough Boy
9. Thomson's Bang-up
9. Thomson's Revenge
6. Hey's Lovely Ann
4. Conqueror of Europe
4. Kent's Queen Victoria
1. Alpine Shepherdess

White Edged.

13 Lee's Bright Venus
14 Pott's Regulator
10 Ashworth's Regular
8 Wood's Delight
7. Lord of Hadamshire
6. Taylor's Favourite
6. Pillar of Beauty
6. Kenyon's Chancellor
5. Taylor's Incomparable
4. Countess of Wilton
4 Lily of the Valley
4 Popplewell's Conqueror
2. Taylor's Glory
2. Hoyle's Mrs. Bower
2. Ashworth's Rule All
1. Jackson's Miralla

Selfs.

14. Grimes' Flora's Flag
11. True Blue
10. Scholes' Ned Lud
8. Apollo
8. Berry's Lord Lee
7. Oddy's Rest
3. Kaye's Jupiter
3. Clegg's Blue Bonnet
3. Squire Mundy
2. Netherwood's Othello
1. Bishop of Lichfield

It is very pleasing to notice that some of the favourites then are the favourites still. No grower likes to be without Booth's Freedom, Oliver's Lovely Ann, Kenyon's Ringleader, Sykes' Complete, Taylor's Ploughboy, Lee's Bright Venus, or Taylor's Glory. It is almost impossible now to get Lee's Colonel Taylor, Pott's Regulator, or Ashworth's Regular—so far, at least, as my own experience goes. Since 1840 we have had some splendid additions to the different classes, which would vary the awards now if they were made in the same way as they seem to have been forty years ago.

The prices in the two venerable catalogues which I have are remarkably reasonable. Modern catalogues, in which the same varieties appear, show sometimes a very considerable advance. It is with a feeling of sincere regret that one sees that so many names of the old favourites have disappeared from our modern catalogues. I am sure it will interest to quote a few of the prices of thirty years ago. In the catalogues (Mr. Lightbody's and William Urquhart & Sons') Booth's Freedom stands at from 5*s.* to 7*s.*, and it is not now to be found in modern catalogues, as dealers generally have not much spare stock; Colonel Taylor, 10*s.* to 12*s.*; Lovely Ann, 1*s.* 6*d.*; Ringleader, 1*s.* 6*d.*; Privateer, 2*s.*; Mary Ann, 2*s.* 6*d.*; Complete, 2*s.* 6*d.*, and now seldom seen in catalogues; Ploughboy, 1*s.*; Bright Venus, 2*s.*; Regular, 2*s.*; Glory, 1*s.* 6*d.*, and now it appears at 10*s.*; Flora's Flag, 1*s.* 6*d.*; True Blue, 2*s.*; Othello, 2*s.*, now 5*s.*; Ned Lud, 1*s.* 6*d.*; Oddy's Rest, 1*s.* 6*d.*: these two last have wholly disappeared from all the catalogues I have seen for many years past.

It is a pity that there is not a complete list to be had of all the Auriculas now in cultivation. Some of the fine old kinds may still exist in some collections. An Auricula-growing friend tells me of a variety, Howard's Eclipse, of which apparently little was ever heard. He mentions that in the *Horticultural Cabinet* for 1841 a conversation between two Auricula growers appeared, and speaking of Howard, one said: "He was the grower of Lord Nelson, Sweepstakes, and Eclipse, which last is said to be one of the best grey-edged in the kingdom, but it is in few hands at present. He had seven plants of it; he gave me my choice of one. He sold the remainder to a person in Shrewsbury for two guineas. If they had been in the hands of some London florists they would not have parted with them for twenty." My friend further mentions that when the article appeared Mr. Campbell, himself an eminent raiser, wrote to the party for a pip of the flower. One was sent, the finest grey edge my friend ever saw. It was in the style of Lancashire Hero, but large and extra fine. Mr. Campbell and my friend got each a plant, for which they paid 30*s.*, and my friend has grown it ever since, but it has not increased. Can any more information about this variety be got? If it is better than Lancashire Hero it would be indeed an acquisition. Little bits of information about any variety are often very interesting and very useful, and I hope I have shown that old prize lists and old catalogues have also an interest, and I know that there cannot be a more innocent or pleasant hobby than growing Auriculas, and forming a collection of the best kinds, both old and new. *John Morris, Mains, Dundee.*

Garden Operations.

KITCHEN GARDEN.

In order that frost and other severe influences which naturally abound during the winter period may operate fully and freely upon those portions of the ground in this department which are to be fallowed this season, we strongly advise that all such plots be turned up roughly at the earliest opportunity, or otherwise be thrown up into ridges in a similar way. This process should be specially applied in the case of land where the nature of the soil is at all calcareous or tenacious in quality, for the purpose of pulverisation. Even in those gardens where high-class cultivation has been pursued for a series of years consecutively, and the soil has become friable, it is a commendable practice, as tending still further to ameliorate the condition of the soil and make it more serviceable, as well as being a means by which many existing pests, as slugs, snails, &c., are exposed and destroyed. At this season attention should also be directed to the proportion of ground which is to be trenched; this is a matter of the utmost importance and utility in many respects. The advantages which result from deep cultivation are fully known to practical men, and therefore need no comment here, but on the minds of the inexperienced it cannot be too forcibly impressed. Suitable oppor-

tunities should also be made available for dressing all those parts with manure or other substances where it is to be applied. If that corner where the refuse of the establishment has been concentrated has been seen to as it ought to be, much valuable stuff may now be extracted from it. This kind of material is much more valuable than is generally supposed, and far preferable to much of the manure which is generally employed. Let all decaying crops be cleared off the ground as soon as practicable after they are over; this will at this time apply to such crops as Dwarf and Runner Beans, Broccoli, Cabbage, Peas, &c. After the remnants of these crops are removed from the ground, it should be sown over with a mixture of soot and quicklime; this will help forward the destruction of many pests, such as slugs, snails, &c.; so also in the case of Asparagus plantations will a sprinkling of salt be beneficial not only in like manner but as a fertiliser also. We cover the roots of these plants with well decomposed manure at about this period of the year, and let it remain until the spring, when it is turned in just above the surface of the roots with a fork carefully. Shoots of Rhubarb and Seakale will also at about this time require to be divested of the leaves which remain about the crowns. In the latter case a surface dressing of about half an inch of ashes will be suitable. Let the earliest roots of Rhubarb, which are to be taken up shortly for forcing purposes, be marked off in readiness. Rhubarb, which has been allowed to make a growth without being plucked at all, will start much more readily than other roots; the same rule is also applicable to Seakale; those roots which developed an uninterrupted growth will start most freely. The presence of frost, which has already slightly prevailed, should indicate the necessity of being watchful in regard to somewhat tender subjects as autumn Broccoli, Lettuce for present use, Endive, &c. The former plantations should be looked over frequently at this season, and if not lifted the upper leaves should be tied up together so as to protect the heads. Endive should likewise be protected by means of pots being placed over them; and Lettuce, which is most tender, should be removed to a place where frost will not operate sufficiently to injure the choicest part, viz., the midribs. In the frame ground strict attention will now be requisite in order to keep the different subjects free from damp and hardy. Let crops of Cauliflower, Lettuce, Radishes, Parsley, &c., be fully exposed under suitable conditions, and mat up the frames of Peas and Beans at night when cold or frost prevails. As soon as leaves are procurable a proportion of these should be incorporated with stable manure and beds be made up in readiness for the early sowing of Carrots, Asparagus, roots for forcing, Seakale, &c. A supply of these should likewise be deposited at some convenient spot where any mixing with manure may be effected and the heap of materials may become warm in readiness for any emergency that may be necessary. Chicory roots may be introduced into the Mushroom-house, and a few pots of Tarragon should be prepared for starting when forcing is proceeding. *G. T. Miles.*

HARDY FRUIT GARDEN.

The rich autumnal tints and the chill night air begin to remind us that the season is fast approaching for planting all kinds of fruit trees, and that it is high time to be making the requisite preparations, by way of trenching and getting together fresh loam, that a few barrowloads may be laid around the roots of each, so as to give the trees a fair start. There is nothing like the top spit of an old pasture for this, and the fresher such sods are used, if free of live grassy matter, the better, as this undecomposed fibre is the most valuable portion of it. The mixing of leaf soil, manure, or other vegetable matter is the greatest mistake possible, as they one and all are a frequent source of mischief by generating fungus, which is one of the most insidious enemies to tree life. In all cases of poorness of soil it is much better to enrich it by giving a top-dressing in the way of a mulching after planting, so that the rain may carry the rich juices down, than it is to run any risk by digging it in, besides which stone fruits, except on very barren land, are far more productive without any manure at all. All stimulants, except when they have heavy crops to carry, tend to force wood, and therefore by burying them now they are accessible when not required, whereas if given in a liquid form during the summer, the assistance so rendered would result in great good. What, however, is of value when trenching fruit borders that are very light and sandy, or that rest on a gravelly bottom, is a few loads of marl or clay broken or chopped up into small nodules, and thoroughly mixed in with the lower portions of the soil as the work proceeds. Used in this way it is surprising how very retentive of moisture it is during dry weather, and with what avidity the roots of trees seek it out and feed on it. The effect it has here is so great as to be seen from one end of the garden to the other in the healthy appearance of the leaves, and the contrast they afford in enduring fierce heat and sun without flagging, when others not so favoured at the roots showed signs of the greatest distress. Witnessing, as I have, the immense benefit derived from treating fruit borders in this way, I can most strongly recommend its adoption by others who may be similarly circumstanced, and if they will only go to the labour I am convinced they will be satisfied with the result. I would just remark that it is no use whatever to put the clay on or near the surface, or in a layer, as to be of value to the trees it must be incorporated with the soil in which they are growing in the way alluded to above. Many gardens are too stiff and wet already for Peaches and Apricots; the remedy is a deep drain along the front of the border, so that the water may slowly percolate and find a ready outlet. It is only stagnant moisture that is injurious, and if trees are free from this they will bear a good deal of wet without having their health adversely affected. This being the case, I would warn beginners against planting over a layer of brickbats, as is frequently done, where, unless the roots manage to get through and beneath them, the trees so situated stand no chance of growing satisfactorily or of being able to carry a crop.

In contradistinction to stone fruits, Raspberries delight in a deep rich soil, and only do really well when they can be so accommodated. The best situation for these is where they can receive slight shade during an hour or two in the heat of the day, such as would be afforded by a building or wall or by rows of Apples and Pears planted at wide distances apart. Such positions in a measure accord with their natural habitat, they being generally found in woods and other situations partly screened from the bright rays of the sun. The double bearing kind, however, owing to its ripening so much later, requires an open position exposed to the solar rays in order to give it its proper flavour and to get it fully mature. The Raspberry is a plant that suffers severely during dry weather, and therefore the trenching and preparation for them, to be effective, should be well carried out. In breaking up the soil the depth must in a measure depend on the crops that have preceded them and the quality of the ground below, but 2 feet at least ought to be aimed at, the lower half of which should be well enriched by using plenty of rotten manure. *J. Sheppard.*

FRUIT HOUSES.

Orchard House.—There is one advantage in growing trees in pots which is of considerable importance, and that is being able to remove the trees from the house entirely at this dull season of the year, and furnishing it with Chrysanthemums and other flowering plants. We have just removed our Peach, Nectarine and other trees out-of-doors. I ought to state that our trees receive no injury from being placed out-of-doors during the winter, with the pots plunged in cocoa-nut fibre refuse. I generally remove them into the house about the first week in January; by that time the Chrysanthemums are mostly done flowering. If the house was required two months later than this the trees might still remain out-of-doors. I have seen them kept out until the buds were well advanced towards the flowering period and still do well when removed to the house. It would not be safe to place the trees out-of-doors in districts where the rainfall is very great, as probably the young wood might be injured and the flower-buds would drop before they opened. Those trees not repotted in the autumn must now be top-dressed; to many cultivators it seems rather rough treatment to remove the large portion of the soil with the fibrous roots in it, and to the inexperienced it does seem that a considerable check must have been given to the trees; it is not so—the trees begin at once to push new roots from all the severed portions and very speedily the fresh compost becomes quite filled with them. Such trees are never at rest, unless the weather is such that vegetation is stagnant through the temperature being below 35°. An iron spud about 1 inch wide and about 4 inches long is a useful tool to operate with. The mould should be removed to about one-third of the depth of the pot, and its place should be supplied with the fresh compost pressed in rather firmly with a wooden rammer. A good material for this purpose is turfy loam rotted and of a clayey nature: add to it a third of good stable manure, rotted, and some bone-dust—a small portion of broken charcoal will act beneficially upon it. It will soon be time to repot the "maiden" or one-year-old trees. Presuming that they have been purchased in the nursery it will be found that many of them have large stumpy roots; these must be sufficiently reduced to allow of the tree being potted in a 10 or 11-inch pot. I drain the pots pretty well, place over the drainage some fibrous turf and then place in the roots of the tree, working the compost, the constituent parts of which have already been described, amongst them. The particles of mould must be worked in amongst the roots with the fingers, and, when this has been done, the whole must be beaten in firmly with a wooden rammer. After the operation is complete the trees may either be placed out-of-doors with the others or under glass; if the latter, give a good watering through the rose of a water-pot a week after the trees have been repotted, and do not let them become dust-dry all the winter. This is a matter that requires alluding to, as many persons do not remove their trees outside at all; if this is the case, see that water is supplied to the roots all through the winter months when it is required. If the soil in the pots becomes dust-dry the trees will certainly suffer; this applies to all trees in pots, whether established or recently potted. I find in many places that the Peach trees have been planted out; and if the house is not intended for any other purpose that is certainly the most preferable plan to adopt. In one place I saw the trees trained bush and pyramid fashion, and in another they were trained to a low trellis; in the latter instance what was called an orchard-house was simply what has always been designated a Peach-house. It matters but little what the place where the trees are cultivated is termed; what we want to know is how to get the largest quantity of fruit from a given space. I feel much inclined to back the old system against any other. If the trellis is fixed so that every square inch of the glass roof is utilised I do not think that by any system of training bush or pyramid trees that more can be made of it. Nevertheless bush culture, either as pot or planted-out trees, will always commend itself to amateur cultivators. When the culture is understood, very great pleasure can be derived from the manipulation of the trees; but to wait upon them during the heat of summer requires the patience of an enthusiast. *J. Douglas.*

The Cherry-House.—If the lights were taken off this house at the time indicated in the Calendar upon this subject, they should, before much time elapses, be replaced. It will however be wise before doing so to have the rafters scrubbed down with a brush with soft soap and water, if they have not been painted, to dislodge any insect pests which may be concealed hereabouts. The remnants of foliage which may still hang on the trees should also be removed entirely, and whenever time and circumstances permit the ordinary annual cleansing and white-washing should be effected before the house is started again. In the meantime it should be kept well ventilated, excepting at such times as when frost prevails, and it be necessary to close it up to protect other inmates which have been introduced—these, however, should be confined to subjects which require more protection from the effects of frost. Should any planting be contemplated in this house, let the soil be got in readiness so that the matter can be accomplished off-hand prior to forcing being commenced. For Cherry trees good virgin loam, with an admixture of road-scrapings, forms the best compost. *G. T. Miles, Wycombe Abbey.*

Orange Trees in Pots.—Those on which the fruit is approaching the ripening stage will now have to be placed in a house with a minimum temperature of 65°, rising by day to 75° or 80°. Moisture, too, must be regulated to the requirements of the fruit; too much either at the roots or in the atmosphere causes the fruit to crack—indeed, it will crack when both care and judgment have been exercised. There are usually a number of trees that do not bear fruit, these may now be placed in a cool house, and in that position scale or other insect pests do not make much progress; and it is a suitable opportunity to get rid of them altogether, as the leaves will stand a stronger solution of insecticides of any description than they will at any other time. Gishurst Compound is destructive to scale, but it is not so pleasant to work amongst a strong solution of it with the hands. I do not find anything better than soft soap dissolved in warm rain-water; the leaves and stems of the trees must all be hand-washed with a sponge. *J. Douglas.*

Cucumbers growing in frames heated by fermenting material should have their linings made up weekly or fortnightly as circumstances may necessitate its being done, by which means a steady-growing heat can be maintained, and the plants kept in a bearing state until Christmas, unless the winter—early winter—should be unusually severe. Guard against the attack of mildew by occasionally dusting the plants whilst the foliage is damp with the flowers of sulphur. A little fresh soil (the same as previously recommended) can be added, if not already done, to the partly-spent beds. Plants in houses and in full bearing, more especially those having their roots in a somewhat confined and limited space, should receive copious applications of tepid liquid-manure in a diluted state. Cut the fruit so soon as they attain a suitable size for table, and stand them in a saucer in which there is half an inch of water, in a fruit-room, until they are required for use. The plants thus relieved of the demand for food in this direction will concentrate the flow of sap to the swelling and finishing of the younger and smaller fruits, and so on during the whole fruiting period of the plants. As a matter of course, the stopping, thinning, &c., of the plants must be duly attended to, and otherwise maintain a sweet and growing atmosphere, and allow insect enemies no quarters whatever, should they appear. *H. W. Ward, Lon ford Castle.*

THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 19, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Oct. 21.—Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY, Oct. 22.—Sale of Orchids, at Stevens' Rooms.
WEDNESDAY, Oct. 23.—Sale of Bulbs, at Stevens' Rooms.
THURSDAY, Oct. 24.—Sale of Orchids, at Stevens' Rooms.
SATURDAY, Oct. 26.—Sale of Dutch Bulbs, at Stevens' Rooms.

THE Act to consolidate the law relating to weights and measures, commonly called the WEIGHTS AND MEASURES ACT OF 1878, has recently been published. Its enactments are to take effect on and after January 1, 1879. The Act is a useful one, and it is characteristic of the safe way in which we do things in this country. Change, even for the better, is to be gradual, the thin end of the wedge is to be gently inserted, and in due time the pressure of public opinion and public enlightenment will very slowly but surely drive it home, and then the whole system of absurdly inconsistent weights and measures will be extinguished, and replaced by one which shall have the merit of uniformity, consistency, ease of computation, and facility of comparison. For the present we must be content with noting the beginning of these good things, the next generation may possibly experience their full fruition. Truly as the present system, or no system, has been the growth of centuries, we cannot expect it to be abolished all at once by Act of Parliament; nor, were such a consummation possible, would it be desirable—the inconvenience created by sudden violent change would be worse than the present system. This being so, we are not surprised to find that the present Act is a mere beginning—a stepping-stone, as it were, to better things. While uniformity in some particulars is enacted, in others survival—and this time not of the fittest—is the rule.

It is no slight thing to have it declared in the third section that "the same weights and measures shall be used throughout the United Kingdom." The ridiculous and inconvenient plan whereby the "stone" of one commodity or substance is different in amount from the "stone" in another—the still greater absurdity of considering the stone, or the acre, or the mile, or other weight or measure, as the case may be, to mean one thing in one town and something else in another, are henceforth to cease, and a uniform system of weights and measures (subject to a few exceptions) is to be universally adopted; and so we are to have the imperial yard and its subdivisions into feet, inches, its multiples of poles, furlongs, miles, as at present. Superficial and square measures will, of course, be regulated in the same way, as also measures of weight and capacity; one pound shall contain 16 ounces, each ounce 16 drachms, and so on. It is needless to go into all these matters, as the imperial weights and measures remain as they were.

There are, however, certain provisions in which some of our readers are specially interested, and to which we must, therefore, call special attention.

Section 16 enacts, that "a bushel for the sale of any of the following articles, namely, lime, fish, Potatoes, fruit, or any other goods and things which [formerly] were commonly sold by heaped measure, shall be a hollow cylinder having a plane base, the internal diameter of which shall be double the internal depth, and every measure used for the sale of any of the above-mentioned articles, which is a multiple of a bushel, or is a half-bushel or a peck, shall be made of the same proportion as the above-mentioned bushel."

Section 17 enacts, that "in using an imperial measure of capacity, the same shall not be heaped, but either shall be stricken with a round stick or roller, straight, and of the same diameter from end to end; or, if the article sold cannot from its size or shape be conveniently stricken, shall be filled in all parts as nearly to the level of the brim as the size and shape of the article will admit."

Section 18 provides that the metric system *may be* lawfully used "for computing and expressing" sales, so that contracts shall not be invalid if expressed in weights or measures of the metric system. A table of metric weights and measures is appended.

Section 19 provides that all trade contracts, sales, &c., shall be according to the imperial weights and measures, and that "no local or customary measures, nor the use of the heaped measure shall be lawful." Any person, moreover, "who sells by any denomination of weight or measure other than one of the imperial weights or measures, or some multiple or part thereof, shall be liable to a fine not exceeding 40*s.* for every such sale." The exceptions to the preceding section are gold and silver, diamonds and precious stones, which are to be sold by troy weight; and drugs, which are to be dispensed or sold by retail, by apothecaries' weight.

Section 22 undoes much of the good the Act might otherwise work, by allowing sales of articles to be made in any vessel whatsoever, provided that the vessel is not represented to be an imperial measure. By this loophole all the irregularities and absurdities may, as it seems to us, be perpetuated, provided they are not called "imperial." And yet Section 24 goes on to enact that "every person who uses or has in his possession for use for trade a weight or measure which is not of the denomination of some Board of Trade standard, shall be liable to a fine not exceeding £5. What then is to be done with the sieves, the pottles, the punnets of Covent Garden? Is the whole body of dealers to be fined?

Section 23 provides that *any person who prints*, and any clerk of market, or other person who makes any return, price-list, price-current, or any journal or other paper containing price-list or price-current, in which the denomination of weights and measures quoted or referred to denotes or implies a greater or less weight or measure than is denoted or implied by the same denomination of the imperial weights and measures under this Act, shall be liable to a fine not exceeding 10*s.* for every copy of every such return, price-list, price-current, journal, or other paper which he publishes.

If this be really the law every Covent Garden report, every market report for hay, corn, coals, and what-not, published in the form customary may subject us and our contemporaries to a fine of some thousands of pounds for each issue! It seems to us that such a penalty, even if it could be enforced, would or might be grossly unjust, but we very much doubt if it could be enforced.

The whole Act comprises eighty-six sections, some applicable only to Scotland, others only to Ireland. We are, therefore, compelled to limit ourselves to the indication of some of the main features of the Act, and while we rejoice at the approach to uniformity which is attained, at least in prospect, by the abolition of local weights and measures, we regret that no further progress has been made towards a uniform subdivision of the weights and measures that we have.

It is too much to expect that we could at once adopt the admirable simplicity of the metric system in its entirety—though, to the great comfort of all concerned, it is very extensively used by scientific men—but surely something might have been done to promote a uniform ratio in the subdivisions and multiples of our pounds, yards, and the like.

Why in the name of common sense should we be condemned to use and to teach our unfortunate children such a farrago of inconsistent rubbish as our present table of weights and measures?—why in the world should there be 12 lines to an inch, 3 inches to a palm, 4 inches to a hand, 8 inches to a link, 12 inches to a foot, 3 feet to a yard, 6 feet to a fathom, 5½ yards to a rod, pole, or perch, 4 poles to a chain, 40 poles to a furlong, 8 furlongs to a mile, 3 miles to a league, 60 nautical miles to a degree, and 69½ geographical miles to a degree? Why should such a jumble as this be persisted in, when in almost every other civilised country the subdivisions and multiples are all in regular proportion.

One great difficulty in the adoption of the decimal system is no doubt to be found in the unfamiliar myriametres, kilometres, kilogrammes, and the like. Surely some plan could be devised whereby our well-known pounds, feet, inches, and so forth, could be uniformly subdivided, and thus we should gain most of the advantages now enjoyed by our neighbours without fear of that terrible bugbear of adopting a system which is not English.

—— THE DANGSTEIN COLLECTION.—We are deeply grieved to learn that amongst the changes brought about by severe domestic affliction, the noble collection of exotic plants at Dangstein is likely to be brought to the hammer in the course of the ensuing spring. One always regrets to hear of the probability even of so valuable and important an assemblage of plants as this is known to be—constituting, in fact, one of the most renowned private collections of choice exotic plants to be met with in this country—being either dispersed or allowed to fall into neglect; and we would fain hope that the rumour may after all prove to be incorrect, and that Dangstein may long remain famous not only for its noble gardens, but also for the accommodation its stoves and greenhouses may supply to its numberless and priceless specimens of exotic vegetation.

—— FANCY VIOLAS.—For some time past Mr. JOHN DOWNIE, of Edinburgh, whose name is so intimately connected with the culture and improvement of the Pansy, has been trying to introduce the well-defined markings and showy colours of the florists' fancy Pansies into the modern race of bedding Violas, and a box of flowers before us amply show that his efforts in the direction indicated, have been rewarded by success. The general superiority of the improved varieties of Violas over Pansies as bedding plants is freely admitted, and their cultivation is so largely increasing that we gladly hail the advent of a "break" that promises so much in the way of novelty. Up to the present time self-coloured varieties only have been introduced, and a glorious feature they are in any flower garden; but who can say what still more lovely colours may not be in store for us—what still more beautiful combinations may not be possible—as the result of Mr. DOWNIE'S happy hit! The flowers before us are charmingly pretty, especially a deep purple shading off into violet; another with a purple centre shading into violet, and the two upper petals pure mauve; and a rosy purple passing off into a lighter edge.

—— POTATOS AT THE PARIS EXHIBITION.—We learn that the Gold Medal in the recent Potato competition has been awarded to Mr. WILLIAM PORTER, of Old Meldrum, N.B., the famous Northern Potato grower. Mr. PORTER exhibited in the classes for twenty-five and twelve kinds respectively, and, although the competition was strong, was far in advance of his opponents. All who have seen Mr. PORTER'S superb samples at the various International Potato Exhibitions will acknowledge that the honour must have been deservedly won.

—— PLANTS IN FLOWER AT KEW.—In the conservatory at Kew few plants combine greater beauty with interest than Witsenia corymbosa, the only known frutescent Irid. Each branch resembles a miniature plant of an Iris, and several have corymbs of the prettiest deep blue flowers. It is dense and slow-growing, requiring many years to form a large specimen. Cuttings will strike, but are rather slow and uncertain. Grevillea Thelemanniana



Fig. 90.—The Boscobel Oak. (See p. 497.)

is one of the prettiest, and not common. It has rose-coloured flowers and leaves of distinct character, divided into many acicular segments. Around one of the iron supports Cestrum aurantiacum will shortly be very attractive; the flowers are orange, tubular, with a radiating 4—6 divided star-like limb, the dark green stigma conspicuous in the centre. Thibaudia pulcher belongs to a beautiful but neglected class. This species has handsome, shining, broadly ovate leaves, and those towards the ends of the branches have in their axils short racemes of waxy-looking flowers, crimson in colour. A pretty Myrtle for pot culture is Myrtus mucronata; the leaves are small, and it flowers profusely; it is blooming also on one of the walls. The genus Crowea includes several kinds, distinct, but similar in appearance, with lanceolate leaves and pinkish flowers; these are C. stricta, C. latifolia, and C. macrantha. Berberidopsis corallina is a beautiful and profuse-flowering greenhouse climber, and though suitable for planting against a wall out-of-doors is well worth planting inside. This year it has flowered very profusely, and the flowers have sometimes been thickly spotted with stigmatic mucus, which it produces in unusual quantity. The globose, fleshy, and deep red flowers are unique and attractive. It is valuable as a greenhouse climber on account of its restricted habit and handsome evergreen leaves. Many thickly growing climbers are injurious from the dense shade they necessarily give to the plants beneath. Cassia Sophora is a good rafter plant; it has dark pinnate leaves, and the bright golden flowers are numerous. Metrosideros floribunda is a handsome species, the filaments are scarlet, and the flowers are so collected round the stem as to have the appearance of a bottle-brush. Fuchsias are seen to great advantage when trained to the roof, as in this house. F. Alexandrina is suitable for the purpose; it has crimson recurved sepals and white petals with crimson feathered veins. Eucnida, or Microsperma bartonioides, is a handsome annual, allied to Loasa; useful for pot culture. It is tender, but also does well planted out. The stems are stout, bearing leaves like those of the Chinese Primrose, of pale green, covered with coarse hairs; the flowers are its great beauty, being large, of a fine yellow, and with numerous long yellow filaments. The decoration of conservatories from this time up to Christmas is materially assisted by taking up and potting carefully the flowering plants of Echeveria metallica and E. glauco-metallica. The latter is now in flower, but E. metallica is by far the most handsome; panicles a yard high are often produced. In the Succulent-house the best form of Agave schidigera we have seen is about to produce a flower-spike. The leaves are all covered with stout white filaments. Fourcroya Selloa is effective with panicles reaching to the roof; the flowers are large, greenish white, and pendulous. Crassula

Bolusii is a pretty species, comparatively new; the leaves are narrow, ciliated, and curiously pitted. It is allied to C. Cooperi, but is less a trailer, and the leaves are more fleshy. The flowers are white, small, but numerous. Bomarea Carderi planted out at the end of the house has several fine panicles, one has sixteen expanded flowers though several branches have been cut. It should always be planted out where practicable.

—— LAPAGERIA ROSEA SUPERBA.—In the gardens of STEPHEN WILLIAMSON, Esq., Copley House, Thornton Hough, Cheshire, there is now in bloom a magnificent specimen of Lapageria rosea superba, covering a wall 14 feet high and 18 feet in length. The plant has now over 300 blooms upon it, and is also set with innumerable succession buds.

—— THE RIPENING OF GRAPES.—The chemical changes which take place during this process are imperfectly known. Messrs. SAINTPIERRE and MAGNIEN have lately been experimenting on the subject, basing their experiments on the fact that the interchange of gases which takes place between the Grape and the atmosphere is the starting point of our knowledge of the transformations which take place within the Grape itself. The experimenters, whose proceedings are recorded in the *Annales Agronomique*, after noting the changes that take place during the colouring process, the diminished acidity and the increased sweetness, comment on the sudden diminution in the quantity of potash in the leaves. We cannot cite the details of the experiments, but we may give the leading results. The Grapes at the epoch of maturation give off carbonic dioxide in darkness and in light. The quantity of carbonic dioxide given off is always greater than the quantity of oxygen consumed. The mechanism of ripening is as follows:—The acids and the glucose (grape sugar) are formed in the plant, and are conveyed to the Grape. The acids are there burnt off while the sugar becomes concentrated. When the ripening process is protracted the sugar also becomes burnt in its turn.

—— PIG-NUTS AND TRUFFLES.—Some correspondence has been lately going on in the columns of the *Standard* as to Truffles, and one correspondent has made the discovery that Pig-Nuts are identical with Truffles!—and proceeds to recommend the employment of pigs instead of Truffle-dogs! Verily, some people should not rush into print. Mr. TILLERY'S plan of growing Truffles—not Pig-Nuts—has been frequently given, but it is amply worth reproducing:—

"I selected particular places in the wood under the Oaks, and covered them over with Oak leaves, with old hurdles over them to keep the wind from blowing the leaves off. In three or four years some of these beds began to show ripe Truffles, not in a few numbers but in quantities, as we could often gather from 2 lb. to 3 lb. at a time, in October and November, when they were wanted for the kitchen. I sent the late Dr. LINDLEY a fine specimen of nearly half a pound weight, which he pronounced equal to a foreign one in flavour. Having no Truffle-dog to scent them out, in digging for them we destroyed quantities of unripe ones, the squirrels being our best guides to find the ripe ones. I afterwards transplanted over-ripe Truffles from some of these beds to other places by taking up the old tubers with a spadeful of the mould in which they grew, and introduced them into other places. There is little doubt but that the Truffle is produced from spores, like other fungi, and this is only from ripe ones. To be successful in cultivating them artificially the soil of the plantation must be of a light calcareous nature, and under Oaks, Beeches, and even under Laurel bushes, where not too shady, as in the wood here I found them often growing under the outside branches of Laurels and Rhododendrons. Where no expense was regarded in trying to grow Truffles artificially, some of the ripe tubers might be got from the Poitou and Périgord districts in France, and preserved in the soil they grew in and planted with it in this country. When the plantation was destroyed, and my Truffle colony with it, I was much disappointed in thus losing the chance of growing them on a more extended scale."

—— THE HILLOCKS OF A HUNDRED FIGHTS.—It was interesting the other day to see these doughty warriors reposing after their labours—the warriors we allude to are the large pot Roses of Messrs. PAUL & SON, at Cheshunt. There they were, strictly in *mufti*—no flower-bud even gave sign of decoration, or suggested the glorious uniform they will assume next spring. There they were, raised from the ground by a common brick or two slipped beneath the pot, sheltered by a Beech hedge, and close to the span-roof barrack ready to receive them in the winter, and prepare them for future triumphs. Hard by was the gigantic vehicle which conveys the redoubtable ones to the scene of action. Some might suggest that it was a furniture van, but who that ever saw a furniture van unpacked, when the finest side-board suggests the broker's shop, would insult the champion inmates of the Rose van—we mean of course the car of Aurora—by any such comparison.

—— FUCHSIA THYMIFOLIA is a real little gem, with tiny dark green leaves and tiny dark crimson flowers. It makes a good rock plant, but requires a warm, well-drained soil.

—— THE LEAVES OF PLANTS, considered in reference to their action on gases, fulfil two distinct functions. By their protoplasm or nitrogenous contents they absorb oxygen, and they give out constantly carbonic dioxide (carbonic acid). By their green colouring substance or chlorophyll they inspire, during the day only, carbonic dioxide gas, and expire oxygen. In the young state the protoplasm predominates, the chlorophyll is relatively scanty; hence during the period the respiratory function predominates over the assimilating function, and consequently the leaves exhale carbonic dioxide at this stage without interruption. As the leaves increase in size the protoplasm diminishes, the chlorophyll augments, consequently the capacity of emitting carbonic acid during the day rapidly diminishes, and soon they give off nothing but oxygen. From this time forth it is only by placing the plants in darkness, or by more or less suspending the action of the chlorophyll, that it is possible to demonstrate the effect of respiration. There is, then, for living beings, plants, or animals, only one kind of respiration—the same for all. The office of the chlorophyll is different, its work is one of assimilation. Such are the conclusions to which M. CORENWINDER arrives in a recent number of the *Annales Agronomique*, after detailing some new experiments made by him, and summarising old ones. The views advocated by CORENWINDER, based indeed to a very large extent on M. CORENWINDER'S own experiments, are now adopted in all our standard text-books; and if the contrary is still taught in so-called popular books and by ill-taught popular lecturers, it is only because the filtration of new ideas takes time. M. CORENWINDER may rest assured that his views are accepted by the great majority of those whose opinion would be appreciated by him.

—— COLCHICUMS.—These have been gay for some time. Among the best are striatum fl.-pl., pale lilac; crociflorum, small, dark lilac; byzantinum, rosy lilac; and especially the double white C. autumnale.

—— BERRY BEARING PLANTS.—As the autumn creeps on into winter we shall be looking out for something to take the place of the flowers we have enjoyed so much in the summer. Happily there is no lack of such things as Solanum Capsicastrum and its allies. Skimmias also are very serviceable for this purpose. We lately saw at the Fulham Nurseries a fine collection of these in pots. The plants are about 12—18 inches high, and covered with crimson berries. They were lifted last autumn.

—— PINE-APPLES.—In the current number of the *Belgique Horticole* is given a translation of BEER'S monograph of the genus Ananas, together with a descriptive list of the cultivated varieties of Pine-apple to the number of seventy. The distinctions depend on the presence or absence of spines to the leaves, the colour of the flowers, lilac or whitish; the form of the fruit, subglobose, cylindrical, or pyramidal, &c.

—— TROPÆOLUM SPECIOSUM.—Few persons with an eye for plants visit Scotland without noticing this very beautiful creeper, and a good many bring it across the border with them, in the hope, too often vain, of getting it to flourish in the southern half of the kingdom. We have, however, lately seen it in three different places, in each of which, after many failures, the plant seemed at length to have established itself. In each case the locality was cool, damp, and shady. In one case a liberal dose of manure was added to the soil before planting; in the other cases the plant was grown in common garden mould.

—— A NEW SILVER PYRAMIDAL POPLAR is described in *Der Deutsche Garten* of August 10. It was introduced into Germany from Taschkent in Turkestan, where, it is stated, it forms a very striking feature in the landscape. In habit it closely resembles the Lombardy Poplar, but it is regarded as a variety of P. alba, and it has been named P. alba var. Bolleana, LAUCHE. The leaves are silvery beneath as in the typical form, and deeply lobed, often broader than long. This tree promises to be a welcome addition to the small variety we have of the fastigiate class.

—— BEAUTY OF GLAZENWOOD ROSE.—A writer in the *Deutsche Garten und Obstbau-Zeitung*, one of the many new German gardening periodicals, details his experience of the Rose Beauty of Glazenwood, and gives it as his opinion that it is a perfectly worthless variety.

—— INDUSTRIAL EXHIBITION AT BERLIN.—There is to be an Industrial Exhibition in Berlin next year, in which horticulture is to play a prominent part. It will be of five months' duration, and steps are being taken to ensure a permanent display of objects connected with, or the produce of, gardening. A sum of £500 has already been placed at the disposition of the horticultural section, and this will be doubled if necessary. A considerable area of the site has been set apart for the purpose.

—— ANSELLIA FROM ZANGUEBAR.—At a recent meeting of the Horticultural Society of Berlin M. HILDEBRANDT, the African traveller, exhibited an Ansellia which he found growing on trees in Zanguebar. It may possibly be a variety of the old A. africana, from which it differs in the deeper colour of the flowers, and in the much smaller pseudobulbs.

—— CALADIUMS, if not already at rest, are about seeking their winter repose, a time during which we now and then hear a complaint of their keeping badly. The reason of their turning to a hard chalk-like substance, is perhaps invariably that they are allowed to get over-dry. We have never seen them keep better than when laid on their sides against a wall in a house with growing plants, receiving an occasional sprinkle from the syringe or rose of a watering-pot. In this way they have kept perfectly. The fact is, that when the soil gets drier than it should, it acts powerfully as an absorbent, and extracts from the tuber its organised sap. It is analogous to the drying of a specimen, by means of bibulous paper, for the herbarium. Small shoots taken off with a slight heel in early summer have now good tubers in 60-pots.

—— CYDONIA SINENSIS, the Chinese Quince, has several very handsome fruit on one of the walls at Kew. They are nearly egg-shaped, and of some size, measuring from base to apex about 4 inches, and in diameter about 3 inches; their light green colour is in pretty contrast to the dark foliage, though unfortunately they are hard and dry, and of no value beyond their appearance. It is rarely that many fruits are produced, but in spring the tree is attractive with large pinkish flowers.

—— TROPICAL WATER LILIES.—Our contemporary, *Der Deutsche Garten*, reports (September 21) that a collection of tropical water Lilies in the open air in M. BORSIG'S garden near Berlin was in splendid condition at the date given. The collection consists of about eight of BOUCHE'S hybrid varieties between Nymphæa rubra and N. dentata, associated with Nelumbium and Victoria. The Nymphæas produce a profusion of flowers varying in colour from deep red to white. They are in a small pond which is supplied with warm water from an adjacent factory three times a week, so that the average temperature is maintained at about 72°.5 Fahr. By means of a stream of water from the Victoria-house the water in the pond is kept constantly in motion. Formerly, when the temperature of the water in the pond was kept at 77°, by means of daily ingress of warm water, the Lilies grew more luxuriantly than now, but even now they present one of the prettiest sights to be found in the gardens around Berlin. A peculiarity of

the Nymphæas grown here in the open air is that they form comparatively small tubers, which decay in the winter, and consequently must be replaced every spring. Neither Nelumbium nor Victoria flowered at this lower temperature, but when the mean temperature was kept up to 77° they produced perfect flowers.

—— Death of Dr. Ahlburg.—From the German papers we learn that Dr. Ahlburg, for a short period Professor of Botany in Japan, has suddenly and unexpectedly died. We have from time to time published some extracts from his letters on Japanese vegetation, gardening, &c., which have appeared in the *Monatsschrift* of the Horticultural Society of Berlin. As recently as August last the serial named contains an article from the same pen on the gardeners and gardens of Japan. Just as the telegraphic news of the death of Dr. Ahlburg reached Germany, the lady to whom he was engaged to be married was on the point of starting to join her intended husband in Japan.

—— Amaryllis Belladonna.—Last summer Mr. J. Roberts planted in front of one of the old Pine stoves at Gunnersbury Park a bed of this useful early blooming Amaryllis. A trench 2 feet in depth and about 18 inches in width was dug, and a foot of rubble placed at the bottom for drainage, and the bulbs were then planted in pure loam. They have done remarkably well, and yielded a great many flowers this autumn. Mr. Roberts thinks it would be best to place some rough sand among the loam as a general rule, seeing that loams inclined to be adhesive are apt to run together and become close. Next season Mr. Roberts anticipates a rare head of bloom from his plantation. The bed occupies a warm position which, so long as a suitable amount of moisture is given when requisite, appears to suit this species well.

—— British Pommes de Terre.—Some of our exhibitors of Potatos have at least astonished the foreigner. Our "Pommes de terre," the provincialism of which is "taters," have been shown in large quantities at the great International Exposition, and have taken the Frenchmen by surprise. Hitherto the native of France, although a large grower for other markets besides his own, has not made the exhibition of the noble tuber a speciality, and his style of putting them up for show is an exceedingly crude one. A rough sample, unwashed, perhaps just as lifted, little and big, all of a heap, was the highest stage to which the Frenchman had yet reached in the art of exhibiting Potatos. Now some of our large growers have shown how we do these things better in England, and no doubt, with that powerfully imitative nature that characterises the Frenchman, we shall soon have reason to feel that he has not learnt his lesson in vain. A Paris contributor to the *Daily News* tells us that although there are no bloated Gooseberries there are Pears of marvellous size, "and then, oh, the Potatos!" He is surprised to learn that there are above 100 varieties of this esculent, and that, varying in appearance, their flavours also differ in imperceptible degrees"—all which shows that the esculent has not hitherto there enjoyed that popularity that it has obtained in Great Britain and the sister isle. The sight of these dozens and dozens of plates covered with piles of the divers "species" of Pommes de terre ought to be enough to affect any cook to tears—not an improbable result, seeing that the fortnight's exposure needful on the show tables will render those examples of our best culture even unpalatable for pigs. It is something to our credit to secure this uninvited and disinterested tribute to our skill as cultivators, and doubtless the thousands of French labouring people from the rural districts, cultivators of their own homesteads in many a distant province who have visited the exhibition during the present month, will carry back with them new ideas concerning Potatos and their culture.

—— Cetnum Forbesianum (Hort.), "one of the finest species," is in flower at Kew, in the Begonia-house. The bulb is flask-shaped and measures 23 inches in circumference. The leaves are just commencing to grow, they are deeply curved in cross sections, and the margins are finely ciliated, the older ones, when broken off for transit, are 2½ inches across. The scape is stout, only 9 inches long, and supports an umbel of over two dozen flowers, nearly all of which are open together; the pedicels are short, measuring ⅛ to ¾ of an inch. The perianth is funnel-shaped, with a slender tube half the full length of about 8 inches, it has an expansion at the mouth of 2½ or even 3 inches. The segments are similar, ½ to ⅞ inch across about the middle, tapering below and pointed above, each with a median band of deep rose, shading off to a pure white margin. To this colouring is due a large measure of beauty, but the flowers unfortunately do not appear to be of long duration. The species is one of the C. ornatum set; it has before been in cultivation, but was soon lost. Up to the time of flowering this specimen nothing was known, except by a poor description, without a figure, taken from a plant sent to the Horticultural Society many years ago by Mr. Forbes. It was received from the Lebombo Mountains, situated between Natal and Delagoa Bay. A figure will be published in the *Botanical Magazine*.

—— Bishop Auckland Horticultural Society.—Owing to the great depression in the coal and iron trades in the North, combined with wet weather, this spirited society has had to suffer heavy pecuniary losses during the past two years, and the committee are seriously thinking of abandoning their annual show until better times come to the North, when there would be a chance of the shows again proving remunerative. A correspondent in North Durham writes—"I never knew in my time such a long continuance and such complete stagnation in the coal and iron trades in this district, and not the slightest sign of any revival at present." This is a bad look-out for horticultural shows, and it is a particularly gloomy out-look for the Bishop Auckland Society, whose supporters have been drawn from the iron and coal fields of the immediate district in South Durham. The exhibitors will be so sorry to lose the annual show that they should be ready to make some sacrifices to meet the present unfortunate difficulties by being content with a percentage of the prize money according to the sum realised. Some of the amounts in the schedule might be reduced and certain classes withdrawn till better times enabled them to be re-introduced. A conference between some of the largest exhibitors and the committee might do much in the way of enabling the continuity of the shows to be maintained without increasing the present debt of the society.

—— The Trees on the Thames Embankment.—Mr. Alexander M'Kenzie, under whose advice and superintendence the Plane trees on the Thames Embankment were planted by the Metropolitan Board of Works, calls attention in the *Times* to the healthy and vigorous appearance they have presented during the past summer, and further points out that when these trees were planted the intention was to remove every second tree as soon as they were grown to a sufficient size, in order to give room for the development of the permanent trees. The time having now arrived when this may be done advantageously, Mr. M'Kenzie urges the "powers that be" to remove, say, some three or four dozen alternate trees from where they can well be spared, and utilise them in that bleakest of bleak places—Trafalgar Square. "Had this square been in Paris it would have been planted long ago, and would have been by this time no mean rival to the most beautiful 'Place' in that city."

—— Curcuma.—We came across a remarkably pretty lot of these little plants at Mr. Parker's the other day. The sorts were cordata with violet bracts, petiolata with pale lilac bracts, and Roscoeana with orange-coloured bracts. The bold foliage and singular inflorescence should win for these plants greater favour than they apparently enjoy.

—— The Doubleday Collection of Lepidoptera.—The *Times* mentions that a report has recently been made on the state of the Doubleday collection of Lepidoptera. A recognised type collection in any branch of natural history is an object of respect, and any accident that may befall it is sure to arouse the interest of a large circle. As is well-known to entomologists, the late Mr. Doubleday's collection of Lepidoptera is recognised as a type collection, and his systematic lists form a classification very commonly used. The Science and Art Department accepted the charge of the collection, and found space for it at the Bethnal Green Museum. A catalogue of the contents was made for the department by the late Mr. Andrew Murray, F.L.S., and the part referring to the first 106 drawers, containing British species, was printed by order of the Committee of Council on Education. That the collection is really used is shown by the fact that last year there were 1492 applications for permission to examine it. The report states that fresh specimens of no less than 238 species are required for the collection in order to replace those destroyed by mites. The list of those required has been published in the *Entomologist*.

—— Phloxes.—This a very good time to judge of the late blooming kinds, and we transcribe from our note-book the following memoranda taken in Mr. Parker's nursery at Tooting:—Queen, the best of the whites, very chaste and pure, and the form of the flower good; La Candeur is also a white, with a pink eye; Lothair is a good rose-pink, coccinea is a particularly bright crimson variety, quite one of the best; Thibaut is also a good pink variety.

—— Webb's Great Root Show.—Messrs. Edward Webb & Sons, Wordsley, Stourbridge, have issued their schedule of prizes to be awarded for specimen roots, vegetables, Potatos, cereals, &c., at their annual show, to be held at Curzon Hall, Birmingham, on Wednesday and Thursday, November 20 and 21.

—— The Abuse of a Pious Custom.—There seems to be an increasing tendency in this country to place wreaths, crosses, and other devices in artificial or everlasting flowers on the graves and tombs of dear departed ones. It is to be hoped that this mode of showing affection and respect will never assume here the proportions it has on some parts of the Continent. Indeed, for our own part, we would use nothing of the sort where living herbaceous plants or shrubs could be employed. It is true that in each case only one or a few persons could be directly represented, but this could form no objection, generally speaking. If a considerable or large number of persons wish to testify their esteem and remembrance of the dead, it cannot be more appropriately done than by uniting together to erect a permanent monument. The large Parisian cemetery, Père-la-chaise, is rendered perfectly hideous by the overflowing abundance of devices in everlasting flowers and in beds. Many of the elegant and beautiful monuments are completely hidden from view by these unsightly tokens, some of them of enormous dimensions. To mention one or two instances which lately came under our notice—the monument erected in the cemetery named, to the memory of Raspail, is a tall one, somewhat pyramidal in form; but that is all we can say about it from observation, because, with the exception of a few square inches, it was covered with wreaths, &c., in various stages of decay or freshness. And Thiers' tomb was in even a worse plight, for where it was not covered with similar devices it was scribbled all over with the names of those who had visited it, notwithstanding that there was a book provided for the purpose. By way of variety, a large number of persons had stuck their visiting cards in the wreaths, &c. Altogether it seemed to us that the sacred and solemn character of the place was destroyed by this ostentatious manner of commemorating the visits of admirers and friends. The wreaths vary from 1 foot to 2 yards or more in diameter, and they are proportionately thick; the larger ones bearing inscriptions in differently coloured flowers. Thus has a very touching and pious custom degenerated into a vulgar and tasteless exhibition of dried and often dyed flowers, glass beads, and other objects even more offensive to the eye.

—— The Chaumontelle Pear.—Mr. C. B. Saunders informs us that at the annual exhibition of fruit held by the Royal Horticultural Society of Jersey on the 9th inst., there was a fruit of this variety of Pear shown which weighed 26 oz., Jersey weight; and as the weights in that favoured isle are heavier by 1½ oz. per pound than the English standard weights, this fruit weighed 21 oz. 9 dwt. avoirdupois. It was a fine handsome elongated specimen of the kind, and was no doubt as good as it looked. No Apricot, Nectarine, Peach, or Plum is of such delicious flavour as this kind of Pear, with the additional qualification of ripening about Christmas time, when these other fruits are unobtainable, of first-rate quality. A dinner party of the convenient and conventional number of seven might have divided it into equal parts and have

fared quite as sumptuously as upon "the Walnuts and the wine" of traditional lore.

—— Gardening Appointments. — We understand that Mr. George is leaving the service of Lord Clancarty, at Garbally, Ballinasloe, and that Mr. Cobben, late gardener to Lord Masserene, Antrim Castle, has been appointed to succeed him.—Mr. Farelly, late foreman at Garbally, has been appointed gardener to the Marquis of Sligo, at Westport House, Co. Mayo.—Mr. Thomas Bowie, who has served under Mr. Dunn in the gardens at Dalkeith during the past four years, has been appointed gardener to Melville Portal, Esq., Laverstoke Park, Overton, Hants.

INDOOR PLANTS AT KEW.

To use an expression, now and again heard, we are "between the seasons," a time when flowers are more than usually scarce, so that anything good in its way is of more particular interest. Some plants are for all seasons—not that any plant can flower continuously; every individual must have its season of rest and quiet, which is more or less sharply defined.

Under this category are three good subjects in the Temperate-house. Rhodochiton volubile is an excellent climber, hardly well known; in several horticultural works we find no mention of it. It has a most graceful habit, the long flowering stems are often pendent for a length of 5 feet or more, and in themselves elegant, with heart-shaped profuse leafage. The flowers are curious and striking, chiefly on account of the pink calyx, which is spreading or sub-campanulate, and persists long after the corolla, which is tubular, and of the darkest purple, has fallen away.

Lonicera sempervirens minor is another rafter ornament, not often found in commerce, and, as a consequence, rarely in gardens. It has oval opposite leaves, one or two pairs next the inflorescence being always connate, those immediately below forming an elliptical disk; the flowers are tubular, of bright orange, and arranged on a short spike in whorls of five or six; they turn chiefly to one side and form a pretty cluster. Habrothamnus fasciculatus is already a favourite with most cultivators; its leaves are oblong-lanceolate, very dark green, and the flowers are tubular, purplish red, growing in immense clusters, and producing in time a profusion of round red berries. It rarely happens that the above are without representatives in flower.

Rondeletia odorata var. breviflora is good in the Palm-house. This it must be mentioned is the correct name of the so-called and well-known R. speciosa. Though so long cultivated it has never had a botanical definition, and therefore a figure was published in the *Botanical Magazine* of March last. A hybrid raised at Kew between this and R. Backhousei is also in flower; it has pretty corymbs of pale orange, and is as nearly as possible an intermediate. The Snake Gourd (Trichosanthes anguina) is striking either when the fruits are immature, having then white stripes, or when ripening to deep orange. The form, of course, is its chief feature; with length and slenderness, often twisting, it is not inaptly compared to a snake. The Bottle Gourd (Lagenaria vulgaris) is also ornamental, having a number of fruit most correctly shaped to justify its name. Cucumis sativus var. sikkimensis is well worth growing for the appearance of its fine yellow fruit when ripe.

Aristolochia ornithocephala is freely producing its lurid immense flowers. Many of the Cassias are extremely showy in flower, but often with too great a luxuriance of growth; C. viminea is moderate in this respect, and is now bearing its golden blossoms. Pitcairnia fulgens is well known among Bromeliads, and its scarlet flowers are really effective. Erythrochiton brasiliense, with the aspect in foliage of Clavija, is attractive, with flowers having a large red tubular calyx and a pure white salver-shaped corolla. At present we know not where else to find Heterocentrum mexicanum, and while once a favourite it seems now to be taking refuge at Kew. Many shoots are annually produced from the stems near or below the soil, and these with pretty foliage terminate in a cluster of numerous white or rose flowers. The pendulous stems of Boussingaultia baselloides, bearing fleshy leaves and long spikes of fragrant white flowers, are extremely elegant. It requires plenty of room to grow, and then the flowers in mass may almost be compared to Hoteia. Near this a plant of Carica Papaya has just flowered, and shows itself a male—lately a desideratum. In the Economic-house are two fruits swelling, produced by fertilising with C. candamarcensis and C. cauliflora respectively. The progeny will be of interest should the seeds germinate.

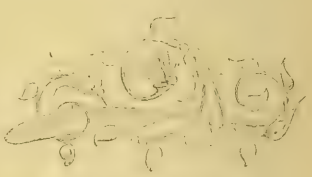
Several plants may have brief mention. Scutellaria Ventenati, Cyrtanthera Pohliana, and Dichorisandra thyrsiflora are among the favourite occupants of a stove. The several forms of Hibiscus rosa-sinensis produce the most gorgeous flowers that can just now be found. In the Lily-house is a new Pitcairnia, resembling to a great extent P. fulgens, but superior to it from a garden point of view in the more graceful leaves, and much longer equally brilliant flowers. It has been named P. acuminata, and is throughout more slender than P. fulgens. The true Nymphæa gigantea is here in flower, its flowers are beautifully blue, and have the advantage of only a few kinds in remaining open all day. They vary greatly in size from cultivation, and naturally, too, from seed the size is variable. The fine Batatas paniculatus, figured in our issue of September 14, is here a feature, and in one of the corners Hedychium coronarium betrays its presence by the delicious perfume of its large and delicate white flowers.

Canada Rice (Zizania aquatica), a grass of great interest on account of its edible seeds and the value of its stems for paper-making, will shortly flower in the Victoria-house. The two specimens have been under different degrees of temperature and exposure to sunlight during the summer, but are now precisely at the same point of development. The high summer temperature whence these plants were obtained suggested its position here, and the conditions appear favourable, though from pot confinement the native height of its growth has not been attained. Monochoria vaginalis, standing in the tank, is striking, with bold, arrow-shaped leaves, and it also bears pretty clusters of blue flowers. It is nearly allied to Pontederia, and this species is used in India as a pot-herb; when chewed it is considered a remedy for toothache, and is used for several complaints, among others for disorders of the liver and stomach. Coffea travancorensis, in the stove, is literally covered with a multitude of pure white Gardenia-scented flowers. Unfortunately the show of bloom is brief, the flowers quickly make their appearance in quantity, and as quickly go. The dwarf and twiggy habit, with great profusion of bloom belonging to this species, suggests that some good result might be obtained by using it as a parent with Coffea arabica. Its relationship does not appear far removed, but at Kew these species have never flowered together. The result in view under this consideration is a dwarf tree thickly furnished with branches, each bearing a plentiful crop. In contrast with some reports of C. liberica, it might confer the advantage of a crop ripening at one time. The trees of a Coffee plantation are usually limited to a certain height.

In the Begonia-house Tydea Madame Heine is commencing to flower, and, as last year, it may continue up to March or even April. A succession of plants will bloom during the summer. Sciadocalyx digitaliflora, having tubular carmine corolla with spotted limb, is also beautiful. In the cool compartment are many plants of interest, and also of great beauty. Hæmanthus puniceus var. superbus has a fine globose head of scarlet berries. H. coccineus has been for some time a striking object; and H. insignis, less showy in its bracts, has crimson flowers more fully exposed, with conspicuous yellow anthers. Amaryllis calyptrata is curious, with entirely green flowers. Trichinium Manglesii is rare and little known, but extremely beautiful, with rosy flowers in dense hairy clusters. It is an Amaranth from the Swan River, and is easily propagated by cutting up the rootstock. The leaves are few, and there are rarely more than three or four inflorescences from one crown, so that by grouping in a pan much higher effect would be attained. Gastronema sanguineum var. flammeum is an extremely choice bulb. The type was discovered in Caffraria. It has narrow leaves and orange-red somewhat Vallota-shaped flowers, one to each scape. Mesembryanthemum curviflorum is a fine white species, freely in flower; it is one to include in a choice selection.

While there are many hybrids of the tuberous Begonias we cannot help admiring some of the species. B. Martiana has not yet been surpassed in its lively pink flowers, and the beautiful yellow of B. Pearcei is quite unequalled. There is a nice set of several Nerines. N. pulchella is the largest and darkest in colour. N. flexuosa comes next, succeeded by humilis, and undulata the smallest. All are of rosy-pink colour with beautifully undulated perianth segments. Even at this dull season many good Orchids are in bloom. Masdevallia Chimæra, well figured in our vol. iii., p. 41, is the first to meet the view. It is one of the most curious, and a front view of the flower has been compared to a "twisted clown's face distorted with a grimace." A tremulous motion is imparted to the peculiar labellum by the least shake. The yellow-flowered M. Davisi is next of note, and of M. Veitchii there are plants in flower. Odontoglossum grande has just opened, and others are O. Lindleyanum and O. constrictum. The finest Oncidium is O. tigrinum, it has a large lemon-yellow lip, and is primrose-scented. O. triquetrum is curious, it is a small plant, nearly always showing its brown flowers, and is worth growing in mass on a Tree Fern stem. O. flexuosum is pretty, with a multitude of chiefly yellow flowers.

Well known effective plants are Miltonia Clowes, and M. candida grandiflora. A fine form of Lælia Perrinii has just opened, and several others are about to expand; L. Dayana is another good species. Dendrobium cumulatum has pretty clusters of pink flowers. Pleione lagenaria is a showy Indian Crocus, and several others are about to open. Cypripedium purpuratum is select and beautiful; it has deep purple petals in direct line with each other, and the large upper sepal is pure white, with well-defined purple lines. Other kinds are C. concolor, flourishing in chalky loam; C. Sedeni, C. longifolium, and its variety Roezlii.



Home Correspondence.

The Trees in the Parks.—I am glad to see that "C. C. H. G." (p. 430) agrees in the main with the remarks which I made (p. 364) in reference to the trees in Hyde Park and Kensington Gardens. His first objection is to the thinning recommended, which he thinks extreme; but when I said every other tree, I meant rather to imply that there were twice as many on the ground as there should be, than that they were to be thinned strictly to the extent named. Trees, when too thick, do not only suffer from want of air and light but from want of food, the rootlets ramifying in all directions, and exhausting the soil to a much greater extent than most people seem to be aware of. As to the trees about the Round Pond your correspondent's remarks are quite to the point; the main features must be preserved, and so they may be by means of a little judicious management. Taking the Round Pond as a centre, avenues radiate from it in different directions, separated by broad, dense, wooded thickets. Well, suppose these were judiciously thinned and pierced by broad glades of turf they would in that way be thrown into clumps, leaving here and there on the grass specimen trees; the result of which would be to open up that part of the gardens and give them a more park-like appearance than they now have, while the avenues and intervening woods, looked at from the Pond, would in no way seem to be altered. These clumps might now and then be wholly replanted or intermixed, and a new contour given to the ground; existing clumps, too, might be intermixed with new material, and in that way fresh plantations would by degrees replace the old ones. As to the ground being too wet on the lower side of the Round Pond, that may have some effect on the premature decay of the trees, but exhaustion of the soil is doubtless the main cause, for if your correspondent will examine the trees on the higher or north side of the pond up to where the old Scotch Firs once grew, and where one still remains—a fine picturesque tree—he will find the trees there, which are principally Limes, as stag-headed and in as bad condition as those on the lower ground, to which he alludes; thus showing that wet at least is not the sole cause of decay. In natural woods the stronger trees outgrow the weaker ones, and thus make room for themselves, while the fallen leaves annually afford food for their roots; but in Kensington Gardens the leaves are continually cleared away, and, owing to the

thick way in which the trees are allowed to stand, the natural result is premature decay through exhaustion. The remedy, is, therefore, clearing—viz., judicious thinning, not all in one season, but during several successive ones—operations which should be done in such a way as to produce the best landscape effects. Your correspondent is strictly conservative at least as regards trees when he would confine us to the few which he has named. Had Bishop Compton and the Duke of Northumberland been equally scrupulous about innovation, we should never have had the fine examples of American trees which now exist at Fulham Palace and Syon House. In the family groups which I recommend would, of course, be planted all the proven smoke-resisting trees which your correspondent names, but along with these would be intermixed trees of more recent introduction. These would in time require thinning, when it would be seen which were succeeding and which were not, and the latter could of course be removed, leaving only such as produced the best effects. These, if properly named, would give intending planters a better idea as to what to plant than having recourse to a nursery for such information, which in that case could only be derived from trees of comparatively small size. Variety, too, is interesting, and now that we have such a rich store of material with which to work I can see no reason why we should not obtain it in our London and other public parks, and that, too, without the risk of failure. *Joseph Newton, Landscape Gardener.*

Bulb Culture in England.—At p. 299 are some remarks upon bulb culture being confined to certain localities, and as regards Dutch bulbs there is no doubt a great deal attached to the name. But it appears to me, following up those remarks, that there are plenty of places in Lincolnshire, in Ireland, and elsewhere, where the same amount of success might be obtained as in Holland, if only the proper treatment was accorded. The soil around Haarlem appears to be a water deposit of light sandy material, with water constantly standing at some little distance from the surface. Whether the roots reach this at any period of their growth, or whether the aqueous vapour constantly rising adds to their success, are questions that might be easily solved. Of late years the demand has largely increased both here, in America, on the Continent, and even at St. Petersburg. With us there is now springing up a strong taste for window-plant growing, and if the Hyacinth could be brought within the reach of this class it would soon be popular, and, all things considered, might make their culture at home worth a trial by some enterprising person having suitable land. We tried the plan ourselves years ago under adverse circumstances, and found no difficulty in getting second-class bulbs, but the cost was more than we could buy them for. Our object in trying was to get a quantity for spring bedding, so that large bulbs were not the object. It is besides certain that such attempts will never succeed in places where a multiplicity of things require attention; in any such undertaking attention should be undivided. *J. F.*

Notes from the Potato Show.—"A. D." was mistaken when he stated (p. 431), respecting the recent International Potato Exhibition, that "the premier place was taken by Mr. Fenn's fine kidney International." As at the two preceding International exhibitions this position was held by Snowflake, though on this occasion by only a very small majority. This year seventy-three dishes of that variety were staged, in 1877 eighty-six dishes, and in 1876 104 dishes, the large number of that year being accounted for by a special class being devoted to it, the same as for International at the recent show. International is undoubtedly the handsomest white kidney grown, and a very heavy cropper, but unfortunately it is of inferior quality—a fact of which Mr. Fenn tells me he was fully aware, but that it was sent out in consequence of the increasing demand for large show varieties, of which this is one of the finest. In looking over my note-book I find the following notes, made at the time of lifting the new varieties shown in the 1st prize collection in class G, grown from single eyes or parts of eyes. Triumph averaged fourteen tubers per root, weighing 4 lb., haulm 16 inches high; Beauty of Kent (a seedling from Snowflake) averaged sixteen tubers per root, weighing 4½ lb., haulm 20 inches; Beauty of Hebron averaged thirteen tubers, weighing 4¾ lb., haulm 18 inches; Trophy ten tubers, weighing 4¼ lb., haulm 36 inches; Early King ten tubers, weighing 3 lb., haulm 36 inches; Manhattan averaged seven tubers, weighing 3 lb., haulm 36 inches: this variety was planted very late. Of these Triumph, Beauty of Kent, and Trophy are likely to attain a foremost position in general culture, as well as on the exhibition table. The two former are preferable, on account of their being second earliest and of dwarf or medium habit of growth. Trophy is a later kind, and therefore likely to suffer from the disease. Beauty of Hebron is Early Vermont in every respect except the colour of its tubers. Early King, although of very good quality, is deficient in productive powers, and therefore not likely to be very extensively grown. Manhattan, producing large tubers with coarse flesh, is useless except for baking purposes. Of the Potatos staged for competition at the International Exhibition of the present year there were represented 131 English and 37 American varieties, with 1039 and 500 dishes respectively, making a total of 1539 dishes, including 168 varieties. The following are the kinds of which ten samples and upwards were shown:—

English Varieties.

	Dishes.		Dishes.
Ashleaf, Myatt's	17	Lye's Favourite	25
,, Purple	14	Magnum Bonum	62
,, Royal	15	Model	31
Ashtop Fluke	15	Paterson's Victoria	25
Blanchard	35	Porter's Excelsior	40
Bountiful	16	Rector of Woodstock	34
Covent Garden Perfection	31	Red Emperor	48
Early King	20	Red Fluke	10
Goribaldi	24	Reidskin Flourball	18
Giant King	12	Salmon Kidney	14
Grampian	59	Schoolmaster	70
International	66	Scotch Blue	23
King of Potatos	13	Wonderful Red Kidney	10
Lapstone	16		

American Varieties.

Beauty of Hebron	16	Early Rose	30
Bresee's Peerless	16	,, Vermont	26
,, Prolific	31	Late Rose	22
Brownell's Beauty	32	Manhattan	10
,, Superior	23	Ruby	15
Carter's Breadfruit	23	Snowflake	73
Centennial	15	Triumph	27
Climax	16	Trophy	41
Early Goodrich	17		

James Pink.

"A. D." and the Captious Critic.—It would appear that should any one differ in opinion from "A. D." he must be "a captious critic of a certain knowing school," but if there is one person that deserves that title it is most certainly "A. D.," for he is without doubt a captious critic, as your columns of late amply testify. I assert, without any fear of contradiction, that the true old Fortyfold of my boyhood is yet one of the very best of Potatos. It is a heavy cropper, white, mealy, excellent in shape, without deep eyes, tolerably early, and of full medium size. What more is required in a Potato? True, it is not often seen on the exhibition-table—the same may be said of the old Beechwood Melon, but this does not detract from its merits. Very many now seen on the exhibition-table will never be seen at all on the dinner-table, for like the majority of the new Peas, for instance, they are fine to the sight but most unsatisfactory to the palate. I do not think I am so very ignorant of Potato lore. Between the years 1853 and 1859 I grew 169 so-called varieties of Potatos, and of many of them I gave at that time full descriptions in these columns and in the *Journal of Horticulture*, and, as many of the craft in Worcestershire will remember, I used to stage from forty to fifty sorts at a time on the exhibition-table, and was as enthusiastic in their culture as "A. D." Now, in looking over the names of those exhibited at the Crystal Palace, I find but very few that were grown by me in those years. Where are they gone to? Have the sorts been newly christened? I dare to tell "A. D." that there were quite as handsome Potatos in those days as are to be found in 1878. I have but little time for reading or writing now-a-days or I would enter more fully into the subject, but I may now state that I see no reason why "A. D." should be so wrathful because other people chance to differ from him. I simply stated at the Palace that few Potatos, if any, beat the following, taking them on all points:—First, the true old Ashleaf, for earliness and excellence of quality (more productive varieties of the Ashleaf type I know are to be found); second early, the Fortyfold, described above; third, for summer crop, the true Lapstone Kidney (perhaps the finest flavoured Potato known); and for winter crop, the true old Yorkshire Regent. Am I to be called a captious critic for stating that which I know to be not far wrong, and which I still assert? *Edw. Bennett, The Nurseries, Rabley, Herts.*

Hardiness of Plants: a Word of Warning.—I have seen so many remarks lately, both in your and other horticultural journals, about the hardiness of certain plants which used not to be thought hardy in ordinary situations, that I venture, as an old gardener, to say a few words of warning. I should remind your readers that not only has the extreme cold of several successive winters been moderate, but for a still longer time the frosts we have had have taken place under circumstances very favourable to horticulture. In almost every case where the temperature has fallen below, say, 16°, the ground has been well covered with snow; also the frosts have been in mid-winter, neither early nor late. In the twelve years between 1853 and 1865 we had three or four winters more destructive to nearly hardy plants than any single winter has been since: the cold was more intense and the circumstances less favourable. In the case of such bulbs as Tritonia, Ixia, Gladiolus, it would perhaps be practicable to make a table of the degree of cold each will stand without being killed. I have fancied that I have made out from experience that Tritonia aurea is killed if the bulb is reached by about 10° of frost. Of course I understand that it may survive underground a far greater degree of atmospheric cold, according to its depth and other protection given to it. Bulbs are the easiest things to protect in winter provided they will not grow too soon; but there are many other plants which few people in the South of England think of protecting now, such as Tritoma Uvaria and Pentstemon gentianoides, which were killed off more than once in my garden at Eton in the cold period mentioned above, though no winter in the last twelve years has killed them. For the last winter or two slugs have been far more destructive than frosts, and whilst things really hardy, such as herbaceous Delphiniums and double Pyrethrums have failed to appear above-ground at all where these pests abound, Calceolarias and tender Fuchsias have survived to an unusual extent. A good indication of the length of time since a destructive winter frost occurred is afforded by Laurus nobilis, which is now commonly seen in cottage gardens in this neighbourhood, 10 or 12 feet high, not having been killed to the ground for ten years or more. In the preceding ten years they never reached a third of that height in the same situation. The consequence of a series of mild winters is that gardeners are becoming presumptuous, and seem to think that we are to be for ever exempt from destructive winters, and treat things as hardy of which they will perhaps next winter lose their whole stock from frost—a leading nurseryman is now advertising Salvia patens as quite hardy, a statement which few will find supported by experience. Those who are prudent will imitate the railway passenger in *Punch*, who was induced to buy an insurance ticket on being told by the clerk that the next accident was several weeks overdue. The next destructive winter is several years overdue, and they had better make their arrangements accordingly. *C. W. Dod, Eton.*

Tropæolum speciosum.—At p. 479 a correspondent asks for information how to persuade seeds of this plant to germinate. I have not had any experience with seeds of Tropæolum speciosum; but I was very successful some years ago in getting a quantity of seeds of T. tricolorum to germinate. The plan adopted was to steep the seeds in water, to cause the outer shell or covering to soften. I do not remember how long they were left in the water, probably about twenty-four hours, it may be more or less; but it is necessary to let them remain in the water only until with the point of a penknife a small portion of the outer covering can be taken off without injury to the seed. By the direction of the gardene to whom I was foreman I steeped a quantity of the seed in water, and when the outer covering got sufficiently soft I removed a small piece from off each seed. The seeds were then sown in pots which were placed on the hot-water pipes of a Pine stove, near to the glass, when a strong bottom-heat was kept up. All or most of the seeds germinated. I should think that seeds of T. speciosum treated in a similar way would germinate. Your correspondent, "C. E. F.," or some of his friends might try. *M. S.*

Fuchsia Venus Victrix, &c.—Your correspondents are right as to the name of the raiser of the above, and the year it was first distributed to the public. I believe it was raised in 1839, and the first plant sent out was purchased by Mr. Read, then gardener to Lord Abergavenny. My father, who was at that time gardener to the Marquis of Camden, was also one of the first to receive it. Dr. Jephson and Purity were both raised some years later, and were sent out during the time I was apprenticed to the late Mr. Gaines, the eminent florist of that day. Duchess of Sutherland was of a still later date. The stock of this was purchased by Mr. Gaines, and sent out by him. I am not sure if there are many white Fuchsias superior to the latter, which was distributed in the year 1845. *Edw. Bennett, Rabley, Herts.*

Autumn-Bearing Raspberries.—I can bear testimony to the value of Raspberry Belle de Fontenoy. I have grown it now two years. The old October Red is also very useful, for I have had abundant crops off that kind the past nine years without a break. Those who can keep Red Currant Raby Castle in good condition till the end of October also know the value of the autumn-bearing Raspberries for tarts; Currant and Raspberry tarts in September and October are highly prized. But these Raspberries will not succeed in the North beyond a certain line. *W. W.*

Clay's Fertiliser.—I have been using this manure now for about twelve months, and the results have been most satisfactory. As far as I can judge it is far superior to any other artificial manure. All plants appear to benefit from it, as it not only gives extraor-

dinary vigour, but increases the size and intensifies the colour of the blooms. I have now some specimen Chrysanthemums that have been grown with it, which I think I may venture to say are the finest plants that have ever been grown, many of them measuring 4 feet 6 inches over, and which I shall be glad to show to any one feeling interested in the matter. *James Forrester, Spring Grove Lodge, Isleworth.*

— I quite think, as your correspondent, Mr. Wiggins, says, that Mr. Clay should extensively advertise the "Fertiliser." I have on several occasions heard of extraordinary results being obtained by florists and gardeners who have used it, and I wish to say that the effects produced upon plants to which I have applied it far surpassed anything I anticipated or could have believed. I had over 300 blossoms at one moment on a small Fuchsia in a pot—the previous year it had about fifty. A small-leaved Begonia was increased to five times the size it had been in any previous year, covered with blossom and a marvel for its beautiful foliage. I think a genuine article as this appears to be, ought to be noted in a paper such as yours, and Mr. Clay should advertise it freely. *J. Durrant*, 16, *Cannon Street, E.C.*

A Monster Mushroom.—In the struggle for existence it is a well-known fact that plants get distorted, and hence instead of round-headed Mushroom-shaped Fir trees, we have woods of tall slender poles, so tall and so thin that if it were not for the tuft of green leaves on their tops it would be difficult to say whether they were Bamboo poles or Spruce Fir. It is only when some straggler standing alone feathers to the ground that we become aware of the true character of the plantation, if plantation we may call it, that has never been planted by human hands, and of whose history and beginning we can only conjecture. It is true that the annual rings of wood give us a clue to the age of the trees of the primæval forest; but if we are to credit opinions lately promulgated, what are we to say to forests above forests three or four deep which have long ages ago passed into the region of geology, buried in everlasting oblivion, just as if the face of the earth in our day had been made up of old materials, put together to baffle the wisdom of the wise, lest they should find out the secrets of creation. The commonest things of the lower order of plants are equally wonderful with the higher organisms, and things that are but of yesterday and continue only for to-morrow—the creatures of a day—are even more wonderful than those that take days to come to maturity. It was but a week or two since that Richard Hargreaves, porter at the Langho Railway Station, found in a field there a Mushroom 36 inches in circumference and weighing 1 lb. 9 oz. During all the years that I have grown Mushrooms indoors I have seldom seen one that would weigh the 9 oz., leaving out the 16 of this Langho specimen. The late I. K. Brunel, Esq., found one on his estate near Torquay that would be nearly half the size of this one. The field had been manured with guano and pretty heavily salted, and the fairy rings all over testified that something had touched their susceptibilities; but although the Mushrooms there became rather a nuisance than otherwise, on account of their number, there was nothing to be wondered at either in their size or in their weight. Some may say it was because the Mushroom was allowed to grow to its full size, by being unmolested or by having only one stem instead of many to fight for the superiority, as in crowded plantations. I have often had a Mushroom shelf covered with a close crop, white and clean, and some fine large ones that had grown head downwards out of the ribs of the shelf, and might have been some 5 or 6 oz. in weight. I may remark in passing, that whoever gathers Mushrooms should never turn them upside down, but hold them in their natural way with one hand and cut off the stem and earth with the other, for if once dirt gets between the gills there is no means of getting it out after. There is nothing hidden in the culture of Mushrooms: we see the plant in the state of white threads of excessive fineness—we see it, moreover, as white mould in the spawn of commerce; but the mystery is, that out of such miserable beginnings such important ends are gained, and that out of a fairy ring only a foot in width and depth there should rise fresh and fragrant a lump of human food nearly equal in weight to a half-quartern loaf, and in flavour equal to any known vegetable. And how long were those threads in elaborating this luxury? The Orange has ripe fruit and sweet flowers on the tree at one time, and it takes a year to do its work; the Melon will take four months; and even the Potato, "the blessed fruit that grows at the root," will take three to four months to come to maturity, whilst the Mushroom in question would do its work above-ground in a week. Botanists reckon that Mushrooms are propagated by spawn and by spores—that they have two strings to their bow. The threads in the fairy ring proceed slowly, travelling at the rate of about 3 feet in as many years, but by spores from the fruit the perfect Mushroom, the species would be propagated far and wide by millions. The wonderful Lancashire Mushroom, as well as the Devon one, were both true Agarics, easily satisfying the sight and smell by the salmon-coloured gills and the tempting odour of their flesh. I should be glad to learn if any of your readers or correspondents have bagged a better Mushroom than Richard Hargreaves. *Alexander Forsyth.* P.S. I have been told of one to-day that was found by a navvy near Cheadle Hulme Railway Station at the bottom of a turf bank a trifle more in diameter than the length of his boot—say 13 inches. *A. F.* [A Mushroom was "bagged" at Loughton, Essex, on Sept. 27, 1859, which measured 11 inches in diameter, and weighed 1 lb. 10 oz. EDS.]

The Potato Disease.—On August 16 a beginning was made with the lifting of early Potatos in the field here. They were a splendid crop, and the tubers large and plentiful. The soil is a hot, shallow, sandy loam, and finding the late sorts going a little brown in the leaf the lifting was continued until we had got in about a quarter of an acre. On the night of the 23d there came about midnight a severe thunderstorm with a heavy downpour of rain, and for three weeks afterwards there was no chance of commencing again, owing to the wet state of the ground. When we did commence it was found that one-half, and in some sorts more, was useless from disease, and up to this time they continue to go off. In 1 acre there was not so many sound Potatos got as in the quarter, and, what is of more importance, there is not one diseased tuber among the latter. In a garden consisting of heavy loam inclined in wet weather to be like clay there was before the wet a fine crop of what is known about here as Beaconsfield Kidney, also about a dozen of the newest varieties, American and home-raised. Of these there was only a few small ones left of one or two sorts after that rain. *J. F.*

The Gros Colman Grape.—As M. Leroy once told me the proper name of the Grape Gros Colman should be Gros Colmar, from a city of France in the department of the Haut Rhine, from whence no doubt it would have its origin. In 1863 I got a collection of fifty French Grapes from M. Leroy, and this kind was amongst it, but it was rendered useless on account of its bad flavour—a verdict, however, not justified, as the Vines were not grown in a large vinery but in a cramped pit. I have no doubt myself but the proper name is Gros Colmar, as I have expressed to a few Grape growers already. *Henry Knight, Floors.*

The Hollyhock.—We have been looking over our stock of Hollyhocks, and I am glad to say there is not a vestige of the disease to be seen upon them, nor has there been all through the summer. Last autumn I decided to leave the whole stock out all the winter, which proving to be very mild and with very little frost, almost every plant lived, and they have flowered finely this season. *J. Downie, Pinkhill, Edinburgh.*

Aloysia citriodora.—I have sent half-a-dozen spikes of Sweet-scented Verbena for your inspection. We have three large beds of them, and at present they are a sight worth seeing. We cut them down close to the ground annually, and from what I have sent you will see what growth they make. I don't think they are quite so good this year as formerly, but, taking into consideration that they are grown in Northumberland, I think they are good. I should like to know if you have seen anything better. *D. Inglis, Howick Hall, Lesbury.* [Most extraordinary growth. Annual shoots between 5 and 6 feet high, and fully half an inch in diameter. EDS.]

The Scabious.—I have enclosed a few flowers of Scabious of the new dwarf variety, than which a more useful thing it is impossible to find for decorative purposes. We sow the seed in heat in February or March, harden the plants, and prick them out in a border. I have a bed about 4 yards square on a west border, which has been literally covered with flowers of every shade of colour. Where decoration is carried out extensively, no more useful flower could be found, for it is so floriferous. From May we have been daily cutting largely, and unless severe frost sets in we shall continue to do so. We have had two white frosts, but they received no injury. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

Verbascum Blattaria.—Along with this I send you a specimen of the beautiful Verbascum Blattaria (Moth Mullein). It may not be generally known to those of your readers who take an interest in wild flowers that this Verbascum is very common in South Wilts, at least in this neighbourhood. During a recent ramble I had the pleasure of seeing a whole bank literally covered with it. Such a charming sight, to a lover of wild flowers, is worth going a walk of 20 miles to see. In Bentham's *British Flora* the flower is described as being yellow or rarely white, but this one (as you will see by the specimen sent) is white and beautifully tinged with light purple. I may also add that there is not the least variation in colour in any of the flowers—I could not find a single specimen of the yellow or white variety. Near to the bank where this Verbascum luxuriates may also be seen two other plants, which, comparatively speaking, are rare, but here are very plentiful indeed—viz., Carduus nutans, Musk Thistle, and C. acaulis, Dwarf Thistle: the latter is quite a gem in its way, having its somewhat large sessile flower-heads supported on stems barely 2 inches high. *J. Horsefield, The Gardens, Heyteshury House, Wilts.*

Burning and Dissolving Bones.—Can you kindly inform me through your columns whether burning bones previous to dissolving them in sulphuric acid impairs their manurial value? By calcining bones they are much more easily pulverised and dissolved than if acted upon by vitriol without previous heating. What I want to know is, Does the burning alter or destroy the phosphate of lime, which is the fertiliser required? *G. T.* [We sent your question to Mr. Bernard Dyer, F.C.S., 17, Great Tower Street, E.C., who kindly replies as follows:—If soluble phosphate only be required, the efficacy of the phosphate is in no way impaired by burning bone. The soluble phosphate existing in superphosphate made from bone-ash and sulphuric acid is identical in properties with that contained in "dissolved bones" made from unburnt bones and acid. Indeed the phosphate is rendered soluble more easily in the case of bone-ash than in that of bones. Of course the whole of the organic matter, and with it the nitrogen, is lost by burning bones; but when the only object is to make a manure containing soluble phosphate, I consider bone-ash decidedly preferable to bones. It would, of course, be excessively wasteful to burn bones at home merely for the purpose of dissolving them, as the value of the nitrogen is thereby lost. Bone-ash (imported chiefly from South America) may be bought through the manure dealers, but farmers should buy it by analysis, as there is great temptation to add powdered chalk and fine coal-ashes—adulterations more or less easily detectable by the eye in the case of bones (except in fine bone-dust), but impossible to detect in bone-ash except by analysis.]

Is Scotland a Part of England for Exhibition Purposes?—Mr. Hibberd is smart in his rejoinder to my communication under this heading on p. 440, but it is no reply to it. It is an attempt to evade the logical consequences of my protest; and drag the matter down to the low level of a personal altercation between Mr. Hibberd and myself. I don't mean to indulge him in a game of play in which he would be certain to come off the victor. Mr. Hibberd tells only a part of the truth. I entered a protest against the admission of Early King Kidney Potato as a new variety, for the weighty reasons set forth on p. 440, and named Messrs. Porter, Hibberd, and C. A. Hooper as referees. It would appear they were satisfied that Early King Kidney was not admissible to compete; but it was suggested as a way out of the difficulty that England did not necessarily include Scotland. This conclusion Mr. Hibberd seems to have fathered with wonderful alacrity; while Mr. C. A. Hooper, the author of the wording of this particular class, and the donor of the special prizes offered in it, ridiculed this interpretation as being altogether opposed to his meaning and intention; but for some mysterious reason or the other it was ultimately acquiesced in, and the Potato admitted to compete. I was quite content to stand by the decision of the referees as to the eligibility of Early King Potato to compete or no, but I did not expect they would set aside my protest and evade its conclusions by a side wind. As I before stated, the committee of the International Potato Show have always employed the term "English" simply to exclude American varieties, and for no other purpose: and that this meaning was given to the term by all the exhibitors at the show is shown by the fact that in the class for twelve English varieties of Potatos every exhibitor staged Scotch Potatos, and with scarcely an exception the French variety, Blanchard, and the prizes were awarded to collections including these. I am not guilty of any impropriety in resisting such action on the part of Mr. Hibberd, because it is laying down a principle foreign to the intentions and wishes of the committee. I leave your readers to judge between me and Mr. Hibberd. Happily his opinion does not in any way bind the committee; but it is unfortunate that by pressing it home as he did it should come about that in class C., for twelve English varieties of Potatos, Scotch Potatos were admitted, while in another class it was decided that a Scotch Potato was not an "English" one for exhibition purposes. I conclude by asserting that Early King Kidney Potato is simply Sutton's King of Potatos under a new name, and I state this on the testimony of Mr. Porter, who "selected" it. *R. Dean.*

Salt.—I have had my attention drawn to a remarkable instance of destruction by salt. It appears that salt has been used rather freely to destroy weeds close to the stone walls of a mansion, and it has destroyed the stones to such an extent that they have had to be

replaced with new ones. As a proof that it was the salt I may say that on one side where there is grass and consequently no salt was used, there is no sign of decay in the stone at all. Do any of your readers know of a similar instance? I am aware that some kinds of stone last much longer than others, and also of the great service that salt is to gardeners, but shall certainly have more respect for the foundations of buildings than for grass edges for the future, and keep further off in using salt. *A. Bradshaw, Calwich Abbey Gardens.*

Cercis siliquastrum.—This fine tree is now in blossom here for the second time this year, a circumstance not very remarkable in itself; but there is this peculiarity—that the blossoms spring, not from branches or spurs, but from the naked stem of a good-sized tree, unaccompanied by any leaves. *G., Bath.*

Tomatos Out-of-Doors.—These I have never known to be so plentiful and fine as they are and have been for the last couple of months. The plants are very vigorous and healthy in growth, and very heavily cropped with fruit of unusually large size, many of them weighing from 10 to 12 ounces each. We grow them very extensively here. *H. W. Ward.*

Plumbago Larpentæ.—Mr. Payne's account at p. 473 of Plumbago capensis reminds me of the lovely Plumbago Larpentæ, or as Sir W. Hooker says, it should be known as Valoradia plumbaginoides. When living in the South of England I had several plants of the above growing in the open borders, producing in late summer a great profusion of its welcome blue flowers at a time when one has to look around for a good variety of flowers for bouquet-making and table decorations. It is perfectly hardy, and should be in every collection of plants either in large or small gardens. *Thomas Carlton, Coollattin Park, Ireland.*

Select Polygonums.—On reading a notice of a few desirable species of the above interesting genus, I am induced to make a few remarks on P. capitatum, a native of Nepal. This species I think quite worthy of a place among those mentioned at p. 497, being a very suitable plant for rockwork or a sunny bank when planted out in spring, and will cover the space of 2 feet or more in diameter, producing its pretty pale pink flower-heads in great abundance, and ripening seeds which come up freely the following spring. From its trailing habit it also makes a good basket plant for a cool greenhouse or conservatory. P. cuspidatum unanum is also a good plant, and deserves to be more extensively grown on large rockworks or in mixed herbaceous borders. This form being so very distinct in general appearance, one might be disposed to call it a species rather than a variety of P. cuspidatum. *C. Green, Gr. to Sir Geo. Macleay, Pendell Court.*

Dean's Snowball Cauliflower.—This variety will not succeed for autumn work with me. I thought it would be more useful than Veitch's Autumn Giant for table (as large heads are not required), but we have not one fit to send in. The Autumn Giants are very fine, beautiful and white, and so close that there is scarcely room to insert a pin's-head. Snowball may do for summer if sown by April 1; I think of giving it another trial, but Dwarf Erfurt has been very good this season on shady, well-dressed ground. *W. H.*

Reports of Societies.

Royal Horticultural: *Oct.* 15.—Such an autumn meeting as that held on Tuesday last the Society has very seldom if ever before been favoured with. The Council chamber was literally filled to overflowing with the best and choicest flowers and fruits of the season, while the vestibule was lined on either side with heavily laden tables of fruit, Potatos, &c., and the centre filled by Messrs. James Veitch & Sons with such a collection of small specimens of hardy ornamental evergreens suitable for outdoor winter decoration as we have never seen equalled at any exhibition before. We cannot remember a pleasanter or more interesting meeting; and it is a matter for great regret that so few of the general public came to see the many really beautiful objects that were exhibited. We cannot blame the Society's officers for not advertising the show, as they cannot take the proper measures for letting the public know of the good things that will be on view, if exhibitors will not let them know in good time what they intend to show. It surely cannot be to their interest to make a show at which only the regular frequenters of such displays will be present, and it must certainly be very disheartening to the Society to be unable to gain any financial benefit from such exhibitions, from the want of a little timely information from the exhibitors themselves. It is much to be desired that some such arrangement should be brought about, and we believe the matter only needs to be mentioned to make sure that in future Mr. Barron will receive the needful hint in time to make proper use of it.

Floral Committee.—Dr. Denny in the chair. Doubtless the most striking individual specimen plant among the many fine things exhibited on this occasion, was a noble example of Vanda cœrulea; a plant with two strong healthy growths, carrying five spikes which bore eighty-seven flowers between them. The same plant was shown last year with four spikes, and it was a real pleasure to see it again in even finer condition. The exhibitor was Mr. W. Smith, gr. to C. Lane, Esq., Badgemore, Henley-on-Thames. The largest collections of plants shown by any exhibitor came from Messrs. Veitch & Sons, who had several objects of great interest to orchidists, in addition to the magnificent collection of evergreens before-mentioned, and which included 106 distinct species and varieties, representing forty-five genera of hardy ornamental evergreens, which, in a small state, are highly desirable subjects for the decoration of flower-beds in winter. Each particular sort was shown by itself in a large flat basket, so that their merits were displayed to the best advantage, and there could be no mistake as to their adaptability for the object in view. Amongst the other subjects exhibited by the Messrs. Veitch were the rare Phalænopsis violacea, flowering for the first time at Chelsea, which received a Botanical Commendation; the white-spathed variety of Anthurium Scherzerianum, which gained a First-class Certificate; the distinct new Lastrea aristata variegata, a thrifty handsome Fern, which promises to become a popular plant, and which also gained a First-class Certificate; a beautifully coloured hybrid Cattleya, named Mastersonii, the result of a cross between a seedling and C. labiata; × Cypripedium vexillarium, another fine hybrid with a highly coloured upper sepal; and a fine panful of Begonia Queen of the Whites. The award made to the collection was the highest Gold Medal the Society gives. Mr. William Bull also exhibited a large and particularly attractive collection of choice plants, principally flowering subjects, and including a terminal umbel composed of eighteen flowers of the handsome Bomarea Carderi (awarded a First-class Certificate); Lastrea crinita, a stately species, with singularly scaly rachides; and Lastrea aristata variegata, both also awarded certificates of the first class; a new but not particularly attractive Masdevallia named velifera, awarded a Botanical Commendation; several flowering plants of the lovely Dendrobium bigibbum, showing a great variation in colour; the Orchid-like Utricularia montana, nicely flowered; a few good Pleiones, together with Odontoglossum Roezlii, Lapageria alba and rosea, and several good fine-foliaged plants: a Gold Banksian Medal was awarded. From Mr. B. S. Williams also came an exceedingly choice group, which included an almost pure white variety of Dendrobium bigibbum, a most charming flower; several pans of Pleiones, such as lagenaria, maculata, and Wallichiana, all beautifully flowered; the showy yellow Oncidium Rogersii, the useful Dendrobium formosum giganteum, rich in flowers and foliage; D. chrysanthum, and Cypripedium Harrisoni, and of fine-foliaged subjects some neatly grown examples of various Palms, Crotons, and Dracenas. Mr. Williams was also voted a Large Gold Banksian Medal. To Mr. Parker, of Tooting, a Silver Flora Medal was voted for a truly grand display of cut blooms of hardy border autumn-flowering plants—a perfect galaxy of floral beauty, consisting for the most part of herbaceous plants, more fully alluded to in previous columns. Messrs. Osborn & Sons also sent a fine group of fine-foliaged and berry-bearing plants, to which a Silver Banksian Medal was awarded. Messrs. William Paul & Son showed a large collection of cut sprays of pictorial trees and shrubs, illustrating the great beauty of the autumn tints assumed by many subjects too little known to planters. The same firm also showed half-a-dozen boxes of cut blooms of very good Roses; and the award of a Silver Flora Medal was made to the collection. Mr. Heims, gr. to F. A. Philbrick, Esq., Q.C., Avenue Road, Regent's Park, sent Odontoglossum Philbrickii, an apparently distinct form with flowers of the shape of those of O. Alexandræ, but cream-coloured and heavily spotted with brown. From Mr. H. Boller, South Row, Kensal New Town, came a strong growing distinct new Mamillaria, named sphacelata, which was awarded a First-class Certificate. Mr. C. Green, gr. to Sir G. Macleay, brought up a cluster of Bomarea Carderi, with forty-eight flowers on it—the largest that has yet been seen, and remarkable besides by showing the flowers with two, three, and four on a spray, two only being the number seen up to this time. A First-class Certificate was awarded. Mr. Green also had the waxy white flowered Dendrobium album, cut blooms of the dense rosy-pink flowered Aster Drummondii; the showy orange-yellow Helianthus orgyalis, and Pyrethrum serotinum, the flowers of which, grown by the waterside, measured quite 4 inches over. The Messrs. Hooper, of Covent Garden, sent a small collection of Gesneras; and from Mr. Cannell came cut blooms of various early flowering Chrysanthemums and single Dahlias, together with plants of Iresine brilliantissima, a warm rose-coloured sport from I. Herbstii. A few new Dahlias came from Messrs. Rawlings Brothers, of Romford; and Mr. Moore sent from the Botanic Garden, Chelsea, cut blooms of several of the old-fashioned single Dahlias, including D. mexicana, coccinea, Cervantesii, Cervantesii lutea, and superflua flammea, &c., which are now attracting notice from their usefulness as vase flowers. Messrs. John Laing & Co. contributed a bright and effective group of seedling Begonias; and Mr. L. T. Davis, of the Ogle's Grove Nursery, Hillsborough, Co. Down, sent several specimens of beautiful and variously coloured berry-bearing Pernettyas, including P. mucronata lilacina, with distinct lilac-coloured fruits, which was voted a First-class Certificate. From the Society's garden, Chiswick, came a capital group of double-flowering Zonal Pelargoniums, principally of M. Lemoine's raising; Begonias metallica and Moonlight, in fine form; a large assortment of herbaceous Asters, and a dozen well-grown specimens of Hemsley's Giant Hybrid Mignonette, to which the committee awarded a Cultural Commendation.

Fruit Committee.—Henry Webb, Esq., in the chair. A more than usually good display of fruits and vegetables of various kinds came under the notice of the committee on this occasion. Perhaps the most important contribution was a collection of remarkably fine examples of about a dozen sorts of Grapes, made by Messrs. H. Lane & Son, of Berkhamstead. Amongst the more meritorious samples were a grand dish of Gros Colman, Lady Downe's, rather small for Berkhamstead, but well finished; Black Hamburgh, good; Dr. Hogg, the somewhat new, round berried, white variety, in as fine condition as it has ever been shown; Alicantes in fine form; four bunches of Muscat of Alexandria of exceedingly fine quality in point of size, form, and colour; Barbarossa, fine in bunch and berry; Trebbiano, very good; Muscat Hamburgh, Golden Queen, and Black Prince, all in capital form. The whole made a very fine display, and the committee awarded the Messrs. Lane a Gold Medal. Another noteworthy example of Grape culture came from Mr. G. Sage, gr. to Earl Brownlow, Ashridge, This consisted of a pot Vine grown in a form suitable to table decoration. We hope shortly to give an illustration of it, and in the meantime need only say that it formed a handsome combination of fruit and foliage that was very greatly admired; and that Mr. Sage was deservedly awarded a Silver Flora Medal. From Mr. Miles, gr. to Lord Carington, Wycombe Abbey, came five exceedingly handsome fruits of the Lord Carington Pine-apple, which, it will be remembered, was first brought under the notice of the committee in December, 1876, and again in January, 1877, when it was considered a most excellent variety for winter use, and was awarded a First-class Certificate. The largest of the five fruits staged to-day weighed 7½ lb.; another 5¼ lb.; two 5½ lb.; and the smallest 4½ lb. The fruit is very handsome in appearance, is of excellent flavour, and has besides the merit of being, in Mr. Miles' opinion, the best keeping variety in cultivation; and which on that account is well deserving of the attention of the growers in the Azores: the committee awarded the exhibitor a Silver Medal. Mr. G. Goldsmith, gr. to P. C. Hardwick, Esq., Hollanden, exhibited an excellent collection of finely grown Pears, and a Silver Medal was also awarded in this case. A large contribution of Apples, some ninety-nine dishes in all, came from Messrs. James Veitch & Sons; and Apples and Pears in considerable numbers were staged by Messrs. William Paul & Son, Waltham Cross; Messrs. Paul & Son, Cheshunt; and Messrs. Lane & Son. Mr. Harrison Weir, Weirleigh, Brenchley, Kent, showed large bunches of the Champion Muscat and Venn's Black Muscat Grapes grown in a cold vinery; and Mr. Goodacre, Elvaston Castle Gardens, sent half-a-dozen excellent bunches of Lady Downe's, which were awarded a Cultural Commendation. Messrs. Rivers & Son sent specimens of several Apples and some seedling Pears; also examples of that fine late culinary Plum, the Autumn Compôte. Mr. James Maulden, gr. to J. S. Budgett, Esq., Ealing Park, showed a couple of large Smooth Cayenne Pines, and received a Cultural Commendation. Some fine examples of the Doyenné du Comice Pears, grown on a pot tree, set in an orchard-house, but ripened out-of-doors, came from G. F. Wilson, Esq.; and Mr. R. Dean, Ealing, showed excellent samples of some three dozen varieties of Potatos of English and American origin. From Mr. McKinlay, Woodbine Cottage, Beckenham, came two dishes of tubers of Sutton's Woodstock Kidney, a smooth, rough-skinned variety, which for good looks, excellence of flavour, and heavy cropping qualities, is all round the best new Potato that Mr. McKinlay has grown. The committee awarded a First-class Certificate. Miss

Emilie L. Lowther, Ryde, Isle of Wight, and Mr. John Redshaw, Fountain Nursery, Bourne, Lincolnshire, each sent examples of seedling Apples, with no apparently striking qualities to recommend them; and in the way of Melons the committee had fruits to taste of a green-fleshed variety named Bayham Hybrid, shown by Mr. W. Johnstone, gr., Bayham Park; and another small green-fleshed variety, named Exquisite, which came from Mr. C. Tyler, The Gardens, Hassiobury, Bishop Stortford. From the Society's garden at Chiswick came samples of a hundred varieties of Pears, several varieties of Endive, one or two of Grapes, and a dish of Baumann's Red Winter Pearmain Apples, a handsome variety of the Blenheim Pippin type, which was awarded a First-class Certificate.

Messrs. Maule & Son, Bristol, showed numerous heavily fruit-laden branches of the new Pyrus Maulei, an ornamental hardy plant, which, in addition to its handsome appearance when fruit bearing, bears large orange-scarlet blossoms in spring. The Messrs. Maule also showed a sample of preserve made this year, and which had a very distinct acid flavour.

There was a poor competition for Mr. Pearson's prizes for the new Grapes, Mrs. Pearson and Golden Queen, and we need only say that the awards were made as follows:—For Golden Queen: 1st, Mr. Atkins, gr. to Colonel Loyd-Lindsay, M.P., Lockinge Park; 2d, Mr. Henderson, gr. to — Deacon, Esq., Mabledon Park, Tunbridge; and 3d, Mr. Anderson, gr. to H. R. Clifton, Esq., Clifton, Notts. For Mrs. Pearson: 1st, Mr. Allan, gr. to Lord Suffield, Gunton Park, Norfolk; 2d, Mr. Taylor, gr. to J. McIntosh, Esq., Duneevan, Weybridge; and 3d, Mr. Goodacre, Elvaston.

The Cryptogamic Society of Scotland.—The fourth annual conference of this Society was held in Edinburgh on October 9, 10, and 11, under the presidency of Professor Balfour, and was in all respects successful. The Council met at the Royal Botanic Gardens on October 9 for the transaction of business at noon, after which a public meeting was held in the lecture hall, which was inaugurated by an address from the President. It became manifest on this occasion that a number of cryptogamists from the South had been arriving at the Northern capital during the preceding two days, and Scotchmen from remote parts of the country gradually made their appearance. The chair was taken by Professor Balfour at half-past one, he being supported by Dr. Buchanan White, the Secretary, the Rev. Jno. Stevenson, the Treasurer, and Mr. John Sadler, the secretary of the local committee. After some preliminary observations on the scope of Cryptogamic Botany, the learned Professor gave a most interesting sketch of the life of his old friend Dr. R. Kaye Greville, and his labours amongst the Cryptogamia, after which a brief allusion was made to the events of the past year, the death of Fries, the literary contributions to the history of the lower orders of plants, and cognate subjects, ending with words of encouragement for the future.

It was then announced that the meeting next year would be convened at Forres, on which occasion there would be no public show. Papers were then read, and communications made, amongst which were some observations by Dr. Parsons, of Goole, as to the desirability of obtaining a census of the distribution of British mosses. Dr. Isaac Balfour described a new Myxomycete, which Professor de Barry had named Cribraria Balfourii. Dr. M. C. Cooke described the structure of the hymenium in Hymenochæte, in a proposed genus called Peniophora, and in Corticium. Dr. Buchanan White of Perth, Dr. Carrington of Eccles, Mr. W. Phillips of Shrewsbury, Mr. John Sadler, the local secretary, and some others occupied the time until shortly after three o'clock with brief communications. Some conversation ensued on the fungi which had appeared in great numbers on the walls and ceilings of the house now occupied by the Regius Keeper, and on dry rot in houses, with the best means of checking it.

In the evening at six o'clock the members and their friends dined together at the Albert Hotel, and the succeeding four hours were occupied in the manner usual on such occasions, with toasts, speeches, and songs.

The following day, Thursday, Oct. 10, was devoted to the excursion to Penicuik Woods (by permission of Sir George Clerk, Bart.). A party of about thirty left the Waverley Station soon after ten o'clock, under the guidance of the indefatigable local secretary. On arrival at Penicuik Station the party were met by Mr. France, F.R.S.E., Sir George Clerk's overseer, and most efficiently conducted by him through the woods. During the day many rare and interesting species were found, and the excursion was enjoyed most heartily by all the company. Not the least acceptable was the *al fresco* luncheon provided by the generous host soon after one o'clock. The experience and practical knowledge of the Rev. John Stevenson of Glamis, Messrs. C. B. Plowright of King's Lynn, W. Phillips of Shrewsbury, and C. Spencer Perceval of Clifton were constantly in requisition for the determination of species. During a walk through the home nurseries attention was directed to a diseased patch in a large bed of seedling Scotch Firs. The roots of these seedlings were white with attached mycelium, which doubtless proceeded from partly decayed vegetable matter in the soil. The plants within a circle of 6 or 8 feet in diameter were all dead with no other sign of disease except the root fungi by which they had been choked to death. It was observed during the day that very many of the large conifers were dying from some disease, which from all appearance seemed to be attributable to something wrong at the roots. During the evening of this and the following day the visitors were sumptuously entertained by the President at Inverleith House.

Early in the morning of Friday the mycologists were on their way to the Botanic Gardens to unpack and arrange for exhibition the contents of from twenty to thirty large boxes and hampers of fungi which had been sent in from the neighbourhood. Soon after daybreak Sir Walter Elliott was one of the first to arrive and unpack his own contributions. Other arrivals continued until eight o'clock, and these laggards then discovered the local secretary still at work grouping specimens for a popular display in the herbarium hall, at which occupation he had employed himself throughout the night. It must be conceded by all that the success of the meeting was mainly due to the zeal and energy with which Mr. John Sadler performed his duties as local secretary; early and late, and even for two nights consecutively without going to bed, he was at work. Unfortunately, such exertions could not be continued with impunity, so that the last we heard of him, as we left the station to return South on Friday evening, was that he had broken down and was ill in bed.

The herbarium hall was filled with tables in every available corner, upon which masses of fungi were grouped on stumps, distributed over sand and moss, and displayed in such ways as to give the public some idea of the great variety of form, colour, and size which prevails in these plants. Here also Arnoldi's models of fungi were exhibited, and one table was devoted to edible and poisonous species. Near at hand the winter garden was cleared of plants on one side throughout its entire length, and tables erected, on which the scientific collection was arranged, according to the sequence of the genera. This collection was displayed under the direction of Mr. C. B. Plowright, and consisted of one or two specimens of all the species collected or sent in for exhibition, with their scientific names attached. This was the first year in which such an arrangement has been adopted by the Society, but the time between daybreak and noon of one day was inadequate to do justice to such an immense collection as was concentrated at the Botanic Gardens on the morning of October 11. It was really a marvel that so much was accomplished in so short a time.

As soon as the doors were opened to the public every table became surrounded, and from that time until closing at 4 P.M. locomotion in the herbarium hall and winter garden was a matter of great difficulty. The interest manifested was so great that it was resolved to continue the show on the following day, which was not at first contemplated. It was well-nigh forgotten to mention that Dr. Parsons, of Goole, collected and exhibited a very excellent series of living mosses, with their names attached.

It would scarcely be advisable to attempt an enumeration of the species exhibited. Of those not previously recorded as occurring in Scotland were Agaricus inamœnus, Agaricus inunctus, Agaricus Phillipsii, Cortinarus decoloratus, Russula Queletii, Hygrophorus russo-coriaceus, Cynophallus caninus, Peziza theleboloides, Hypomyces rosella, Nectria Albertini, Nectria Rousselliana, &c.; whilst the Rev. John Stevenson brought Polyporus roseus and Agaricus scobinaceus from Glamis. The Rev. James Keith sent Hydnum imbricatum and Hydnum fragile from Forres, and the Rev. Mark Anderson brought Peziza ammophila and Agaricus ammophilus from St. Andrews. The Rev. M. J. Berkeley also kindly remembered his Scotch friends, and sent specimens of the new Hygrophorus Wynniæ for exhibition.

There were some other specimens which deserve notice, as, for instance, an enormous Lycoperdon giganteum, some splendid specimens of Polyporus giganteus, and one of Polyporus imbricatus. Half-a-doxen extraordinarily large Helvella lacunosa were collected by the writer of this notice in Penicuik woods; one of these was 5 inches in height and 6 inches in circumference. Beautiful clusters of the delicate Clavaria amethystina, and large masses of Clavaria stricta were also shown, as well as Hygrophorus calyptræformis of the normal colour, with one specimen perfectly white. Dr. Isaac Balfour displayed an excellent collection of Myxomycetes, to which he is fortunately directing his attention. This accession to the ranks of the Scottish mycologists will afford as much pleasure to those on the south as it has to those on the north of the Tweed.

Altogether this Edinburgh meeting has fully realised the most sanguine expectations. The English visitors, without exception, were all warm in the expression of their gratification at the kind and generous hospitality extended to them, and as they, one by one, reluctantly turned their backs on "Auld Reekie," took a last "nip" of whiskey in honour of the "Cryptogamic Society of Scotland." *M. C. Cooke.*



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, OCT. 16, 1878.

Month and Day.	Barometer: Mean Reading at 32° Fahr.	Barometer: Departure from Average of 38 Years	Temperature of the Air: Highest.	Temperature of the Air: Lowest.	Temperature of the Air: Range.	Temperature of the Air: Mean for Day.	Temperature of the Air: Departure of Mean from Average of 60 Years	Hygrometrical Deductions from Glaisher's Tables 6th Edition.: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition.: Degree of Humidity. Sat. = 100.	Wind.: Average Direction.	Rainfall.
Oct	In.	In	°	°	°	°	°	°			In.
10	29.23	−0.166	63.2	40.3	22.9	51.8	+4.4	53.1	90	S S W.	0.18
11	29.82	+0.1	60.6	46.0	14.6	52.4	+1.1	40.9	66	S.W. : W	0.00
12	30.11	+0.1	61.1	42.0	19.1	50.1	−0.9	42.3	75	WSW : SW	0.00
13	30.11	+0.4	68.2	40.0	28.2	57.1	+1.1	41.0	74	N.E. : S.S.W.	0.00
14	29.93	+0.2	63.1	41.5	21.6	51.2	+0.8	45.1	80	E.S.E.	0.00
15	29.82	+0.1	57.1	45.1	12.0	51.0	+0.8	47.7	89	E. : E.S.E.	0.00
16	29.88	+0.1	56.3	49.9	6.4	52.8	+2.8	51.2	94	E	0.00
Mean	29.81	+0.1	61.2	45.2	16.0	52.2	+1.5	46.3	81	variable	sum 0.18

Oct. 10.—Fine, but cloudy and dull at times, with showers of rain. Windy.
— 11.—A very fine bright day. Windy. Overcast at night. Lunar halo.
— 12.—A very fine clear day. Cool.[1]
— 13.—A beautifully fine day. Clear. Fog prevailed in morning.
— 14.—A very fine cloudless day. Breeze.
— 15.—Overcast and dull throughout. Slight break in clouds at noon.
— 16.—Overcast and dull throughout. Damp. Calm.

LONDON: *Barometer.*—During the week ending Saturday, October 12, in the vicinity of London the reading of the barometer at the level of the sea decreased from 30.03 inches at the beginning of the week to 29.42 inches by the morning of the 8th, increased to 29.66 inches by the morning of the 9th, decreased to 29.29 inches by the morning of the 10th, and increased to 30.34 inches by the end of the week. The mean reading for the week at sea level was 29.72 inches, being 0.37 inch below that of the preceding week, and 0.15 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 68½° on the 7th to 60½° on the 11th; the mean value for the week was 64¾°. The lowest temperatures of the air observed by night varied from 42° on the 12th to 55¼° on the 7th; the mean for the week was 50¾°. The mean daily range of temperature in the week was 14°, the greatest range in the day being 19° on the 12th, and the least, 10½°, on the 10th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—Oct. 6, 60°.3, + 7°.4; 7th, 60°.7, + 8°.1; 8th, 59°.4, + 7°.2; 9th, 57°.6, + 5°.7; 10th, 56°, + 4°.4; 11th, 52°.4, + 1°.1; 12th, 50°.1, + 0°.9. The mean temperature of the air for the week was 56°.6, being 4°.7 above the average of observations extending over a period of sixty years.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 136½° on the 7th, 127½° on the 8th, and 126° on the 11th; on the 6th the reading did not rise above 84°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 35½° on the 12th and 39° on the 11th. The mean of the seven lowest readings was 46°.

Wind.—The direction of the wind was S.W., and its strength moderately brisk.

The weather during the week was fine, bright, and warm.

A *lunar halo* was seen on the 11th.

Rain fell on four days during the week; the amount collected was 0.58 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, October 12, the highest temperatures of the air observed by day were 71° at Bristol,

70½° at Cambridge, and 69° at Eccles; the highest temperature of the air at Truro was 64°, and at Liverpool was 65°; the mean value from all stations was 63°. The lowest temperatures of the air observed by night were 34° at Truro, 39° at Plymouth, and 39¾° at both Bristol and Nottingham; the lowest temperature of the air at Sunderland was 49°, and at Bradford and Leeds was 47¼°; the mean value from all places was 42¾. The range of temperature in the week was the greatest at both Bristol and Nottingham, 31½°, and the lowest at both Leeds and Sunderland, 19°; the mean range of temperature in the week from all stations was 25°.

The mean of the seven high day temperatures was the highest at Cambridge, 65¾°, Sunderland, 65°, and Blackheath and Nottingham, both 54¾°, and the lowest at Liverpool, 60½°, and Leicester, Wolverhampton, Sheffield, and Bradford, all 51¾°; the mean from all stations was 63°. The mean of the seven low night temperatures was the lowest at Eccles, 49¼°, Wolverhampton, 50½, and Blackheath and Nottingham, both 60¾°, and the highest at Sunderland, 54°; the general mean from all stations was 52°. The mean daily range of temperature in the week was the least at both Sheffield and Liverpool, 8½°, and the greatest at Eccles, 15°; the mean daily range of temperature from all stations was 11°.

The mean temperature of the air for the week from all stations was 56½°, being 8½° higher than the value for the corresponding week in 1877. The highest were 58½° at Sunderland, and 58° at Cambridge; and the lowest were 55° at both Wolverhampton and Liverpool, and 55¼° at Leicester.

Rain.—The heaviest falls of rain were 1.42 inch at Truro, 1.40 inch at Bristol, and 1.20 inch at Eccles, and the least falls were three-tenths of an inch at Cambridge, Norwich, Nottingham, Hull, and Sunderland. The average fall over the country was 0.71 inch.

The weather during the week was fine, but showery; and the sky cloudy.

A *lunar halo* was seen at Bristol on the 11th inst.

SCOTLAND: *Temperature.*—During the week ending Saturday, October 12, the highest temperatures of the air varied from 66° at Dundee to 57½° at Aberdeen; the mean value from all stations was 63°. The lowest temperatures of the air varied from 42° at Dundee to 48° at Leith; the mean value from all stations was 45¾°; the mean range of temperature from all stations was 45½°.

The mean temperature of the air for the week from all stations was 55¾°, being 7¼° higher than the value for the corresponding week in 1877. The highest were 57°, at Leith, and the lowest 54¼, at Aberdeen.

Rain.—The falls of rain during the week varied from 4 inches at Greenock and 1 inch at Perth to half an inch at Edinburgh and Aberdeen, and the average fall over the country was 1.18 inch.

DUBLIN. — The highest temperature of the air was 69½°, the lowest 41°, the range 28°, the mean 56°, and the fall of rain 1.07 inch.

JAMES GLAISHER.

Obituary.

ON the 10th inst. there expired at Laverstock House, Salisbury, under exceedingly painful circumstances, Mr. WM. WINDEBANK, Jun., of the Bevois Mount Nursery, Southampton, and for some time partner in the well-known florists' firm of WINDEBANK & KINGSBURY of that place. The late Mr. WINDEBANK was in his health and youth an ardent florist and horticulturist, and gave promise of attaining to a good position in the nursery trade in that locality. The Chinese Primula was specially one of his favoured plants, and the collection of some fifteen or sixteen divers kinds and colours he formerly preserved and reproduced from year to year with great care, was perhaps unrivalled for variety or excellence in the kingdom. The small nursery at Bevois Mount—of which, on the dissolution of partnership, he became the sole proprietor—was a perfect bijou of plant-houses and nurseries. Not a foot was wasted, but all was cropped to the best advantage, with a capital miscellaneous collection of marketable stuff, and all as clean as could be desired. Of a quiet and retiring disposition, and suffering much in a social and business point of view from a stuttering affliction, he was yet active and energetic, and carried on the nursery work with great success, and with satisfaction to his numerous customers. During his career—now unhappily cut short at a comparatively early age—he was a strong supporter of the Southampton and other local horticultural societies, and gave his services as judge as freely as his subscriptions and special prizes. For some years he was a regular contributor of horticultural matter in the shape of short pithy notes of a practical nature to the columns of the *Hants Independent*, under the pseudonym of "Blue Apron," and continued so until softening of the brain, following on excessive bodily weakness, rendered him incapable of further exertion. A few months since he was removed to Salisbury, there to breathe his last. His aged and highly esteemed father, the founder of the business, yet survives, and has the earnest sympathy of many sorrowing friends.

Enquiries.

He that questioneth much shall learn much.—BACON.

INSURING GLASS. — Can any of your readers tell me where I can insure glass in vineries, &c., against hail? *J. C. J.*

SCARLET KOHL.—I have received from New Zealand some seeds labelled "Scarlet Kohl." Can any of your readers give me its botanical name? *Arcanum.*

THE FOOD OF THE TORTOISE.—Will you, or any of your readers, kindly give me any information about the proper treatment of a tortoise kept in a cool fernery? What food ought it to have, &c.? Is the land or water tortoise best for such a place? *M. M.*

Answers to Correspondents.

BEGONIAS: *R. McClelland & Co.* A very fine lot; but the sprays had many of them fallen to pieces, so that the flowers and names were detached. Of those which we could identify Butterfly is a fine crimson, with the four sepals large, broad, and equal; the Major is still larger, but the sepals are unequal; Perfection is crimson with an orange dash, with unequal sepals, as also is Coruscans, but with very unequal sepals, two very broad and two longer but much narrower; Popular is of the same type as Perfection. All these are fine and richly coloured, but without named sorts at hand we cannot say if they are distinct. The Bride, with large rounded sepals, blush outside, white flushed with pink inside, is good and novel so far as we have seen. The rest were in the state above described; amongst them we can pick out as large finely-shaped and desirable in colour, a fine light rosy carmine, and a pale orange or flame-colour.

CANNAS: *T. C. G.* You had much better take them up, and store them in pots or boxes for the winter. The stronger growing sorts will stand ordinary winters if planted in well-drained beds; but if you have only a few it is not worth while running any risks.

CHARCOAL BURNING: *J. T. Sinclair.* When the charcoal is sufficiently burnt the fire is gradually subdued by means of pouring water with a watering-pot having a rose on over the covering, a layer of long litter first and ashes afterwards, which is removed by degrees, and moistened as the operation proceeds, until such time as the fire is extinguished, when the heap is opened and cooled down in the same way, after which it is measured off and stored away, care being used to see that no fire exists in it at this time. *G. T. M.*

DERBYSHIRE SPAR: *T. C. G.* Probably from Messrs. F. Rosher & Co., King's Road, Chelsea, S.W.; but we cannot say for certain.

FUCHSIA: *J. Lye.* We have not the named sorts at hand for comparison; but the large light-tubed seedling with a dark red corolla appears to be distinct, and an advance on existing kinds. The globular-budded crimson is also a promising kind. The Pelargoniums had all dropped to pieces.

FUNGI: *C. E. W.* Your fungus, the size of a large pancake, the odour of a jam tart, and the thickness of a dog-biscuit, is a luxuriant specimen of dry rot, Merulius lacrymans.—*W. Pritchard, Shrewsbury.* The name of your beautiful vermilion fungus from garden soil is Peziza aurantia. It is mentioned in our last number, p. 466.

NAMES OF FRUITS: *J. B.* 1, Miller's Glory; 2, Rhode Island Greening; 3, Hormead Pearmain; 4, Franklin's Golden Pippin; 5, Court of Wick.—*C. E. W.* 1, Ne Plus Meuris; 2, Beurré d'Aremberg.—*E. W. S.* not sure; may probably be Beauty of Kent.—*W. C. Pears:* 1, White Doyenné; 2, Beurré Superfin; 3, Duc de Morny; 4, Winter Crassane; 5, Bergamotte d'Esperen; 6, Beurré d'Anjou; 7, too small to be recognised; 9, Uvedale's St. Germain; 10, Styrian; 11, Bishop's Thumb.—*Carter, Page & Co.* 1, Old Pomeroy; 3, 17, 18, King of the Pippins; 7, Emperor Alexander; 10, large Golden Harvey; 20, Round Winter Nonsuch; 11, Golden Noble; 21, 24, Blenheim Orange; 21, Margil.

NAMES OF PLANTS: *H. Calf.* 1, Cheilanthes micromera; 2, Cheilanthes microphylla; 3 and 4 are both forms of Doodia media.—*G. H.* Polygonum cuspidatum. Japan.—We have received the following Ferns to name, without any letter of advice:—1, Lastrea Filix-mas Jervisii; 2, Athyrium Filix-fœmina thyssanotum; 3, Polystichum angulare proliferum; 4, Athyrium Filix-fœmina var.; 5, Athyrium Filix-fœmina crispum; 6, Polystichum angulare parvissimum, apparently. The specimens are however miserable examples of their kinds, and being sent in a manner to ensure their shrivelling, it is impossible to be very certain about them.—*G. G. G.* Stokesia cyania.—*G. M. H.* 1, Ilex Aquifolium Watereriana, Waterer's Holly; 2, Phytolacca decandra; 3, Pteris cretica albo-lineata; 4, Salix pentandra. The rest not determinable.—*W. Sedgley.* Apparently the Cock's-spur Thorn, Cratægus Crus-galli, only there are no thorns on the small sprig you send.—*Fernery.* You have sent far more than our fixed number. 1, Scolopendrium vulgare multifidum; 2, Polypodium vulgare cambricum; 3, P. v. crenatum, probably, but a very bad sample; 4, 5, and 9, are forms of Polystichum angulare proliferum, which can only be satisfactorily distinguished when mature; 4 is probably the var. Holeanæ; and 5 is perhaps var. oxyphyllum; 6, Polystichum angulare grandidens.

PELARGONIUMS AND GERANIUMS: *W. B.* The differences are technical, and have often been pointed out in our columns. In the Pelargonium there is a hollow spur adnate to the stalk of the flower, and there are other differences. Speaking broadly, Geraniums are all hardy herbaceous plants, and their *confrères* are greenhouse shrubs and tuberous-rooted herbs. The common bedding sorts are true Pelargoniums, though very frequently called Geraniums.

SEEDLING TOMATO: *Lawrenson & Strike.* Your seedling is a very excellent one; but, as far as we can judge from three fruits, it is too much like Jackson's Favourite to warrant its being sent out under a new name.

VERBENAS: *J. E. Mould.* Your flowers had collapsed before they reached us, and we could judge nothing of their quality.

VINE MILDEW: *J. O. C.* Stop the manuring, and dress the Vine in winter with Gishurst Compound.

VINES: *Fleetwood.* Certainly pot Vines should do well under such conditions. Black Hamburgh, Foster's Seedling, and Royal Muscadine, are the sorts we would recommend.

VIOLA STRICTA ALBA: *T. S. Ware.* A very pretty white flower, forming a good match for such kinds as Bluebell. The colour is pure creamy white on the face, and very slightly tinted behind, and the flowers are of about the same size as the variety above named. It seems to be in good blooming condition now.

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED:—Thomas Rivers & Son (Sawbridgeworth, Herts), Catalogue of Roses, and Catalogue of Fruit Trees, also Special List of Ornamental Trees, Shrubs, &c.—Mons. Bruant (Boulevard Saint Cyprien, Poitiers, France), Catalogus of New Begonias, &c.—Messrs. Cranston & Co. (King's Acre, Hereford), Catalogue of Roses, also a Descriptive Catalogue of Forest and Fruit Trees, Conifers, &c.—Messrs. Harrison & Sons (33, Market Place, Leicester), Catalogue of Dutch and other Flowering Bulbs.

COMMUNICATIONS RECEIVED:—D. Thomson.—J. J. M.—A. Bryan.—Messrs. Drummond.—G. S.—M. D.—R. D.—G.—G. S.—W. S.

Markets.

COVENT GARDEN, October 17.

Large quantities of Apples are now reaching us from America, and home produce, unless of first quality, will be much depreciated in consequence. Pears are a short supply, both home and foreign, and prices are well maintained. A further improvement in Kent Cobs has taken place. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6– 4 0		Peaches, per dozen	6 0–15 0	
Cob-nut Filberts, lb.	0 9– 1 0		Pears, per doz.	2 0– 6 0	
Grapes, per lb.	1 –– 6 0		Pine-apples, per lb.	4 0– 8 0	
Lemons, per 100	10 0–18 0		Plums, ½-sieve	2 6– 5 0	
Melons, each	1 0– 3 0				

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English (Globe, doz.	2 0– 4 0		Garlic, per lb.	0 6– ..	
Asparagus, Fr. sprue, per bundle	1 6– ..		Herbs, per bunch	0 2– 0 4	
Beans, French, lb.	0 4– 0 6		Horse Radish, p bun.	4 0– ..	
— runners, p. bush.	4 0– 6 0		Lettuces, Cos, Eng., per score	1 6– 2 6	
Beet, per doz.	1 0– 2 0		Mint, green bunch	0 4– 0 6	
Brus. sprouts, bush.	7 0– ..		Onions, young, bun.	0 4– 0 6	
Cabbages, per doz.	1 0– 2 0		Parsley, per bunch	0 4– ..	
Carrots, per bunch	0 4– 0 6		Radishes, per bunch	0 1– 0 3	
Cauliflowers, per doz.	2 0– 3 0		— Spanish, doz.	1 0– ..	
Celery, per bundle	1 0– 2 0		— New Jersey, doz.	0 6– ..	
Chilis, per 100	2 0– ..		Shallots, per lb.	0 6– ..	
Cucumbers, each	0 4– 1 6		Spinach, per bushel	2 0– ..	
Custard Mar., doz.	3 0– ..		Tomatos, per dozen	2 6– 3 0	
Endive, Batav. dozen	1 6– ..		Turnips, p. 12 bunch	3 0– ..	
			Vegt. Marrows, doz.	2 0– ..	

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 140s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6– 1 0		Myosotis, 12 bun.	3 0– 6 0	
Asters, 12 bunches	4 0–12 0		Narcissus, paper-white, 12 sprays	3 0– 6 0	
Bouvardias, per bun.	1 0– 4 0		Pelargoniums, 12 spr.	0 9– 1 6	
Calceolaria, 12 bun.	6 0–12 0		— zonal, 12 sprays	0 4– 1 0	
Carnations, 12 bunch.	4 0–12 0		Phlox, 12 bunches	6 0–12 0	
Cornflower, 12 bun.	2 0– 6 0		Primula, double, per bunch	1 0– 2 0	
Dahlias, 12 bunch	3 0– 9 0		Pyrethrum, 12 bun.	3 0– 6 0	
Delphinium, 12 bun.	6 0–12 0		Roses (indoor), doz.	1 6–12 0	
Eucharis, per doz.	4 0–12 0		— (outdoor), 12 bun.	3 0–12 0	
Gardenias, 12 blms.	4 0– 9 0		Spiræa, 12 sprays	1 6– 4 0	
Gladioli, various, 12 spikes	1 0– 4 0		Stephanotis, 12 sp.	3 0– 9 0	
Heliotropes, 12 sp.	0 6– 1 0		Sweet Peas, 12 bun.	2 0– 6 0	
Hyacinths, Roman, 12 spikes	3 0– 6 0		Sweet Sultan, 12 bun.	6 0– 9 0	
Jasmine, 12 bunches	6 0–12 0		Tropæolum, 12 bun.	1 0– 3 0	
Mignonette, 12 bun.	2 0– 6 0				

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
A-ters, per doz.	.. 4 0-12 0	Ficus elastica, each	2 6-15 0
Begonias, per doz.	.. 4 0-12 0	Foliage Plants, various	
Bouvardias, do	.. 9 0-24 0	ous, each ..	.. 2 0-10 6
Cacteolarias, p. doz.	6 0-12 0	Fuchsias, per dozen	3 0-12 0
Chrysanth., per doz.	6 0-18 0	Hyacin., Rom., doz.	18 0-30 0
Coleus, per dozen	.. 3 0- 9 0	Mignonette, per doz.	3 0- 9 0
Cyperus, do.	.. 6 0-12 0	Myrtles, per doz.	.. 4 0-12 0
Dracæna terminalis	30 0-60 0	Palms in variety,	
— viridis, per doz.	.18 0-24 0	each ..	.. 2 6-21 0
Euonymus, various,		Pelargoniums, scar-	
per dozen	.. 4 0-18 0	lets, zonal, doz	.. 2 6- 9 0
Ferns, in variety, per		Roses, Fairy, per doz.	9 0-12 0
dozen ..	.. 4 0-18 0	Vallota, per doz.	.18 0-24 0

SEEDS.

LONDON : *Oct.* 16.—The seed trade continues to participate in the general dulness ruling on the corn and all other markets ; and a strong disinclination to operate at present in any article is shown on all hands. Cable offers just received from America quote a decline in the value of Western seed of about 1*s.* per cwt. ; but this concession is too small to stimulate business on this side. Mail advices to hand speak less favourably of the yield in certain parts of America. In the important States of Indiana and Michigan the crop is said to prove very disappointing, but more encouraging accounts are forwarded from Wisconsin, Illinois, Ohio, and Minnesota. Home-grown samples of red seed come forward more freely, but the transactions are insignificant. In neither white Clover or Trefoil is there any quotable variation, but in Alsike the tendency of values is downwards. Winter Tares, although prices have fallen to an almost unprecedentedly low point, are quite neglected. For Rye there is also no inquiry. The bird seed trade remains very inactive ; Linseed is quiet but no cheaper. There is a fair demand for boiling Peas—the supply continues temporarily good ; small blues, especially, are offering freely ; many buyers are taking advantage of current low rates to lay in a stock for the winter. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was dull, and prices showed a downward tendency. Not much change, however, was reported in Wheat, the better qualities being pretty well held, for the reason that these were not over plentiful. Barley was very slow of sale, and grinding descriptions were somewhat lower. Malt was quiet, on former terms. Oats were 6*d.* to 1*s.* per quarter cheaper, and difficult to move even at the reduction. Swedish descriptions were especially flat. Maize, Beans, and Peas tended lower, and reduced prices were quoted for flour. The top price of town-made flour was reduced 3*s.* to 4*s.* per sack.—On Wednesday prices all round were with difficulty supported : indeed, where there was any pressure to sell still lower rates were submitted to. The supplies of English Wheat were limited, and the larger proportion was of indifferent quality and condition. Foreign Wheat was in liberal supply, and the market was altogether weak. Oats and grinding Barley changed hands occasionally at less money. Maize had a downward tendency, while distinctly lower prices prevailed for Beans and Peas. Flour was much the same in price.—Average prices of corn for the week ending October 12 : —Wheat, 39*s.* 9*d.* ; Barley, 40*s.* 1*d.* ; Oats, 21*s.* 10*d.* For the corresponding period last year :—Wheat, 52*s.* 2*d.* ; Barley, 43*s.* 6*d.* ; Oats, 24*s.* 9*d.*

CATTLE.

At the Metropolitan Market on Monday there was a large supply of beasts, including over 1000 from America, the trade was consequently heavy for second-rate, but some of the choicest made rather over our top quotation. The demand for sheep increased, but trade generally was not very brisk, and prices advanced a little. Trade was dull for calves, they being more plentiful. Quotations :—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.* ; calves, 5*s.* 4*d.* to 6*s.* ; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 3*d.* to 7*s.* 2*d.* ; pigs, 4*s.* to 5*s.* — The supply of stock on Thursday was not large, but sufficient for the demand. Beasts were a slow sale, at barely Monday's prices ; but sheep, especially fine breeds, were tolerably steady. Calves and pigs sold quietly.

HAY.

The Whitechapel report for Tuesday states that trade was dull, and prices were unchanged. The supply was moderate. Prime Clover, 100*s.* to 117*s.* ; inferior, 80*s.* to 90*s.* ; prime meadow hay, 75*s.* to 85*s.* ; inferior, 40*s.* to 70*s.* ; and straw, 30*s.* to 42*s.* per load.—There was an ample supply on Thursday, and a quiet trade. Straw fetched better rates.—Cumberland Market quotations :—Superior meadow hay, 92*s.* to 100*s.* ; inferior, 70*s.* to 84*s.* ; superior Clover, 128*s.* to 135*s.* ; inferior, 90*s.* to 110*s.* ; and straw, 40*s.* to 45*s.* per load.

POTATOS.

From the Borough and Spitalfields reports we learn that there were moderate supplies of Potatos, and trade was steady at the following prices :—Kent Regents, 100*s.* to 110*s.* ; Essex ditto, 60*s.* to 90*s.* ; Scotch, 85*s.* to 110*s.* ; rocks, 60*s.* to 70*s.* ; Champion, 60*s.* to 80*s.* ; Early Rose, 90*s.* to 110*s.* ; kidneys, 90*s.* to 110*s.* ; Victorias, 95*s.* to 110*s.* per ton.

COALS.

On Monday there was a good demand for house coals, and an advance of 6*d.* per ton was established. Wednesday's quotations were as follows :—Bebside West Hartley, 14*s.* 9*d.* ; East Wylam, 17*s.* ; Walls End—Haswell, 19*s.* ; Original Hartlepool, 19*s.* ; Salvin's Hutton, 18*s.* 3*d.* ; Thornley, 18*s.* 3*d.* ; Tees, 18*s.* 9*d.*

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TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts ; also 80,000 choice Tea scented and Noisette Roses in pots ; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease ; Planting Canes, 3*s.* 6*d.* to 5*s.* each ; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

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SNOWDROPS, large single .. .. per 100	2 6
,, large double .. .. .. per 100	2 9
TULIPS, Van Thol, scarlet	1 6
,, Pottebakker, white	1 6
,, Tournesol, double	1 6
,, Rex Rubrorum, double	0 9
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ANEMONES, splendid double varieties, named, in ten choice sorts .. .. .. per 100 10	6
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12 ,, double white	12 ,, Yellow Prince
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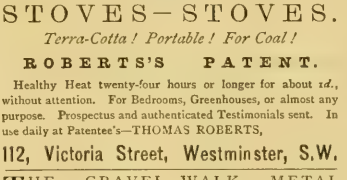
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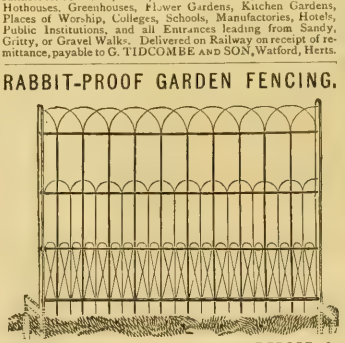
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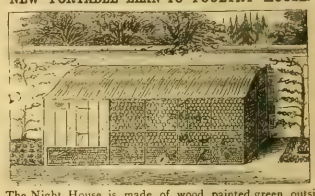


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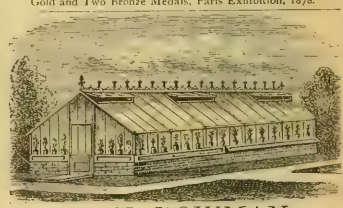
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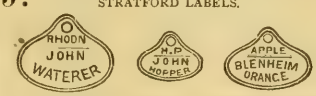
Important references and all particulars from the Patentee, T. W. HELLIWELL, Brighouse, Yorkshire; and 19, Parliament Street, London, W.C.



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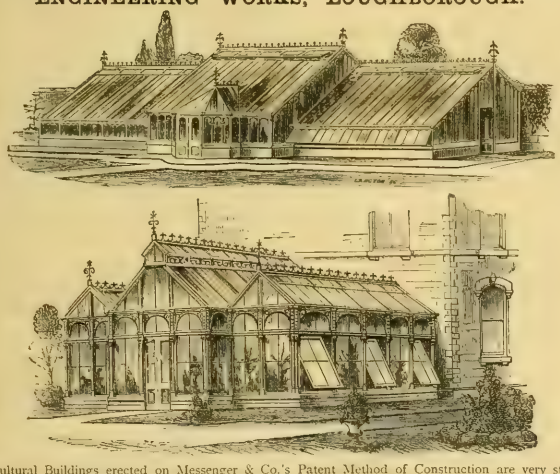


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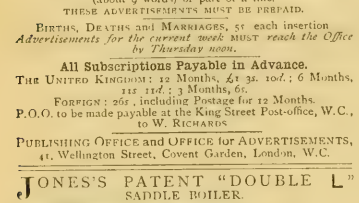
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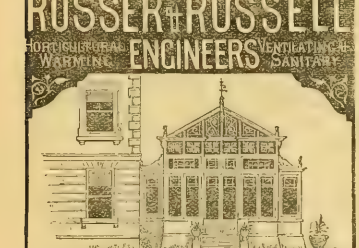
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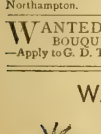
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To the Seed Trade.

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BEGS TO ANNOUNCE THAT HIS

DESCRIPTIVE CATALOGUE of GRAPE VINES,

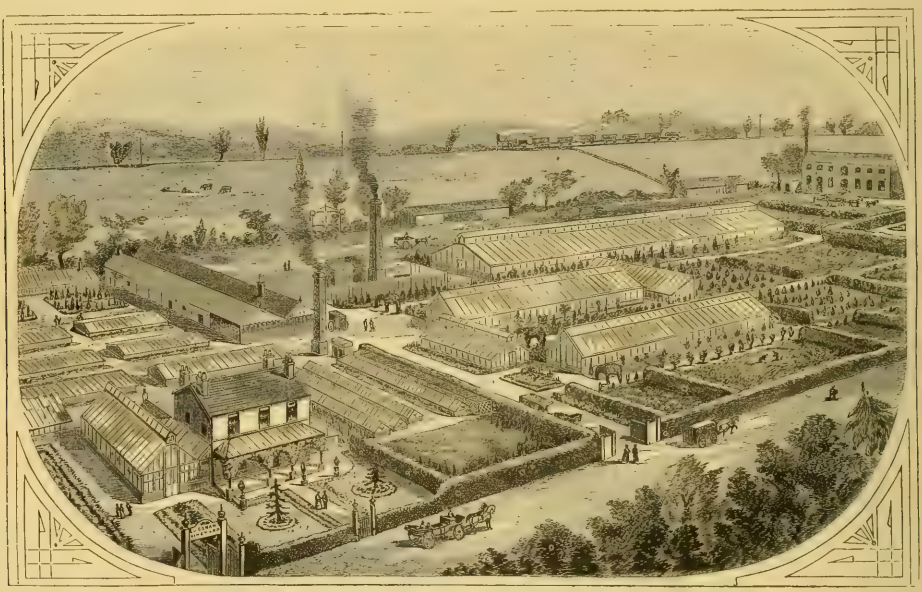
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.

The above Society will hold its ANNUAL EXHIBITION of CHRYSANTHEMUMS and FINE-FOLIAGE PLANTS at the Assembly Rooms, Church Street, Stoke Newington, on TUESDAY and WEDNESDAY, November 19 and 13, when TWO SILVER CUPS and valuable MONEY PRIZES will be competed for. For Schedules and all particulars apply to

JNO. HICKS, Secretary.

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SCHEDULES may be had on application. Entries will be received up to and including Friday, November 15, by

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THE SHROPSHIRE HORTICULTURAL SOCIETY'S SHOW of FRUIT and CHRYSANTHEMUMS will be held at the Music Hall, Shrewsbury, on November 21 next. Applications for Schedules to be made to the Honorary Secretaries,

ADNITT AND NAUNTON, Shrewsbury.

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Particulars of the Prizes, with Lists of Patrons and Subscribers, will shortly be issued, and may be obtained from the Hon. Secretary,

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NURSERY STOCK,

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To the Trade.

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SCOTCH FIR, Seedling, Native, extra fine, 1-yr. and 2-yr.

The above are offered in quantity, and are especially fine.

LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "Newton" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.

Priced CATALOGUE and all information post-free.

CHOICE NAMED RHODODENDRONS.—Fifty Thousand strong bushy plants are offered at £5 per 100, and AZALEAS at 50s. per 100, by

W. H. ROGERS, Red Lodge Nursery, Southampton.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.

The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

CHRISTMAS ROSES.—Large consignment of the above just received in splendid condition, and ready for Sale. Price, post-free, on application to

JULES DE COCK, Nurseryman, Ghent, Belgium.

To the Trade.

STANDARD and DWARF ROSES.—A few thousands of each yet unsold. Plants unusually fine. Price on application.

KEYNES AND CO, Castle Street Nursery, Salisbury.

NEW ROSES.—Mabel Morrison (H.P.), pure white, the greatest novelty of the year. Lord Beaconsfield (H.P.), Ægeria (H.P.), Madame Welch (Tea), a yellow devoniensis. Also all the old and new varieties (dwarf).

Priced LIST post-free.

H. BENNETT, Stapleford, Salisbury.

Roses.

CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready. The Trees are very fine this season.

Fruit Trees.

CHARLES TURNER'S select LIST of the above is also now ready. Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.

CHARLES TURNER'S CATALOGUE can be had on application. The Royal Nurseries, Slough.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.

Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to THE MANAGER, Calcot Gardens, Reading. CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.

Early orders are solicited for the above choice plants. Apply to THE MANAGER, Calcot Gardens, Reading.

SEAKALE and RHUBARB ROOTS, for Forcing, exceptionally fine. For prices and special quotations, apply to

H. THORNTON, 1, Maxwell Road, Fulham, W.

SALES BY AUCTION.

Dutch Flower Roots, for Present Planting and Spring
Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during October and November, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

58, Larkhall Rise, Clapham, S.
MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on TUESDAY, October 29, at half-past 12 o'Clock precisely, STOVE and GREENHOUSE PLANTS, consisting of fine Specimen Plants of Camellias, Palms, Ferns, and other plants suitable for Table Decorations, &c. ; also a well-built GREENHOUSE.
On view the day prior and morning of Sale, and Catalogues had of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Plants from Holland.
MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 30, at half-past 12 o'Clock precisely, Standard and Pyramid and Espalier FRUIT TREES, RHODODENDRONS, Specimen Variegated HOLLIES, Standard and Dwarf ROSES, Deciduous TREES and SHRUBS from Holland ; also an importation of DUTCH BULBS.
On view morning of Sale, and Catalogues had.

Cattleya Gigas, Odontoglossum, Phalænopsis, &c.
MR. J. C. STEVENS has received instructions from THE NEW PLANT and BULB COMPANY, COLCHESTER, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 31, at half-past 12 o'Clock precisely, a splendid importation of CATTLEYA GIGAS, and growing plants, from an importation received end of July, of ODONTOGLOSSUM PHALÆNOPSIS, ONCIDIUM AMPLIATUM MAJUS, the large-blubbed Incurved form of ANGULOSA CLOWESII, &c., and some bulbs of a very rare and beautiful AMARYLLIS, &c.
On view the morning of Sale, and Catalogues had.

Orchids, Bulbs, and Seeds.
MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 31, at half-past 12 o'Clock precisely, a choice Collection of ESTABLISHED ORCHIDS, comprising rare and valuable sorts ; a quantity of healthy plants of Dendrobium formosum giganteum ; 33 plants of Phalænopsis grandiflora aurea from the Tambellan Isles ; 10 good trunks of Cyathea dealbata, from 4 to 6 feet high ; 600 roots of SPIRÆA JAPONICA from Ghent ; 1000 English-grown roots of LILIUM LANCIFOLIUM ALBUM ; 100,000 SEEDS of the new Dwarf PETUNIA, hyb. nana compacta multiflora, raised by Mr. G. Reich, of Herrenkrug, Prussia ; also 1500 strong imported roots of BEGONIA FRŒBELII.
On view morning of Sale, and Catalogues had.

Important Sale ot a Valuable Collection of Established ORCHIDS, the Property of a Gentleman going Abroad.
MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 7, at half-past 12 o'Clock precisely, a choice Collection of ESTABLISHED ORCHIDS, comprising about 90 Plants of choice varieties of Phalænopsis (collected specially), about 50 splendid plants and fine varieties of Odontoglossum Alexandræ, nice plants of O. vexillarium, including one extra dark variety ; O. Halli, O. Phalænopsis, &c. ; a fine piece of Cattleya exoniensis, C. Warneri, a specimen C. crispa, 3 feet through ; Dendrobium Wardianum, D. devonianum, good varieties of nobile, Lælia anceps, with ten spikes of bloom ; Lælia elegans, &c. ; also the only plant in the country of Masdevallia Shuttleworthii ; also some good plants of M. Harryana, Veitchii, Davisii, Lindeni, &c.
On view morning of Sale, and Catalogues had.

English Grown Lilies.
MR. J. C. STEVENS has received instructions from The New Plant and Bulb Company, Colchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, November 8, at half-past 12 o'Clock precisely, a collection of home-grown LILIUMS and other beautiful Hardy Bulbous Plants, including many New and Rare Plants of great beauty, &c.
On view morning of Sale, and Catalogues had.

Unreserved Sales of Dutch Bulbs of superior quality, comprising the finest HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, SNOWDROPS, LILIES, &c.
MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next and every following Monday, at the Mart, opposite the Bank of England, City, E.C., at half-past 12 o'Clock punctually.
P. AND M. will buy for gentlemen who cannot attend.
Catalogues had at the Mart, and 98, Gracechurch Street, E.C.

Tooting, S.W.—Without Reserve.
To NOBLEMEN, GENTLEMEN, BUILDERS, and OTHERS.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exotic Nursery, Tooting, fifteen minutes' walk from Tooting and Balham Stations, on MONDAY and TUESDAY, October 28 and 29, at 12 o'Clock precisely each day, by order of Mr. R. Parker, a large quantity of extra thriving young NURSERY STOCK, remarkably well grown, and in excellent condition for removal, comprising several thousands of Evergreen and Coniferæ Shrubs in specimen borders, admirably adapted for effective planting ; a large quantity of handsome Specimen Coniferæ, beautifully grown and symmetrically formed ; a splendid assortment of Ornamental Forest Trees, fine Fruit Trees in bearing condition, Hardy Climbing Plants, &c.
May be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 28, Gracechurch Street, E.C.

Islington, N.
PEREMPTORY SALE. — The land being immediately required by the North London Railway Company.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Northampton Park Nursery, Douglas Road, North Islington, opposite Canonbury Station, North London Railway, on WEDNESDAY, October 30, at 11 for 12 o'Clock precisely, the whole of the choice ORCHIDS, STOVE, GREENHOUSE, and other PLANTS, comprising several hundred Orchids adapted for cut flowers, 250 Ficus, 400 Dracænas, 700 Adiantum cuneatum, 500 Bouvardias, 7000 Lycopodiums, 2000 Cytissus, 500 Pelargoniums, 5000 Scarlet and other Geraniums, Camellias, Azaleas, large white and other Rhododendrons, &c. ; a brown Gelding, two Market Vans, seven Boilers, quite sound, &c.
May be viewed day prior and morning of Sale. Catalogues on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C.

St. Albans, Herts.
CLEARANCE SALE of 5 Acres of WELL-GROWN NURSERY STOCK, at the Nine Bells Nursery, and also at the New Zealand Nursery, Hatfield Road, St. Albans, four minutes' walk from the Midland Station.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, on THURSDAY, October 31, at 12 o'Clock precisely, a large quantity of valuable NURSERY STOCK, consisting of Hollies, Bays, 1000 large Yews, Limes, fine bearing Fruit Trees ; also a quantity of choice GREENHOUSE PLANTS, including a fine lot of White CAMELLIAS, TEA ROSES on their own roots in pots, strong Bulbs of BEGONIA FRŒBELII, &c.
Now on View. Catalogues may be had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

West Wickham, S.E.
UNRESERVED SALE of THRIVING WELL-ROOTED NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Kirkcaldy to SELL by AUCTION, on the Premises, The Nursery, close to the Swan Inn, West Wickham, on THURSDAY, October 31, at half-past 11 o'Clock precisely, in consequence of the great number of lots, a large quantity of BEAUTIFULLY GROWN NURSERY STOCK, consisting of 3000 common and Portugal Laurels, 2 to 5 feet ; fine Cupressus Lawsoniana, 5 to 6 feet ; 2500 Hollies and Yews, Cedrus Deodara, 3 to 4 feet ; 2000 handsome Spruce Firs, 2000 Scotch Firs, 1000 Pinus austriaca, quantities of Forest Trees, choice assorted Border Shrubs, Standard Roses, and other Miscellaneous Stock.
May be viewed Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.—*Re* Wm Rollisson & Sons in Liquidation.
UNRESERVED SALE of Valuable NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, on the Premises, the Nurseries, Tooting, S.W., on FRIDAY, November 1, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, comprising about 10,000 choice Border Shrubs, varying in height from 18 inches to 12 feet, and consisting of choice Evergreens and Coniferæ, 5000 Ornamental Trees, clean-grown Fruit Trees, 500 Standard, Dwarf, and Climbing Roses, Hardy Climbers in pots, &c.
May now be viewed. Catalogues on the Premises ; of G. WHIFFIN, Esq., the Trustee, 8, Old Jewry, E.C. ; of Messrs. LEWIS, MUNNS, AND LONGDEN, 8, Old Jewry, E.C. ; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Important Sale of a First-class Collection of Dutch BULBS, a superb assortment of 400 handsome Standard, Dwarf, and Climbing ROSES of the best varieties, selected FRUIT TREES, HARDY SHRUBS, AMERICAN PLANTS, &c.
MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on SATURDAY, November 2, at 12 o'Clock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Leytonstone and Wansted, Essex.
FOUR DAYS' IMPORTANT UNRESERVED SALE of VALUABLE NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, American Nurseries, Leytonstone, adjoining the Railway Station, on TUESDAY and WEDNESDAY, November 5 and 6, and at the Branch Nursery, Wansted Flats, formerly in the occupation of Mr. Mumney, about 1 mile from Forest Gate and Leytonstone Railway Stations, on THURSDAY and FRIDAY, November 7 and 8, at 12 o'Clock precisely each day, a large and varied assortment of GENERAL NURSERY STOCK, extending over 30 Acres, viz., fine Coniferæ and Evergreen Shrubs, Ornamental and Forest Trees, Fruit Trees, a superb assortment of Standard, Dwarf, and climbing Roses, Vines, winter-flowering Ericas, and other Greenhouse Plants, &c.
Full particulars in Catalogues, which may be had of the Auctioneers, 98, Gracechurch Street, London, E.C., and Leytonstone, E.

Birkenhead, near Liverpool.
IMPORTANT SALE of SURPLUS NURSERY STOCK, consisting of a fine selection of well-rooted Evergreen and Deciduous Shrubs and Forest Trees, about 7000 Hybrid Seedling Rhododendrons, a fine lot of English Yews, Specimen Hollies, 6000 Austrian Pines, Laurels, &c., Limes, Laburnums, Poplars, &c.
MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Henderson to SELL the above, on November 5 and 6 next, at 11 for 12 o'Clock each day, on the Premises, The Oxton Nurseries, the ground being required for other purposes.
May be viewed any time previous to the Sale, and Catalogues obtained on application to Mr. W. HENDERSON, Birkenhead ; or from the Auctioneers, Messrs. PROTHEROE AND MORRIS, 98, Gracechurch Street, E.C.

Preliminary Notice.—Upper Tooting Park, S.W.—
CLEARANCE SALE on account of this branch Nursery being immediately required for Building Purposes.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Upper Tooting Park Nursery, Surrey, ten minutes' walk from Balham Station, on TUESDAY, November 12, at 12 o'Clock precisely, by order of Mr. C. Young, a large quantity of remarkably well-grown NURSERY STOCK.
Now on view.

Gravesend.
IMPORTANT SALE of valuable NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, the Gravesend Nurseries, on FRIDAY, November 8, at 12 o'Clock punctually, by order of Mr. T. Eves, without reserve, in consequence of a portion of the nursery being required immediately for other purposes, a large quantity of NURSERY STOCK, comprising 1500 Box, 2000 Laurels, 500 Laurustinus, 1000 bushy Aucubas, a quantity of handsome specimen Thuja aurea, clean grown Fruit Trees, comprising 3000 Standard and Pyramid Plums, 1000 Damsons, 2000 Apples, 1000 Pears, 3000 Currants ; Standard Ornamental Trees, &c.
May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Loughton, in Epping Forest.
EXTENSIVE SALE of well-cultivated NURSERY STOCK, in fine condition for removal.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. William Paul to SELL by AUCTION, on the Premises, The Sale Nurseries, Loughton, on TUESDAY, November 12, and four following days, several Acres of first-class NURSERY STOCK, which is in fine condition, having been kept constantly removed.
Catalogues now ready, and may be had on application.

Chertsey, Surrey.
1 Mile from the Addlestone and 2 Miles from the Woking Station on the South-Western Railway.
IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.
MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey to SELL by AUCTION, in October, the STOCK upon the above Nurseries.
May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

Goldworth Road Nursery, Woking Station, Surrey.
MESSRS. ROWBOTHAM AND CO. have received instructions from the Widow of the late Mr. Cobbet to SELL by AUCTION, on MONDAY, October 28, and three following days, the whole of the well-grown NURSERY STOCK, comprising about 10,000 Roses of the best known varieties, a quantity of Trained Peaches, Nectarines, Apricots and Apples ; Standard Pears, Apples and Plums ; several thousand year Thujas, Junipers, Cupressus, Aucubas, Portugal and Common Laurels, Spiræas, Deutzias, Quick, Ash, &c. The whole having been recently moved, are now in good condition for planting.
Catalogues of R. E. GEACH, Esq., Solicitor, Guildford ; and of the Auctioneers, at their Offices, 136, High Street, Guildford, Surrey.

The Dorking Nurseries.
IMPORTANT SALE of VALUABLE and WELL GROWN NURSERY STUFF, SURPLUS STOCK.
MESSRS. WHITE AND SONS will SELL by AUCTION, as above, on MONDAY, October 28, and two following days, at 11 for 12 o'Clock, about 20,000 various TREES and SHRUBS, in good condition for transplanting, including handsome specimens of Wellingtonias, Deodaras, Pinus of sorts, Piceas of sorts, Abies, Thujas, and Cupressus in great variety, &c., in height varying from 10 to 12 and 15 feet ; also a fine lot of Aucubas, Box, Phillyreas, Common and Portugal Laurels, Variegated and Green Hollies ; Irish, Golden, and Common Yews ; Laurustinus, Berberis, Cupressus, Thujas, &c., from 2 to 5 feet in height, and Spruce Firs in all sizes, Green and Variegated Ivies, and a quantity of Rhododendrons, Kalmias, and other Flowering Shrubs ; also a splendid lot of Standard Mulberries, and a Miscellaneous Collection of GREENHOUSE PLANTS, such as Azaleas, Camellias, Exotic Ferns, Palms, Eucharis, Cyclamen, Isolepis, Veronicas, Libonias, &c.
Catalogues may be obtained in due time at Messrs. IVERY AND SON'S Nurseries, Reigate and Dorking, and of the Auctioneers, Dorking.

Brox and Woodham Nurseries, Chertsey, Surrey.
One Mile from the Addlestone and Two Miles from the Woking Station on the South-Western Railway.
By Order of the Executrix.
NOTICE of an IMPORTANT SALE of NURSERY STOCK.
MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Gray to SELL by AUCTION, on MONDAY, October 28, and four following days, at 12 o'Clock precisely each day, the very valuable and well-grown Stock, on the above Nurseries, comprising 5000 Standard, Pyramid-trained, and Maiden FRUIT TREES, all true to name, and best leading sorts ; 3000 Green HOLLIES, 2 to 3 feet ; 500 Variegated Hollies, 16,000 SPANISH CHESTNUT, 3 to 12 feet ; 4000 POPLARS of sorts, 6 to 10 feet ; 11,000 HORSE CHESTNUT, 6 to 12 feet in the Lime ; 5000 Flowering ASH, 5000 BIRCH, 4 to 10 feet ; 500 LIMES, 6 to 10 feet ; large quantity of ASH, OAK, ELM, SYCAMORE, ALDER, Purple BEECH, and other FOREST TREES, 500 Laburnum, 8 to 10 feet ; 1200 Spruce, 2 to 3 feet ; Acer Negundo, Variegated and Common ditto, 6 to 10 feet ; 300 Standard Thorns, 5 to 7 feet ; 7000 Pinus insignis, Strobus, austriaca, excelsa, Laricio, 2 to 6 feet ; 5000 Larch, 3 to 4 feet ; Weymouth Pine, 5 to 6 feet ; 700 Cedrus Deodara, 3 feet ; 1500 Cupressus Lawsoniana, 3 to 5 feet ; 300 Abies Douglasii, 7000 Thuja Lobbii, 5000 Cob Nuts, 3 feet ; 3000 Yews, 2 to 3 feet ; 3000 Hemlock, 5 to 7 feet ; 5000 Common and Portugal Laurels, 2 to 3 feet ; 10,000 Transplanted Quicks, STANDARD ROSES of the most choice sorts ; 6000 Manetti Rose Stocks, Ponticum and Hybrid RHODODENDRONS, BERBERIS, about 125 lots of Choice Mixed Shrubs, suitable for immediate Ornamental Planting.
The Auctioneers have pleasure in inviting the attention of Gentlemen, Nurserymen, and others to this Stock, which is in perfectly safe condition for removal.
May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises ; and of Messrs. R. & J. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

Unreserved Clearance Sale, for the Metropolitan DISTRICT RAILWAY, FULHAM EXTENSION.
MR. MALCOLM SEARLE will SELL by AUCTION, in Munster Lane and King's Road, Fulham, on WEDNESDAY, October 30, at 10 o'Clock, many thousands of fine FRUIT, FOREST, and ORNAMENTAL TREES, choice SHRUBS, quantity of SEAKALE and ASPARAGUS.
Catalogues at 2, Bond Court, Walbrook, City, E.C.

Bridge Nursery, Castelnau, Barnes, Surrey: near the Suspension Bridge, Hammersmith, W.

CLEARANCE SALE of CHOICE and FINELY-GROWN FRUIT TREES, SHRUBS and PLANTS.

To Gentlemen, Owners of Ornamental Grounds, Contractors, Nurserymen, Builders and Others.

MR. J. A. SMITH is favoured with instructions from Mr. Grant to SELL by AUCTION, at the Nursery, near the "Red Lion," Castelnau, Barnes, Surrey, on WEDNESDAY, October 30, at 12 for 1 o'Clock punctually, the carefully selected NURSERY STOCK of about 25,000 very choice Fruit Trees, and well selected and strongly grown Shrubs and Plants, consisting of dwarf, pyramid, and standard trained Apple Trees, of known sorts, including Manx Codlin, Lord Suffield, and others; standard, dwarf, trained and pyramid Plums, Victorias, old and new Orleans, Dancer's No. 1, Kirk's Hybrid, and others; red Currants, Gooseberries, Cob Nuts, red Filberts, also 5000 Lombardy and Black Italian Poplars, Laurels, Scotch and other Firs, white and yellow Birch, white and yellow Spanish Broom, Lilacs, Laburnums, Privet, green and variegated Euonymus, Sweet Briar, Virginia Creeper, golden Honeysuckle, Chinese Arbor-vitæ, Box, and many other choice varieties. The whole have been selected and grown with great care, and are of a quality very rarely to be met with.

May be viewed the day prior and Morning of Sale. Catalogues may be had at the Nursery; the "Boileau Arms," and "Red Lion" Hotel; and of Mr. J. A. SMITH, Auctioneer and Land Agent, 58, King Street East, Hammersmith, W.

Nursery Sale.—Expiry of Lease.

HIGHLY IMPORTANT SALE of Magnificent HOLLIES, &c.

MR. DAVID MITCHELL has been instructed by Messrs. Cunningham, Fraser & Co. to dispose of, by public AUCTION, at their Edge Hill Nursery, Edinburgh, on WEDNESDAY, THURSDAY, and FRIDAY, October 30 and 31, and November 1, each day at 11 o'Clock forenoon, the whole of the SPLENDID HOLLIES growing thereon, consisting of thousands of Golden and Silver Queens from 2 feet to 7 feet 6 inches in height; maderensis and nobilis in quantity, from 3 to 9 feet, beautifully grown plants; splendid lot of Hodginsi, platyphylla, laurifolia, and scotica, all finely formed plants and in the most robust health. Also a magnificent lot of AUCUBA JAPONICA, in sizes. The whole to be Sold without reserve, as the ground has been purchased by the Western Cemetery Company.

NOTE.—The Auctioneer would beg to call special attention to this most important SALE of HOLLIES. The whole of the plants are in magnificent health and well rooted, and can be removed any distance with perfect safety.

Catalogues ready on the 22d inst., and may be had from the Auctioneer, 6, Comely Bank, and the Proprietors, Comely Bank Nurseries, Edinburgh.

Gonville Nursery, Cambridge.

MESSRS. J. SWAN AND SON will SELL by AUCTION, by direction of Messrs. Lyles and Speed, who, having dissolved partnership, are giving up the Nursery, at the above Nursery, on WEDNESDAY and THURSDAY, October 30 and 31, each day punctually at 11 o'Clock, NURSERY STOCK, comprising Standard, Pyramid, and Dwarf Fruit Trees, Gooseberry and Currant Bushes, Standard and Dwarf Roses, choice Coniferæ and Evergreen Shrubs, Forest Trees, Flowering Shrubs, Pictorial Trees, &c.

Catalogues may be had of the Auctioneers, 19, Sidney Street, Cambridge.

The above NURSERY TO LET, with possession.

In Liquidation.—Long Cross Nursery.

1½ Mile from the Virginia Water and Sunningdale Stations on the Staines and Wokingham Railway.

MESSRS. R. AND J. WATERER AND SON have been instructed by the Trustee of the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 11, and following day, at 12 o'Clock punctually without reserve, the whole of the well-grown NURSERY STOCK on the above Nursery, comprising 11,000 excellent Fruit Trees, standard, pyramid and trained Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, all of the best sorts; 18,000 Mussel Plum, Crab and Pear stocks; 1200 Gooseberries; 23,000 Larch, Spruce, and Scotch Firs, from 2 to 3 feet; Lawsoniana, Deodara, from 2 to 4 feet; 16,000 Hollies, from 2 to 3 feet; 500 variegated ditto, 14,000 Rhododendron ponticum, 1500 named Rhododendrons, 300 Paul's Double Scarlet Thorn, 8000 Laurels, from 12 to 15 inches; 5000 Yews, from 2 to 3 feet 6 inches; 5000 Aucubas in 3 layers, 9500 Poplars, from 5 to 9 feet; 14,000 Chestnut, from 3 to 4 feet; 19,000 Beech and Birch, from 2 to 5 feet; 7000 Manetti Stocks, 500 Climbing Roses, 1000 Deutzia gracilis, quantity of Ornamental Shrubs, and other plants. The whole of the Stock is in excellent condition for removal, and particularly worthy the attention of the trade and others.

May be viewed any day previous to the Sale, and Catalogues had seven days prior on the Premises, and of Messrs. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

In Liquidation.—Wellington College Nursery, BAGSHOT, SURREY.

MESSRS. R. AND J. WATERER AND SON are instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 18, at 12 o'Clock precisely, the valuable stock upon the above Nursery, comprising about 3000 mixed Border SHRUBS, 1000 Spanish CHESTNUTS, from 2 to 3 feet; 4000 RHODODENDRONS to name, 1 foot 6 inches to 3 feet; 3400 R. PONTICUM, ditto; 800 AZALEA PONTICA, 3000 MANETTI STOCKS, 500 AUCUBAS, 100 Golden YEWS, 1000 Green and Variegated HOLLIES, from 1 to 2 feet; 250 Pyramid APPLES, 700 CURRANTS, 1500 Scotch FIRS, from 12 to 15 inches; and a large variety of other Plants, including CEDRUS DEODARA, PINUS INSIGNIS, THUJA LOBBII, LARICIO, SPIRÆA, LAURELS, &c.

May be viewed and Catalogues had seven days prior to the day of Sale, on the Premises and of the Auctioneers, Chertsey, Surrey.

Warminster Nurseries, Wilts.

PRELIMINARY NOTICE of an EXTENSIVE SALE of a portion of one of the choicest NURSERY STOCKS in the kindgom, consisting of many thousands of rare Coniferæ, evergreen and deciduous Trees and Shrubs, large quantities of Fruit Trees of all kinds, hardy Bulbs, &c.

MR. WM. ABRAHAM is instructed by the Executors of the late Mr. George Wheeler to SELL the above by AUCTION, without reserve, early in November, further particulars of which will be given in future advertisements.

A Good Opportunity for an Industrious Man.

TO BE SOLD, the Goodwill of a FLORIST and JOBBING BUSINESS, &c., in Kensington. Mr. FLOOD, 12, Holland Street, Kensington, W.

To Florists, Fruiterers, Seedsmen, &c.

FOR IMMEDIATE DISPOSAL, an excellent BUSINESS, at a low price. Everything compact and in full working order. Incoming £400 to £500. Address, for particulars, A. B. C., *Gardeners' Chronicle* Office, W.C.

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AT THE

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To comprise 12 Onions, 3 Heads of Celery, 18 Round Potatos, 18 Kidney Potatos, 6 Turnips, 6 Parsnips, 3 Red Beet, 3 Cabbage, 6 Carrots, 3 Cauliflowers (any variety).

1st Prize	£5	5	0
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For the Best 12 Dishes of Vegetables,

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KALMIA LATIFOLIA.—Well-furnished plants, covered with buds, admirably adapted for potting, 12s. and 18s. per dozen.

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TRANSPLANTED FOREST TREES.—
2,000,000 LARCH, 1 to 3 feet.
2,000,000 SCOTCH, 1 to 2½ feet.
1,000,000 AUSTRIANS, ½ to 2 feet.
500,000 SPRUCE, ½ to 2½ feet.

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CARRIAGE FREE.

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Strong Plants, 5s. each ; Six Plants, £1 ; Twelve Plants, £1 12s.

A beautiful hybrid between Hoteia japonica and Spiræa palmata. It produces a large quantity of white flowers with red stamens.

STRONG CLUMPS FOR FORCING.

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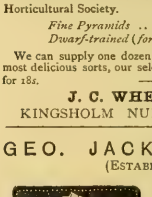
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RASPBERRY CANES, medium size, well rooted, viz., Fastolf and Red Antwerp, at 8s. per 100, or £3 per 1000.
POTATOS, Myatt's Prolific Ashleaf Kidney, 1 ton, first-class sample, warranted true, £10.
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SNOWDROPS of extra quality, clumps of CHRISTMAS ROSES well set with buds, SPIRÆA JAPONICA, GLADIOLUS BRENCHLEYENSIS, BEGONIAS choice named and hybrid seedlings, HYACINTHS, TULIPS, CROCUS, fine home-grown LILIUM AURATUM, LILY OF THE VALLEY clumps, &c., of finest quality only, at low prices.
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This is the only establishment in England where the Rose is grown exclusively on the above stock.
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October, 1878.

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Tasmanian Blue Gum, Evergreen.
A Disease Destroying Tree
Destroys the influence of the miasmatic exhalations from the ground in swampy and malarious districts, acts as a preventive of the miasmata which produces intermittent fever, ague, &c. See *Times*, September 5, 1877.
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Grand Specimens, 7 feet, £5 5s.; splendid plants, 5 feet, £3 3s.; very fine, 3 feet, £2 2s.; stout plants, 2 feet, £1 1s.; nice little plants, 1 foot, 10s. 6d.; 13 for 12; 55 for 50; 115 for 100.
R. HARTLAND, The Lough Nurseries, Cork.

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MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for Covers, PLANTS for Winter Bedding,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
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To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

THIRTY THOUSAND CAMELLIAS, alba plena and other best sorts, all home-grown, well set with bud and very forward. Also many thousand AZALEA INDICA, best sorts, well set for bloom; and hard-wooded HEATHS, half and quarter specimens, fine healthy and well-formed plants. For price and particulars, see *Gardeners' Chronicle* of September 21, 1878.
B. WHITHAM, The Nurseries, Reddish, near Stockport, has the above unequalled collection on Sale.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

TO LARGE PLANTERS, CEMETERY CONTRACTORS, &c.
YEWS, English, 2 to 3, 3 to 4, and 4 to 5 feet.
LAURELS, common, 2, 2 to 3, 3 to 4, and 4 to 5 feet.
LIMES, fine grown, 3 to 4, 5 to 6, and 8 to 10 feet.
CHESTNUT, Horse, 8 to 10 feet.
Special quotations on application, and sample dozen sent to any part of Great Britain.
GODWIN AND SON, Ashbourne, Derby.

PETER DE COCK AND COLLUMBIEN, The White Flower Nurseries, Meirelbeke, near Ghent, Belgium, offer to the Trade :—
SPIRÆA JAPONICA, £5 per 1000.
CHRISTMAS ROSES, £6 per 1000.
AZALEA INDICA, in bud, £2 and £5 per 100.
CAMELLIAS, in bud, £6 and £7 per 100.

LAND SOLD for BUILDING.
40,000 LARCH, strong transplanted, 3 to 5 feet.
20,000 PRIVET, extra strong transplanted.
10,000 APPLE and PEAR TREES, Standard.
300 000 QUICKS, Seedling, 2 and 3-yr. old.
500,000 CABBAGE PLANTS, Nonpariel, 3s. 6d. per 1000.
2,000 RHUBARB ROOTS, Myatt's Victoria (very cheap).
Apply to GEO. WINFIELD, Sandhurst Road, Gloucester.

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WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d.; Planting, 2s. 6d. to 5s.

For Immediate Disposal.

SPECIMEN STOVE and GREENHOUSE PLANTS.
WM. MILES has for disposal some splendid Specimens of the above, consisting of Crotons, Dracænas, Palms, Alocasias, Cycads, Tree and other Ferns—all of which have secured Prizes at several First-class Shows, and to be sold at a considerably reduced rate. For prices and particulars apply to
WM. MILES, West Brighton Nurseries, Cliftonville, Sussex.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

To the Trade.

ROSES.—Standard and Half-Standard, extra fine. Low quotation with Purchaser's selection.
MARECHAL NIEL, in pots, very fine, 75s. per 100; second size, 65s. per 100.
LIST of varieties on application.
GEORGE COOLING, Nurseryman, Bath.

HOLLIES.

ILEX AQUIFOLIUM (The Common Holly).

*** The Hollies grown in the Knap Hill Nursery are altogether unique, having been made a speciality here for the last forty years. We believe that in no other Nursery Establishment in the World, can such a magnificent series of plants be found. We can offer to purchasers a selection from about thirty thousand plants, all of which have been repeatedly and recently transplanted, and which are in the best possible condition for removal.

GREEN HOLLIES.

COMMON GREEN HOLLY, finely grown specimens, 6, 7, 8, 9, 10, up to 15 feet high, well furnished and well rooted.
YELLOW-BERRIED HOLLY, well-grown plants, plentifully berried, 7, 8, 10 to 15 feet high, and as much in circumference.
MYRTLE-LEAVED HOLLY, nicely shaped plants, 6 to 10 feet high, and the same in circumference.
SAW-LEAVED HOLLY, fine pyramidal plants, 8, 10, and 12 feet high, symmetrically furnished.
SCOTICA, or BLACK HOLLY, handsome pyramids, 8, 10, and 12 feet high, and 8, 12 and 16 feet in circumference.
SCREW-LEAVED HOLLY, fine and well furnished plants, 8, 10, and 12 feet high, and 12 to 16 feet in circumference.
HODGINS' HOLLY, one of the finest of all the broad-leaved sorts, good conical plants, 5, 6, 7, 8, and 10 feet high, and completely furnished.
SHEPHERD'S HOLLY, another fine broad-leaved sort, well furnished plants, 10 to 12 feet high, and 16 feet in circumference.
LAUREL-LEAVED HOLLY, pyramidal plants, 7, 10, and 15 feet high, handsome, distinct, and effective.

VARIEGATED HOLLIES.

GOLDEN QUEEN HOLLY, splendid standard p'ants with clean straight stems, of 5 to 6 feet and globular or conical heads, 5 feet deep, and 12 to 16 feet in circumference.
GOLDEN QUEEN HOLLY, half standards, 4, 5, 6 7, to 10 feet high and 10 to 14 feet in circumference, on short clear stems, with heads of various shapes, round, conical, &c.
GOLDEN QUEEN HOLLY, fine pyramids, 6 to 10 feet high, and 12 to 15 feet in circumference.

VARIEGATED HOLLIES.

SILVER QUEEN HOLLY, half standards, 4 to 5 feet high, with fine round, or conical heads.
SILVER QUEEN HOLLY, fine pyramids, 5 to 10 feet high, and 5 to 10 feet in circumference.
The stock of large plants of Golden Queen and Silver Queen Hollies consist of many hundred fine specimens.
WATERER'S HOLLY, 4, 5, 6, and 7 feet high, and 8 to 16 feet in circumference, hundreds of specimens clothed to the ground.
WATERER'S HOLLY, fine large compact headed standards, on 4 to 6 feet stems, with heads 10 to 25 feet in circumference.
Of Waterer's Holly, which originated at Knap Hill, and which is one of the hardiest of the variegated kinds, and from its dense and compact habit one of the most desirable, we possess altogether the largest number of the finest specimens in the trade.
Beside the above, we have magnificent specimens of all the best Gold and Silver striped and blotched Hollies, varying in height from 6 to 12 feet. These plants are all well furnished, and properly rooted.
Purchasers of such plants are invited to pay a visit to the Nursery, and we promise that no disappointment will arise either as to the quantity and quality of the plants, or the prices asked for them.

WEEPING HOLLIES.

GREEN WEEPING HOLLY, standards on clean stout straight stems, 8 to 10 feet high, and loaded with berries, pyramidal plants feathered to the ground, 6 to 8 and 9 feet high.
PERRY'S WEEPING HOLLY, standards, with 5 to 6 feet high stems and fine drooping heads, 10 to 15 years worked.
PERRY'S WEEPING HOLLY, grown as pyramids, feathered to the ground, 5 and 6 feet high; very handsome plants.
*** This variety when clothed with berries, as is frequently the case, forms one of the most attractive objects known to gardens.
NEW GOLDEN WEEPING HOLLY, a very fine new variety, standards, good plants.
WEEPING MILKMAID HOLLY, on 4 to 6 feet stems, with fine drooping heads.

ANTHONY WATERER,
KNAP HILL NURSERY, WOKING, SURREY.

CATTLEYA GIGAS, ODONTOGLOSSUM PHALÆNOPSIS, &c.

MR. J. C. STEVENS has received instructions from the NEW PLANT AND BULB COMPANY, Colchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 31, at half-past 12 o'Clock precisey, a splendid Importation of CATTLEYA GIGAS, and Growing Plants from an Importation received end of July of ODONTOGLOSSUM PHALÆNOPSIS, ONCIDIUM AMPLIATUM MAJUS, the large-bulbed, free-flowering form of ANGULOSA CLOWESII, &c., and some Bulbs of a very rare and beautiful AMARYLLIS, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

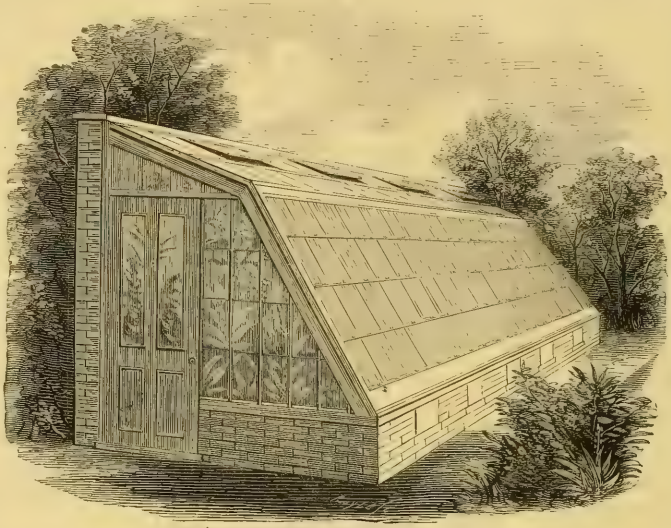
BY HER MAJESTY'S ROYAL LETTERS PATENT.

RENDLE'S PATENT SYSTEM OF GLAZING.

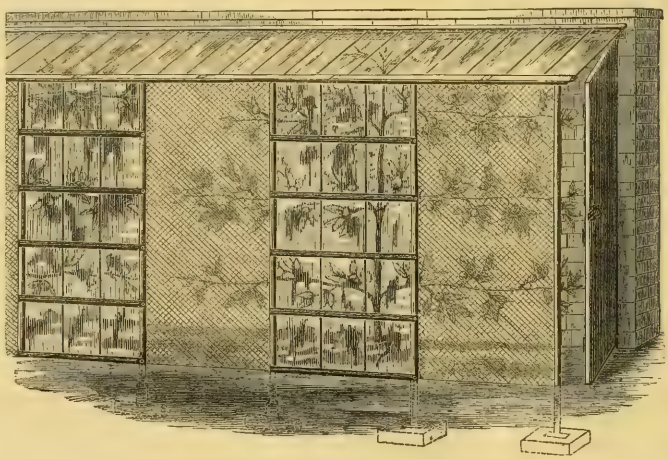
From the "GARDENERS' MAGAZINE," August 31, 1878.

Edited by SHIRLEY HIBBERD, Esq.

FOR a period of 15 years the present gardener at St. Audries tried all that skill and patience could accomplish to secure good crops of fruit upon the trees trained to the walls, but the results were altogether unsatisfactory. In some years, as, for example, when the weather was exceptionally favourable during the early part of the season, the crops were fairly good; but, on the whole, the fruit secured was so small in quantity, in proportion to the labour bestowed upon the trees, that both proprietor and gardener were compelled to come to the conclusion *that the cultivation of fruit trees against open walls was a most unprofitable undertaking.* Accordingly it was determined to abandon the makeshift systems of protecting the trees and erect a substantial structure that would effectually protect the trees from the inclemency of the weather, and at the same time enable the cultivator to have full command over the temperature. *No sooner was this determination come to, than a house was put up, and a more complete success than it has proved to be it would be difficult to conceive.* It is now *five years* since the trees received the shelter of a permanent covering of glass, and every season since they have borne magnificent crops, and demonstrated in the most forcible manner possible the value of glass in fruit production. St. Audries is situate in a reputedly favourable situation, for it is within half-a-mile of the sea on the West Somerset Coast, on which vegetation makes a most luxuriant growth, and if in situations so favourable as this Peach and Nectarine trees will not bear good crops on open walls, it may be concluded that they require protection in situations reputedly unfavourable. The Orchard-house at St. Audries, of which an illustration accompanies these remarks, was built by *Mr. W. E. Rendle, and glazed on his patent system without putty*, which has been fully described in these pages. The house is 140 feet in length, 10 feet in width, 11 feet high at back, and 2½ feet high in front. The back wall is covered with trees, and along the front of the house is a lattice-work trellis, 5 feet in width and 2 feet from the ground-level in front, rising to 3 feet at the back, so that the trees on the table-trellis, as it is called, do not interfere with those on the back wall, which consist of Peaches and Nectarines. The flat trellis is occupied with Apricot and Cherry trees, and one or two Peach trees. They are all, as a matter of course, planted in a well-made border, and, it may be added, are in the best possible health and the foliage perfectly clean. The house is well supplied with water, for the water is laid on and two hydrants fixed, and by means of these and a suitable hose the foliage is washed as often as may be considered necessary and the roots supplied with water.



RENDLE'S LEAN-TO ORCHARD HOUSE AT ST. AUDRIES.



RENDLE'S WALL PROTECTOR AT ST. AUDRIES.

In the management of the trees my friend, Mr. McCulloch, the gardener, considers an abundant supply of water of immense importance during the early stages of growth. Efficient ventilation is provided by openings at the back and front, and when sufficient air cannot be admitted by means of these, a few of the squares of glass are removed and replaced when considered necessary. During the time the trees are in bloom the ventilators remain open night and day.

The Peaches on the back wall are *Victoria* and *Crawford's Early*, from which the early supply is obtained; *Stirling Castle* and *Noblesse*, which attain maturity at mid-season, and *Lord Palmerston* and *Warburton Admirable*, which furnish a late supply. The Nectarines consist of *Elruge*, *Pine Apple*, *Pitmaston Orange*, *Downton*, *Rivers' Orange*, and *Violette Hâtive*. The Cherries on the front trellis are *May Duke* and *Bigarreau*, and the Plums consist of *Green Gage* and other well-known kinds. I did not expect to find the trees trained to the flat trellis so productive as in this instance they are, for trees so trained are not fruitful as a rule. But, no doubt, the abundance of light and the free circulation of air they enjoy contribute in no small degree to their fertility.

A long run of wall, occupied by fruit trees, is covered with what is known as "Rendle's Combination Wall Protector," and, *as in the case of the orchard-house, the results have proved most satisfactory.* This protector consists of a glass coping 30 inches in width, and uprights of glass and network placed alternately, as shown in the accompanying illustration.

The figure will give a better idea of the protector than any written description, and I would therefore direct the special attention of the reader to it. The frames to which the netting is fixed are formed with strips of wood 2 inches in width and 1 inch thick, and they are fixed so that they can be put up and taken down again without difficulty. Mr. McCulloch considers this form of protection more suitable for Apricots and Plums than a permanent structure, and certainly the crops produced have fully justified his holding the opinion he does upon this point. I saw under this covering fruit of the *St. Ambroise* Apricot, which I have not seen for many years past; and altogether the crops produced an impression that will not soon be forgotten. This "combination" protector is the invention of Mr. W. Ingram, the well-known talented gardener at the Duke of Rutland's, Belvoir Castle.

J. C. CLARK.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

RENDLE'S PATENT SYSTEM of GLAZING.

This Invention is now adopted by Her Majesty's Government, all the leading Railway Companies, Public Buildings, Winter Gardens, &c., throughout the Country.

For all other information see ILLUSTRATED CATALOGUES and BOOKS of DESIGN, which can be obtained from the INVENTOR and PATENTEE,

WILLIAM EDGCUMBE RENDLE, 3, Westminster Chambers, Victoria Street, London, S.W.

TREES

FOR

AVENUE AND STREET PLANTING.

*** The Trees here mentioned have been grown expressly for Avenue or Street Planting, for which objects they have had ample room and thorough exposure, and have not, as often happens, been made to acquire height at the expense of stoutness by overcrowding. They have straight stout clean stems, and handsomely-furnished well-balanced heads; and from frequent transplanting are splendidly rooted. They are, without doubt, the finest stock of Avenue Trees to be met with in any Nursery in Europe, and we challenge comparison. The girth of the stems is taken at 4 feet from the ground, and not at the base, which is often deceptive.

PLANES (Platanus occidentalis—the true London Plane).

10 to 12 feet high, girthing at 4 feet from the ground, 4 to 5 in.
12 to 14 ,, ,, ,, ,, 5 to 6 in.
15 to 20 ,, ,, ,, ,, 7 to 9 in.

*** We believe it will generally be admitted that the most successful Avenue in London is that on the Thames Embankment, from Blackfriars to Chelsea, the trees for which were supplied by Anthony Waterer. **Those trees at the time they were planted were altogether inferior to these now offered.**

POPULUS CANADENSIS NOVA.

10 to 12 feet high, girthing at 4 feet from the ground, 4 inches.
14 to 15 ,, ,, ,, ,, 5 inches.

*** This new variety is a grand improvement on the well-known Black Italian Poplar, being more vigorous in growth, with larger and denser foliage. It is the most reliable and satisfactory tree to plant in smoky and exposed districts, and in manufacturing towns, especially in the North of England.

LIMES (Tilia europæa).

12 to 14 feet high, girthing at 4 feet from the ground, 6 inches.
15 to 16 ,, ,, ,, ,, 7 to 9 in.
16 to 18 ,, ,, ,, ,, 9 to 11 in.

HORSE CHESTNUTS (Æsculus Hippocastanum).

12 to 14 feet high, girthing at 4 feet from the ground, 5 to 6 in.
14 to 16 ,, ,, ,, ,, 7 to 8 in.

SCARLET HORSE CHESTNUTS (Æsculus rubicunda).

13 to 14 feet high, girthing at 4 feet from the ground, 6 inches.

SILVER MAPLE (Acer dasycarpum).

12 to 14 feet high, girthing at 4 feet from the ground, 4 to 5 in.
15 to 16 ,, ,, ,, ,, 6 inches.

SYCAMORE (Acer Pseudo-Platanus).

14 to 18 feet high, girthing at 4 feet from the ground, 5 to 7 in.

*** The stock of these Avenue Trees comprises many thousands. Purchasers who are desirous of securing the finest trees, of uniform character, that are in the market, are invited to come and see them growing in the Nursery. We engage that they will not be disappointed as regards quantity, or quality, or price.

ANTHONY WATERER,
KNAP HILL NURSERY,
WOKING STATION, SURREY.

BEAUTIFUL FLOWERS
FOR
WINTER AND SPRING
SUTTON'S



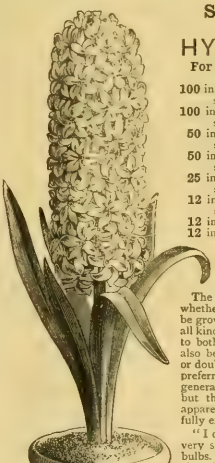
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COMPLETE COLLECTIONS OF
HYACINTHS, TULIPS, CROCUS, &c.
FOR OPEN GROUND CULTIVATION

42s.*	21s.*	10 6	5s.

FOR CULTIVATION IN POTS & GLASSES

42s.*	21s.*	10 6

**Carriage free to any Railway Station in England.*
THESE COLLECTIONS CONTAIN ALL THE BEST VARIETIES, AND WILL PRODUCE A BEAUTIFUL AND CONTINUOUS DISPLAY OF FLOWERS.
5 PER CENT. DISCOUNT FOR CASH.
Complete Cultural Instructions and Descriptive Catalogues gratis.



SUTTON'S
SUPERB
HYACINTHS
For Pots and Glasses.

	£	s.
100 in 100 very choice sorts	4	4*
100 in 50 very choice sorts	3	10*
50 in 50 very choice sorts	2	2*
50 in 25 very choice sorts	1	15*
25 in 25 very choice sorts	1	1*
12 in 12 extra fine sorts	0	12
12 in 12 choice sorts	0	9
12 in 12 good sorts	0	6

* *Carriage free.*

The order should specify whether they are intended to be grown in water or earth, as all kinds are not equally suited to both purposes. It should also be stated whether single or double-blossomed sorts are preferred. The single varieties generally thrive best in water, but their merits are never apparent until the flowers are fully expanded.

"I congratulate you on the very superior quality of your bulbs. 100 Hyacinths purchased of you are a grand lot, remarkable both for enormous size and great variety of colour."—Mr. T. Sillence, Jun., *The Gardens, Roche Court.*

SUTTON & SONS.
THE QUEEN'S SEEDSMEN, READING.



SATURDAY, OCTOBER 26, 1878.

PETWORTH HOUSE.

(*Concluded from p. 492.*)

LORD LECONFIELD'S immense house at Petworth has been criticised, not so far as the interior is concerned, but for its want of exterior beauty. There is dignity in its size however. I think Sir Joshua Reynolds says, in one of his lectures, that size is indispensable to grandeur. There is grandeur in the size of Petworth House, and the house seems to agree well with the park in which it has now stood for a hundred years or more. There is no fence whatever between them, and the deer can put their noses against the glass and admire the suite of rooms.

The deep, delightful, loamy soil has produced in the pleasure grounds trees of entirely different habit from those grown on harder or shallower soils. The Chestnuts, Cedars, and Silver Firs are all lofty in the bole, and would be noble trees but for the overcrowding which destroyed their side branches. An endeavour has been made to repair the mischief by thinning; but the remedy came too late. Oaks and other deciduous trees will throw out side branches and still make some effort to clothe their bare poles if the thinning be effected soon enough, but in the case of evergreens their character once ruined can never be restored.

The kitchen gardens, lawns, and flower borders are beyond all criticism, and I really think that Mr. Breese might challenge the whole country round for the growth of several kinds of fruits. His advantages and opportunities must be considerable; the soil is warm and fertile, and the extent of sheltered ground is large. Reckoning both sides, there are 2 miles of wall connected with the kitchen gardens, and they are almost entirely covered with young trees replanted by Mr. Breese within the past six years. The walls are excellent: they are 14 feet and 15 feet in height. One stretch of wall, 230 feet long, with a 3-foot glass coping, is planted with Peach and Nectarine trees, which this year covered for the first time almost every inch of wall. The crop was very great. The next length of the same wall is of similar extent, in Apricots. If the trumpet of fame were sounded to inform the world what these gardens excel in most, it would blow loudest in reference to cut flowers and fruit.

There are 14 acres of kitchen garden, employing more than thirty hands. At the commencement of our walk through these very valuable 14 acres we passed about 5000 pots of Strawberries prepared for forcing—the sorts Black Prince, Garibaldi, Lord Napier, Goldfinder, and Dr. Lucas. The roof of a summer-house on the outside wall on the south side lifts the visitor a few feet above the level of the ground, and brings to view some of the most pleasant and domestic scenery of Sussex—six miles of orchards, farms, and woods straight across to the downs above Bognor and Lavington. In the "Shamrock garden," in which this summer-house stands, some tall and stout Castor-oil plants are maturing their seeds, and will ripen them quite, if the open weather holds. The Chilian Beet is another of the gorgeous foliage plants growing on this spot.

I mentioned fruit just now, and almost ventured on challenging comparisons, for I had

in mind the American Cranberry (Oxycoccus macrocarpus), which we next inspected in its shallow tank, bearing bushels of the most delicious tarts *in posse*. Any person who would vie with Petworth must show the American Cranberry in full fruit, or hide his diminished head. "Can you catch mice, mew, and purr?" said a cat's admirer to a rival. "No," was the reply. "Then hold your tongue." Imported Cranberries are pretty good, but those grown in your own garden are as superior as wheatears to swallows, or leverets to young cats.

There is no better vehicle for cream and powdered sugar than a Cranberry tart. Words will not describe the excellence of this berry, or its pleasant, brisk flavour. Gardeners should, if possible, withhold the Cranberries till the other fresh fruits of autumn have been some time enjoyed; they will then prove so popular that the demand for them will be perpetual, as long as the crop lasts. Frost softens the Cranberry, and gradually deprives it of its peculiar flavour; still, in mild seasons, it remains excellent up to January. The "tank" at Petworth is from 3 to 4 feet deep, and not water-tight. It has a layer of rubble at bottom, to hold superfluous moisture; and then 2 feet of sandy peat, in which the plants were set some years since. This shallow Cranberry tank is 36 feet across, and now carries a crop of several bushels of fruit. The plants are submerged in water several times during summer, and should always be flooded to set the blossom about the middle of June.

The numerous heated pits and houses are entirely filled with what gardeners might call "small stuff," for cut flowers. There are no great floral specimens filling up the space, such as Azaleas and other ornaments for exhibition. There are a great number of Pines in successive stages; one range of pits measures 75 feet in length. We passed through a Fern-house nearly filled with Maidenhair, for decorative purposes; and, opening a door, we entered a winter Cucumber-house, where the bottom-heat is supplied by means of fermenting materials, in preference to hot water.

Mixing fruits and flowers in my description, there are five large Grape-houses, three or four Peach-houses, and one Poinsettia pulcherrima-house with the plants set out in borders to be freely cut from in the winter. In a Melon-house, with some large remaining specimens carefully strapped up, there are many pots of a light and dark variety of Capsicum (Yellow Gem and Prince of Wales), grown for decorative purposes. In another house (a Pine-house) I observed hundreds of pots of Selaginella for table ornament. The Winter Cherry (Solanum Capsicastrum) is largely grown here for the same purpose, and in one of the houses there are scores and scores of pots of favourite plants. The method of cultivation is to cut hard back and plant out-of-doors in May and June; pot in the middle of September and move into the house and shade and give a little bottom-heat till the process of rooting has been effected. That is the present stage of Mr. Breese's plants, and they are full of young wood and loaded with green berries, which already show some signs of the rich golden colour they will presently assume.

I do not think the reader would gain by a more systematic transcript and arrangement of my notes, and without regard to what may follow I will here mention a fruit which blocked our way at this point—I mean that Grape with the prodigious berry, the Gros Colman, which we passed at this stage of our travels. The various kinds of Grapes in all the houses have ripened in perfection. There is a large stock of pot Vines for early forcing. Passing again to flowers: in warm corners outside several of the houses there are patches of Guernsey Lilies with roseate tips to the petals. In a sheltered situation and warm subsoil the Guernsey Lily makes its growth of leaves in spring and summer, producing flowers in early autumn, when the stems which bear them rise from the bare earth, the leaves having disappeared in July. The plant is not a very common one, and soon disappears from a cool ungenial soil.

The Bougainvillea glabra enlivens several houses with its gay display of light mauve calyces. One of the choicest of the decorative plants is the Eucharis amazonica, which abounds here. Out-of-doors, denoting a congenial soil and climate, I noticed seedling Brugmansias and the Funkia grandiflora, both in flower.

There is yet another fruit to mention which might puzzle some competitors. The third Earl of Egremont, the grandfather of the present owner of Petworth, brought from Italy, seventy or eighty years ago, a plant of the Green Italian Fig. It is now a tree filling a house 40 feet long by 25 feet wide. It bears every year scores of dozens of small delicious fruit, which even ladies can take at a mouthful if they try, and they are fond of trying, so sugary sweet is this seductive Fig. In Sussex various dates are fixed in the memory by connecting them with Goodwood Races. I don't know if a better plan has been proposed in *Stokes on Memory*. The races fall on the last week in July, and that is the time the first few dozens of the Green Italian Fig ripened this year. In some seasons the fruit may be gathered up to Christmas. The roots of the old tree extend outside—in it will not bear forcing. It is cut hard back to produce young wood, and about half-a-dozen faggots are removed yearly.

Mirabile dictu! In the midst of the lawn and pleasure-grounds, between the kitchen garden and the house, there is a gigantic dragon coiled upon the grass. His formidable folds are twined about an Apple-tree, and he extends from that central spot 350 feet. This scaly monster sheds his skin several times during the year. In spring he may be seen bright with Crocuses, early Tulips, Snowdrops, Primroses, Polyanthuses, Forget-me-nots, Pansies, Saponarias, Silene pendulas, and other early-flowering plants. At the present time he is gorgeous with various kinds of bedding plants. His formidable backbone is well done in Roses, his eyes glare with Echeveria and Alternanthera; his jaws are represented by Mesembryanthemums; claws of the same firmly grip the turf; the nails are well-defined; Iresine is used freely; there are teeth of white Cerastium; the beard is of Ivy, and a darting red tongue is simulated by Alternanthera. The Dragon of Petworth is a work of much art and ingenuity, and here my note-taking ended. *H. E.*

New Garden Plants.

Compartettia speciosa, *n. sp.**

This must be a very beautiful thing, beating the two old Compartettias by far, only comparable to an unpublished species, Compartettia macroplectron of Rchb. f. and Senor Triana,† which is decidedly a grand beauty. It was only found by the celebrated monographer of the Melastomads, unless it fell into the late Mr. Bowman's hands. (This is a conjecture of mine; Mr. Bullen told me he had seen with the bearer of the celebrated dried flower of Odontoglossum vexillarium, flowers of a giant Compartettia which may have been this.) I only know the plant from dried specimens, discovered a few months ago in the far east of Ecuador. I do not fully know what may be the real colour of the sepals, including the long spur; that of the petals and column is a light ochre; while the giant lip blade, nearly 3 centimetres broad, 1¼ centimetre high, is of an exceedingly rich promising strong orange colour even when dry. The spur is fully 4 centimetres long, and makes a surprising impression. An Orchidist, who saw the flowers, said it was a bright coloured Oncidium concolor, yet a variety with a long spur, this is rather a keen idea. The plant is one of the most recent discoveries of Mr. Edward Klaboch, the elder Roezlian nephew, and it is said (*relata refero*) by Mr. Frans Klaboch, whom I had lately the pleasure of seeing, to have very stately bulbs, which would auger well for its safe introduction, which is expected soon. *H. G. Rchb. f.*

* *Compartettia speciosa*, n. sp. — Racemo pluriloro (ad decemloro) laxiloro, grandiloro; bracteis triangulis ovaria longe non æquantibus; sepalo impari ovato acuminato; sepalis paribus oblongis acutis naviculari-connatis apice unidentatis seu bidentatis, calcari longissimo filiforma acuto; tepalis ovatis acutis, labello basi utrinque auriculato carina parva interjecta, ungue brevissimo; lamina antica maxima subquadrata antice medio emarginata obtusangula, calcaribus elongatis minutissime pilosis; columnæ rostello elongato, buccis in ima columnæ basi abruptis. *H. G. Rchb. f.*

† *Compartettia macroplectron*, Rchb. f et Triana – Foliis oblongo ligulatis acutis; pedunculo pauciloro; sepalo impari oblongo acuto: sepalis paribus connatis ligulatis obtusis, calcari elongato falcato acuminato; tepalis ovatis apiculatis; labello basi utrinque auriculato, medio carinato; ungue elongato in lemnam anticam oblongam medio profundissime emarginato bifidam (calcaribus inclusis valde abbreviatis—an ita semper?). Tepala atropurpurea guttata. Labellum 0.035 m. longam, 0.25 m. latum.—Nova Granata. Triana!

Pescatorea Russeliana, *n. sp.**

There is no end of new Pescatoreas and Bolleas, though it is perhaps not so astonishing as it may appear. The majority of these plants are collected by the native collectors out of flower, one as like the other as one egg to another; hence all are believed to be the same as those collected in the flowering state. There are even now in my possession sketches made on the western side of tropical South America which promise new species and very elegant ones. Now this one is very easily distinguished. Imagine a P. Dayana or Roezlii, but having the lip of the latter. Then take the keels of the crest running out into prostrate angles outside, excepting just the single straight middle keel. This was only known till now in Pescatorea lamellosa, a smaller very elegant species. The colours are those of the species just named, but only the tint of the lip and tips of sepals and petals is of a reddish purple. The white may be called cream-coloured, having a yellowish hue. The column is rather yellowish in front, shown at base with a lemon-colour area.

This curious species is at hand in three fully developed flowers sent by Messrs. Veitch. They are, however, distinctly declared foreign, not Veitchian, and as coming from Mr. J. Russel, of Falkirk, to whom the novelty is inscribed with the good wish that he may continue to have such good luck in flowering interesting novelties. *H. G. Rchb. f.*

* *Pescatorea Russeliana*, n. sp—Omnia Pescatoreæ Roezlii excepto labello; lobis lateralibus erectis; limbi lobi maximi mediі lateribus et antice revolutis; callo baseos ex lamellis 15, plerisque excepta lamella mediana recta basi angulos extrorsos efficientibus more P. lamellosæ. Flos lacteus disco labelli et apicibus sepalorum et tepalorum rubro-purpureis. Columna antice flava, basi purpurea cum zona flava, circa foveam purpurea. Anthera atropurpurea.—*Zygopetalum Russelianum. H. G. Rchb. f.*

HIBISCUS SYRIACUS TOTUS ALBUS.

The Althæa frutex may be fairly set down in the list of neglected hardy flowering shrubs. It is, nevertheless, a species of singular beauty, and affords several choice varieties which will hold their own in comparison with any other plant of its class. It flowers in late summer and autumn too, when the shrubberies and pleasure-grounds of country seats are often required to be in their most dressy condition, and when, indeed, handsome flowering shrubs are welcome anywhere.

The variety of which we now give an illustration (fig. 91) is of Continental origin, and has quite recently been introduced to our English collections. We saw it a few weeks ago at Mr. Waterer's Knap Hill Nursery, and were much pleased with it. Indeed, its pure colour and free-flowering habit at once recommend it. Small plants scarcely exceeding 1 foot in height, and furnished with several shoots, had three or four flowers open on each branch, and throughout their length every leaf axil was furnished with a flower-bud. The figure is intended to serve a double purpose—to represent the flowering and free-blooming habit of the var. totus albus, and to show the long cordon-like growths which these plants are made to assume in the parks of the French metropolis.

Another beautiful variety, as yet little known in this country, but which we have also seen at Knap Hill, is the H. syriacus cœlestis (Céleste of the French), the flowers of which are of a charming cœrulean blue, with the crimson base which occurs in most of the varieties, but the absence of which gives so thoroughly distinct an effect to the variety we now figure. *T. Moore.*

THE KNAP HILL NURSERY.

This establishment is pretty well known as being one of the most important tree nurseries in the United Kingdom. It may here perhaps be well to point out that the system of frequent removal practised in this and some other nurseries, which is at the foundation of the successful preparation of the trees, rather militates against the nurseryman in the eyes of the unthinking purchaser, because plants so prepared scarcely ever wear the luxuriant appearance of those which are allowed to remain unmoved till they grow coarse-rooted, but which, as unwary purchasers too soon find out to their cost, when moved perish or drag on for years a miserable existence. It is better to plant half the number of well-prepared plants such as under fair conditions are sure to grow and thrive, than to cover the surface with untransplanted rubbish, however tempting the aspect of the plants and the price may be.

A feature of much interest, and one which arrests the attention soon after entering this nursery, is the long carriage-drive, nearly a mile in length, and extending in a straight line from west to east quite



Fig. 91.—Hibiscus syriacus totus albus. (see p. 524.)

through the grounds. This drive is flanked throughout by a wide border filled with fine specimens of ornamental evergreen shrubs, and in the Rhododendron season forms a scene which never fades from the memory. A portion at the west end, that nearest the Knap Hill entrance, is planted chiefly with select specimens, large and small, of choice Conifers and Taxads—sample plants, so to speak, which serve to illustrate the variety as to form, size, and kind, of the stock grown in other parts of the nursery. Then follows a portion several hundred yards in length, the borders flanking which are filled with choice Rhododendrons, some of them fine old bushes which have existed since the nursery was established, and others being examples of the choicest modern kinds.

Beyond these borders of American plants, amongst which are scattered many splendid specimens of Gold Queen, Silver Queen, Waterer's, and other fine varieties of Holly, we come to an oval of considerable extent through which the drive passes right and left, and again meets, and is continued onwards, with the side borders of ornamental trees and shrubs to the eastern boundary of the nursery. In this oval plot, which is artistically planted, may be seen examples of some of the fine statuesque plants which are so valuable for placing in prominent positions in geometrical and other formal gardens. Hollies perhaps preponderate at this point. In the outermost border the plants are mostly of the bushy, or half-standard, or pyramidal form, and consist of beautifully furnished specimens of the best variegated sorts, as Waterer's Golden Queen, Silver Queen, Milkmaid, &c., and of the green-leaved series, as scotica, contorta, serratifolia, myrtifolia, laurifolia, Shepherdi, Hodginsii, &c.—specimens with short clean stems and roundish well-furnished heads, varying from about 2½ feet high and a yard across to a height of 6 or 8 feet, and a circumference of 12 to 16 feet; others are of narrower form, but bush-like; and many are in the form of well-proportioned narrow pyramids from 6 to 10 or 12 feet or more in height. Between the pathway in front of these borders and the carriage-road are two half-moon-shaped beds, one on either side, divided by cross paths into eight compartments, each filled with one kind of plant, and thus to some extent showing the adaptability of many hardy evergreens for outdoor winter gardens; the plants used consist of neat little bushes, varying from 1 to 1½ foot high. This section is bordered next the path by a row of Abies excelsa pumila, a rather stout-growing, but close dwarf form of Spruce Fir, forming tussocks 1½ foot in height, and about 3 feet over, close-set and uniform in character—a plant well adapted for use in terrace gardens, and as a bold edging to carriage drives. The margin next the drive is here planted with the dwarf habited Rhododendron Wilsonianum. Amongst the bedded-out subjects we noticed Waterer's Holly, Andromeda floribunda, Daphne Cneorum, Rhododendron ovatum, a very dwarf close-habited kind, Kalmias, Ledums, &c.

The oval enclosed by the curved branches of the drive has in the centre a circle of the diameter of its widest part, and a triangular bed at each end. These are all edged by Rhododendron Wilsonianum, and filled with dwarf American plants, amongst which are dotted specimens of Cupressus Lawsoniana lutea, which is without doubt the best of the golden Conifers, being of free growth, and what is equally, if not even more important, not being subject to burn, as are all the other yellow variegated forms of Cupressus Lawsoniana at yet known. At the present time and for some two months past this circle has been most attractive with the flowers of the varieties of the Irish Heath, Dabeocia polifolia, which are in full bloom and likely to continue for some time to come. These plants are almost always in blossom, as if the early blooming shoots are pruned back they break and bloom a second time. The variety bicolor is just now most attractive, and it is so remarkable a variety that no garden of any pretension should lack a bed of it. Its peculiarity consists in its producing flowers of various colours—purple, blush, and white—on the plant at one and the same time, indiscriminately, as it were, and so completely mingled as to have a peculiar and pleasing effect; some plants, for the time being, flower wholly purple—a pretty lively rosy purple, some almost wholly white, and many with purple and white spikes or purple and white blossoms intermingled.

Along the centre of each of the crescent-shaped beds is a line of alternate statuesque Golden Yews and standard Hollies, averaging about 6 feet high. Here are Yews with a pillar-like base, of common

green Yew, 4 or 5 feet in circumference, others being wider or narrower, and with a handsome proportionate golden head of conical form, densely furnished and perfectly symmetrical. The Hollies consist of Perry's Weeping Holly, on stems about 6 feet high, with nice drooping but roundish heads a yard through. Behind these and alternating with them is a row of the inimitable Knap Hill Cypress, Cupressus Lawsoniana erecta viridis, fine examples, averaging 6 to 7 feet high.

Special attention has, for some years past, been devoted to the cultivation of trees suitable for planting in avenues and other positions in parks, public and private, and in the streets of towns and cities. Of these thousands upon thousands may here be seen, of all ages and sizes, fine, sturdy, thick-stemmed symmetrical-headed trees up to 20 feet high. We were especially struck with the fine quality of the Planes—the true London Plane, commonly called Platanus occidentalis, but more correctly P. acerifolia. They are planted in open order at 6 feet apart in rows which are widely separated, so that they become thoroughly inured to exposure; they have been transplanted frequently, and have clean straight stems which girth from 6 to 10 inches at 4 feet from the ground. These are really handsome trees, and far better worth the attention of corporate bodies who have their town or suburban thoroughfares to embellish than the ordinary drawn-up, weakly poles that are so often met with. Moreover, the absence of anything like risk of failure, which is the consequence of the preparatory treatment to which they have been subjected, is in itself no small consideration in the formation of an ornamental plantation, whether in the form of an avenue or clump. The Planes here are the best trees of the kind we have ever seen.

The common Horse Chestnut is another fine avenue tree, and of this, as well as of the scarlet Horse Chestnut—the latter being most attractive and showy when in flower—the stock may be described in similar terms. In fact, they have been grown in the same manner, with the same object in view, and with a like result. There are also vast numbers of beautiful specimens of Limes, 12 to 18 feet high, with a girth of 6 to 10 inches, and a considerable quantity of the purple and the common Sycamore, the latter a well known tree of the first order of merit. Less familiar, and indeed not at all common in this country, is Sir Charles Wager's, or the Silver Maple, Acer dasycarpum, or eriocarpum as it is sometimes called, which is used very much for street planting, and with great success in the North American towns. It grows also freely enough in the western parts of London. The deeply-divided leaves of this tree, and their silvery under-surface, render it very ornamental. The Norway Maple, Acer platanoides, is also a grand tree for ornamental planting, and one of which very fine examples may be found here. Of the Silver Maple we saw hundreds of very handsome trees, 12 to 16 feet in height, girthing at breast-high from 4 to 6 inches.

Another tree of striking merit is the new Canadian Poplar (Populus canadensis nova), which it is perhaps not too much to say is one of the best and most useful hardy deciduous trees we have. In the first place, it is the most rapid growing of all our hardy trees, for we have ourselves seen, in this same nursery, plants which have made 10 feet growth in a season well furnished with branches. This will give some idea of its rapid development. It is, moreover, a tree well adapted to London, and may be seen in luxuriant health in the plantations on the Thames Embankment at Chelsea. From the treatment to which it has been there subjected it is evident that it will bear any amount of pruning, so that it may be kept to any size or form required. It is probably the best tree we have for planting in the smoky towns of the manufacturing districts in the North of England. Its nearest affinity is with the Black Italian Poplar, and, in fact, it may be described as a very much improved form of that variety, possessing greater vigour of growth, as well as larger leaves, which are retained fresh and green till a later period of the season. It is, in fact, in every way an improvement on that well-known and useful sort, and as a screen tree has no rival.

The Acacia family comprises some very useful, varied and ornamental trees, but the best of them all for ornamental planting is Bessoniana. It is a free-growing tree, and from its compact mode of growth is less liable to split than the common Acacia. Its spineless shoots, moreover, retain their fine pinnate foliage till a late period of the autumn. No more beautiful tree of this character could be desired. We have observed it for some years past, in our occasional visits here, and we recently saw a good stock of strong trees in the nursery quarters.

Amongst ornamental evergreens the Hollies form a very important section of the Knap Hill stock. Upwards of 7 acres of ground are occupied by the different varieties of variegated and green Hollies, the best kinds only being grown. It was in this nursery that the variety known as Waterer's Holly originated, and of this there are hundreds of specimens to be met with at various heights between 4 feet and 8 feet, and measuring from 8 to 16 feet in circumference—plants so densely compacted, so perfectly filled up, that not a leaf seems to be wanting to make them more complete. This variety is one of the best as well as one of the hardiest of the variegated kinds, since it was the only one of them which withstood uninjured the severely low temperature of what is known as Murphy's Winter. Its close-growing habit and slow progress also adapt it specially for introducing into all formal plantations, such as the decoration of terrace gardens and the furnishing of winter gardens of evergreen shrubs, seeing that it will not speedily grow beyond the limits of the design or the space appointed to it. It has, moreover, a freely marked and distinct variegation, and though not free from spines it has a strong tendency to produce plain spineless leaves. Quite different in this respect, for it is one of the more spinescent, is the well-known Golden Queen, of which splendid variety one meets in various parts of the ground with numberless examples of healthy thrifty plants, in profusion, of all sizes. The same remarks will apply to the variety known as the Silver Queen, the best of the white margined sorts, of which there is also to be seen an enormous quantity of various sizes, from 4 to 10 feet high—not thin drawn-up specimens, but bushy well-furnished stocky, often-moved plants, which it has taken many years to train up.

In passing through the different sections of the nursery, the visitor comes across large numbers of other varieties of gold-striped and silver-striped Hollies, including all the best sorts in cultivation, of all of which there are finely-grown specimens of the conical, pyramidal and bush forms of various sizes adapted to the various purposes to which such plants can be applied. One sees here, in the ordinary style of planting for nursery purposes, much of the effect of planting different varieties in masses of one kind—a much more satisfactory plan of producing effect than planting in indiscriminate mixtures. Perry's Weeping Holly is another of the beautiful forms of which good examples crop up here and there; and the new gold-striped Weeping Holly, though as yet of smaller size, promises to be very striking when more fully grown.

The stock of Hollies, however, is by no means confined to variegated sorts, there being at almost every turn bushes and pyramids of various size and height of all the best green-leaved sorts. Some splendid trees are to be seen of the green Weeping Holly, a portion worked as standards, others as pyramids feathered to the ground. The common Holly—than which no more useful or valuable hedge plant exists—occurs in wonderful profusion, many thousands being grown. Besides these there are the choicer green-leaved sorts, as Hodginsii, with its large, broad, deep green leaves; Shepherdi and maderense of the same general character, but distinct; the charming yellow-berried variety, which so beautifully contrasts with the ordinary red-berried sorts when in fruit; the small Myrtle-leaved, and the still smaller saw-leaved variety, which are distinct in aspect from all others; scotica, with its black-green, blunt-tipped, and very glossy leaves; the screwHolly, with somewhat similar leaves, only more twisted; and laurifolia, which has almost spineless Laurel-like foliage. These few latter sorts are all remarkable for the black bark and the dark green of the leaves, and are all peculiar in the character of their foliage, and remarkably effective when planted so as to contrast with other shrubs.

Another striking feature of Knap Hill is the stock of Golden Yews, which, leaving out of view the private collection at Elvaston Castle, is probably unrivalled. They are seen cropping up almost everywhere about the establishment, and appear in large numbers. In this department we saw many fine plants, varying in age from fifteen to forty years, which have during all that period been well cared for, and now stand forth as wonderful examples of skilful manipulation, in the form of pyramids, of cones, of semiglobular bushes, and of standards or half-standards, some of the latter having a feathered, close trimmed base of English Yew, serving as a green pedestal to a golden crown. One plot of ground of about 2 acres in extent is well-nigh filled with plants of this kind.

The varieties comprise the old Gold-striped Yew, Taxus baccata aurea, and the new Gold-striped T. baccata elegantissima, the older plants above referred to being of the older variety. The specimens offer considerable choice as to form and character. Of the older sort we found dense semi-globular bushes, 4 to 6 feet high, and 8 to 16 feet in circumference, and cones and pyramids, 8 to 10 feet high, and 6 to 7 feet round; we also found many composite or worked plants with golden heads of different forms, set on the top of green-feathered stems; they consisted of plants with 4 to 6 feet stems, and heads 5 to 7 feet round, and others 6 to 10 feet high, with 8 to 9 feet conical heads. Of the elegantissima variety, which is of freer habit, and has the leaves more distinctly striped than in the older sort, there were plants in abundance, of size and form similar to the foregoing.

Besides these, there is to be seen a very large number of seedling Golden Yews, which have the advantage of being remarkably free in growth, and from amongst which considerable variety may be selected. The leaves of these seedling forms are usually striped, and in some instances the variegation is rather silvery than golden. We wereshown in one quarter many thousands of these, nice freely-grown bushy plants of 3 to 5 feet high, stocky and well furnished. These seedlings are every whit as free in their growth as the common Yew, and are most desirable acquisitions, not only on account of their intrinsic beauty, but also their more rapid development. Mr. Waterer, we believe, was one of the first to raise these seedling Golden Yews in large quantities. Many of them, we observed, were berry-bearing.

Common Yews are so useful for various purposes, that there is generally a good stock of these in most nurseries, and such we found to be the case here; also many of the erecta variety, which is an extremely elegant fastigiate shrub, much superior in its style of growth to the Irish Yew. There are many very handsome plants of this erecta form growing amongst the specimens of statuesque formal pyramidal examples of the Golden Yew already referred to, as well as close symmetrical cones and pyramids of the Box-tree, both the green and the striped-leaved sorts.

From Taxads to Conifers the transition is easy, but space forbids us to amplify on these. Suffice it to say, that growers will find specimens of careful preparation and rare development of all the better kinds, such as Picea Pinsapo, magnifica, nobilis, lasiocarpa, grandis, Nordmanniana, and others; with Abies orientalis, a most graceful tree, bearing a likeness to a slender Norway Spruce—far too much neglected by planters, but one which it is most desirable to introduce largely on account of its comparatively small size and its strikingly refined character.

First of all we may mention the original plant of Thuja aurea, which now forms a large dense mass—10 feet in height and proportionate in bulk. Another of nearly equal size stands on the opposite side of the drive, and the two form a fine pair. This is one of the most popular of dwarf hardy shrubs, and the progeny of this parent plant must be reckoned by millions. Of more recent introduction and of Continental origin is the Thuja semperaurea, which is of a deeper golden hue, that being continuous throughout the year. It is really an acquisition, the habit being in every respect a copy of that of T. aurea. Another popular Conifer, already alluded to, was also raised here, and is hence called the Knap Hill Cypress. This is the Cupressus Lawsoniana erecta viridis, which along with the varieties gracilis and nana, was picked out of the first large batch of seedings of this species which was raised in this country, and hence Knap Hill was practically the source from whence Cupressus Lawsoniana was first extensively distributed.

Another good variety of the Lawson Cypress is that called pyramidalis alba, in which the tips of all the branchlets are pale-tinted, and the leaves glaucous, so that it takes on a silvery hue which is striking and distinct. This is not only a slender and graceful plant, but one which is free-growing in habit, and does not burn.

A very elegant little Fir is the Abies Hookeriana, of which a large number is grown. This is a slender pyramidal-growing species, with moderately spreading branches, and short silvery leaves, and is altogether a distinct-looking plant of ornamental character. We also

raised two very pretty varieties of Hemlock Spruce, Abies canadensis, one of them being variegated, and having the tips of the young growth in the early summer for about half an inch in length almost pure white, producing almost as gay an appearance as if the plant were hung with bell-shaped blossoms, and the other of weeping character, in which the slender branches were grace- fully drooping.

In one part of the nursery are growing side by side two forms of Retinospora pisifera aurea. The one, which is the plant usually met with, is very much inferior to the other, the best one being of closer habit, more symmetrically pyramidal, and of a much richer golden colour. The plant here is a well-proportioned cone of golden branches 10 feet high, and measuring 11 feet round at the base. The Retinospora obtusa aurea is also a distinct and elegant shrub, with horizontally spreading branches drooping at the tips, giving an open character to the ramifications, and having the leaves of a rich golden-green colour. Amongst these choicer Conifers we should not omit to include Cupressus Lawsoniana lutea, though we have previously mentioned it, as it is without doubt the best of all the golden Cypresses yet obtained, being distinctly flushed with colour, a free and rapid grower, and a plant which does not burn when exposed, as so many variegated plants do.

At the present moment one of the most interesting of the Coniferæ is the Blue Spruce of Colorado, of which Mr. Waterer has some well-furnished young specimens, 5 to 6 feet high, besides a large quantity —some 50,000—of seedlings. Our readers will know from the discussion which took place in our columns last year in reference to the correct name of this plant that it is one to which much interest attaches; but whatever difference of opinion there may be as to the name, there can be none whatever as to the beauty of this plant, which is very symmetrically branched, and furnished with spreading needle-shaped leaves, so intensely glaucous as to acquire a distinct blue colour. Some refer the plant to Abies Menziesii, others to A. Engelmanni, but we are much inclined to believe it is distinct from either. On this point we may soon hope to obtain further information. In the meantime, looking at it as an ornamental tree, it must be set down as being by many points the best and handsomest of the Spruces.

THE SPECIES OF COLCHICUM.

I SHOULD like to hear more about the Colchicum crociflorum, mentioned in your issue for October 12 (p. 471) as a "new, distinct, and very beautiful species." If it be the Colchicum crociflorum of Sims, which was figured in the year 1826 (tab. 2673) in the *Botanical Magazine*, I should like to know how to distinguish it from C. autumnale. If it be the C. crociflorum of Schott and Kotschy, described in 1854 (p. 97) in the *Oesterreiche Wochenblatt*, I cannot make out how it differs from C. montanum. A plant which Mr. Barr received from Corfu under the name of C. crociflorum, of which I have seen a flower but no leaves, probably belongs to C. neapolitanum of Tenore, a plant widely spread in the Mediterranean region. The species of Colchicum greatly need further work for their elucidation. Of late years a great many new names have been invented for plants for which no definite differential characters have been assigned. Many of the species approach each other very closely, and the fact that in most of them the leaves and flowers are produced at different times adds greatly to the difficulty there is in getting full information about any given plant. But for those in cultivation, at any rate, the difficulty might be surmounted by a little trouble. The differential characters between the species are to be found:—1st, in the corms, their size, shape, and the number of flowers they produce; 2d, in the leaves, their number, size, shape, colour, and time of development; 3d, in the flowers, the time of their development, their colour, whether they are plain or tessellated, and the size and shape of their divisions; 4th, in the stamens, whether the filaments are thickened and discoloured at the base, and whether the anthers are yellow or purple; 5th, in the stigmas, whether they are falcate and run as a line down the upper part of the style, or whether they are short and sub-capitate; and, 6th, in the capsule, its shape, size, and the time of its development. To know a given plant fully one needs information on all these heads. As a rule those who want Colchicums named only send single detached flowers, from which one gets about 30 per cent. of the information needed to give an opinion that may be safely relied upon. As a contribution towards the working out of the genus I send a list of all the published names, classified as well as my present information enables me to arrange them. I mark for printing in italics the species of which the characters may be considered as fully known, so that your readers may see exactly those about which more information is wanted. For those placed as synonyms I do not wish to be understood as affirming that no differential characters exist, but simply as expressing an opinion that if they possess differential characters these have still to be pointed out.

GROUP 1.—Flowers more or less distinctly tessellated, produced in autumn, whilst the leaves are not developed till spring.

1. *C. variegatum*, Linn. = *C. chionense*, Hort. = *C. Parkinsoni*, Hook. fil.—Greece and Asia Minor.
2. C. pulchrum, Herbert.—Greece and Ionian Islands.
3. C. agrippinum, Hort. = *C. tessellatum*, Hort.—Greece.
4. *C. Bizanae*, Guss. = *C. variegatum*, Bav., non Linn. = *C. neapolitanum fritillaricum*, Parkinson = *C. Visianii*, Parl.—Sicily, and perhaps also Greece, Dalmatia and Morocco.
5. C. amabile, Heldreich.—Greece.
6. *C. lusitanum*, Brotero = *C. lusitanicum fritillaricum*, Parkinson.—Portugal. The Italian C. Todarii, Parlatore, not distinguishable.
7. C. Levierii, Janka.—Italy.
8. *C. Tenorii*, Parlatore = *C. Bisignani*, Tenore.—Italy.
9. C. Sibthorpii, Baker (the plant figured by Sibthorpe and Smith as C. latifolium, the leaves described as belonging to C. byzantinum).—Greece.
10. C. variopictum, Janka.—Naples. Perhaps a form of C. neapolitanum.

GROUP 2. Flowers large, not tessellated, produced in autumn, whilst the leaves are not developed till spring.

11. *C. speciosum*, Steven.—Caucasus.
12. *C. byzantinum*, Ker = *C. floribundum*, Lawson = *C. latifolium byzantinum*, Clusius = *C. transilvanicum*, Schur. = *C. æstivale*, Boreau.—South-east of Europe.
13. *C. autumnale*, Linn. = *C. crociflorum*, Sims = *C. multiflorum*, Brotero = *C. anglicum*, Parkinson = *C. patens*, Schultz = *C. vernum*, Schrank = *C. vernale*, Hoffm. = *C. præcox*, Spenner.—Central and West Europe, Morocco, Algeria.
Var. C. pannonicum (Parkins.), Griseb. and Schenk. = *C. polyanthos*, Ker = *C. multiflorum*, Schur.—Transylvania and Croatia.
14. C. turcicum, Janka.—Constantinople.
15. *C. laetum*, Ker = *C. Balansæ*, Planch. = *C. candidum*, Schott and Kotschy.—Crimea, Caucasus, Asia Minor, Persia.
16. C. persicum, Baker.—Persia.

GROUP 3. Flowers large, not tessellated, produced in autumn, whilst the leaves are not developed till spring.

17. *C. Troodi*, Kotschy.—Cyprus.
18. C. polyphyllum, Boiss. and Held. = *C. trapezunticum*, Boiss.—Asia Minor.
19. C. umbrosum, Stev.—Crimea and Caucasus.
20. C. parnassicum, Sart., Orph. and Held.—Greece.
21. *C. neapolitanum*, Tenore = *C. arenarium*, G. and G. = *C. castrense*, Laram. = *C. provinciale*, Loret. = *C. Haynaldi*, Heuff. = *C. Jankae*, Heuff. = *C. Kochii*, Parlatore = *C. orientale*, Friv. = *C. ætnense*, Tineo.—South Europe, and perhaps Morocco.
22. C. corsicum, Baker.—Corsica.
23. *C. arenarium*, W. and K.—Hungary.
24. *C. alpinum*, DC.—Dauphiné, Switzerland, Savoy.
Var. C. parvulum, Tenore.—Apennines.
25. C. lingulatum, Boiss. and Sprunner.—Greece.

GROUP 4. Flowers untessellated, developed in winter or spring at the same time as the leaves.

26. *C. montanum*, Linn. = *C. hermodactylum*, Parkins. = *C. bulbocodioides*, M.B. = *C. Bertolonii*, Stev. = *C. Cupani*, Guss. = *C. Valery*, Tineo = *C. parviflorum*, Biv. = *C. pusillum*, Sieber = *C. Ritchii*, R. Br. = *C. ægyptiacum*, Boiss. = *C. hololophum*, Coss. and Durieu = *C. nivale*, Boiss. and Huet = *C. triphyllum*, Kunze = *C. crocifolium*, Boiss. = *C. crociflorum*, Schott and Kotschy.—South Europe, Orient. Caucasus.
27. *C. Steveni*, Kunth.—Orient.
28. *C. Szovitsii*, F. and M.—Armenia and Kurdistan.
29. *C. luteum*, Baker.—West Himalayas, Beloochistan, Afghanistan.

Species of which only names, not descriptions, have been published:—C. Boissieri, eubæum, Parlatori and polymorphum of Orphanides. *J. G. Baker.*

AUTUMN ROSES.

IN resuming my remarks upon autumn Roses (continued from p. 370), I would call special attention to that exquisite old variety, Souvenir de la Malmaison, usually classed with the Bourbons, but which, I venture to think, is a hybrid of unknown origin. As an autumnal Rose this is equalled by few and surpassed by none. I saw a few days ago four circular beds of this variety, one pair at the lower end of the Waltham Cross Nurseries, where they are exposed in winter to inundations and frost, and two at the opposite end more favourably placed near the road. In each case they were covered with equally fine blooms, and I know from personal experience this charming Rose will flower in perfection in the immediate suburbs of London. It was worth a day's journey to behold these beds, as well as another quarter of Safrano, which, as an outdoor Rose, must certainly rank before Madame Falcot. But it is rather, as I indicated, the new and newer kinds that I purpose remarking upon in this paper, with the understanding that it is to their habit of continuous blooming that attention is chiefly called, rather than to other merits and characteristics.

Mr. Wm. Paul's splendid new Roses Duchess of Bedford and Countess of Rosebery I found in plentiful bloom—not a flower here and there, but every plant with a fair allowance upon it. It may be expected, therefore, that they will form a veritable acquisition to the ranks of true perpetuals. Star of Waltham is another free exemplar of that desirable habit. The same raiser's Firebrand, Red Rover, St. George and Diana were also well displayed.

Up to the time of writing, so far as I have been able to ascertain from personal observation, the following Roses of the current season are promising autumnal bloomers:—H.P.'s: Boieldieu, certificated of the 1st class at the Royal Botanic Society's meeting in April; Cannes la Coquette, a singular name; Constantin Fretiakoff, Madame Thevenot, Madame Gabriel Luizet (query, last year), Madame Louis Donadine, Mademoiselle Marie Castel, Princess Charlotte de la Tremouille, Souvenir d'Adolphe Thiers, Souvenir de Louis Van Houtte: the ultimate quality of the two last-named may perhaps be doubtful. Hybrid Noisette: Madame François Petit, which has hyperbolical eulogy from its raiser, is probably a further exponent of the Madame Alp. de Rougemont line. There was also a "hybrid of Tea-scented" (a very commendable and much-required division) announced by the name of Madame Alexandre Bernaix, and described as being after La France, a rosy edition of that admirable kind. Let us hope it may approach its prototype, of whose fine qualities we cannot have too many representatives in every line of colour. Of the new Teas proper only Madame Lombard has come under inspection. It is worth while calling special attention to this novelty, as I have heard it commended by many adepts whose opinion on such subjects is entitled to weight. Moreover, it is to be figured in Mr. Wm. Paul's forthcoming issue of the *Rose Annual*, an attractive annual which every rosarian ought to possess. On the point upon which we are treating it is really encouraging to find comparatively so many novelties asserting claims to the name of hybrid perpetuals. What their behaviour may be in another season it is impossible to say, for we must not forget that the present autumn has been unusually propitious for late bloom.

Of Roses that have been before the public for one or more seasons I have noted the following during my tours of inspection, not yet completed by the way:—Abel Carrière, one of the finest dark varieties of recent date; Albert Payé, Avocat Duvivier, Comtesse de Serenyi, Duc de Montpensier, Duchess of Vallombrosa, Duchesse d'Ossuna (I am doubtful of the quality of this Rose), Gabriel Fournier, fine; Jean Liabaud, one of the best and richest amongst new dark varieties; La Rosière, also good; Lyonnaise, Madame Devert, questionable as to quality; Madame Montchaveau, Madame Ferdinand Jamin, Madame Nachury, Marie Louise Pernet, Mrs. Veitch, Mons. Fillion, Mrs. Baker, Oxonian, Sir Garnet Wolseley, Triomphe de France.

Teas, Noisettes, and Bourbons are too well known as naturally the freest ornaments of the rosery or garden during the later months of the year, yet there are specialities even amongst these, and it is well to watch whether the newcomers deserve to stand side by side with the compeers amongst whom they are

introduced. For instance, Rêve d'Or and Bouquet d'Or must be added to this list. So must Perle des Jardins, but not Perle de Lyon. Likewise Marie Guillot and Marie Van Houtte. We must not pass by the old favourites, Rubens, Homer, Sombreuil, and especially the lovely Niphetos ("snow"), the snowiest white amongst Roses. There are more of this kind perhaps sent over from France in boxes as cut flowers during the winter than of any other kind.

One of the conclusions I cannot help drawing from the aggregate of observations made up to the present time is, that so far as autumn blooming is concerned, the catalogues of the H.P.'s need a searching revision. The number of these flowering freely and in good condition after the flush of the summer crop is past, are fewer than ought to be expected, especially when the favourable weather is taken into account. To see (as I have seen) row after row of standards and dwarfs alike, full of growth yet destitute of flower, or of indications of having recently been in bloom, or of buds yet to come, is a startling comment on the perpetuality of modern hybrid perpetuals, particularly when older kinds almost banished from the show tables are freely flowering in the grounds. The Rose shows have much to answer for on this score, but this is a topic I do not purpose to discuss further here. *W. D. Prior.*

ASPARAGUS CULTURE: ARGENTEUIL.

I KNOW of no place or spot of ground in the three kingdoms that can bear the least comparison with Argenteuil. It has for ages supplied an enormous wealth of market garden produce; and, being of easy distance from Paris, and close to the river, the carriage both of produce and manure is cheap. As some doubts have been thrown upon the question of manure being necessary for the production of the principal plant this favoured locality is noted for, viz., Asparagus, we must try to find out from whence this great source of food comes to a most searching-rooted plant. The quantity of Asparagus gathered in this neighbourhood must be something wonderful in weight alone, and although there is a great amount of water in each ton there is still a great amount of solid matter taken out of the soil annually, and still the soil renews itself without any or at least with only a small amount of assistance as compared with that afforded in the general practice of heavily manuring adopted in this country.

It has struck me that, from these considerations, there is some reason to find fault with the long details, so apt to mislead every one, that from time to time crop up about the place, and its system of cultivation. The French are wonderful experts in the art of hoodwinking or throwing dust in the eyes of our scientific and practical professors, who visit them annually. It is like the heads of the Argenteuil Asparagus of old—they had only just a bite on the top like a Cherry, but now, served with French sauce, they are delicious every bit, even if a foot long. I have visited Argenteuil several times, and it has always occurred to me that the benefits to be derived by us from the adoption of their system were more than doubtful; but it has now found champions in both scientific and practical men, and we may therefore expect to find it brought to perfection in good time on this side of the Channel. To illustrate what they believe in, the new system may be described thus:—Instead of a good trenching, the surface alone must be stirred, treated in fact as the system will prove here—fallow; and instead of manure, the sun's rays must be utilised both for pulverising and warming the soil for the planting of this tender esculent. It might be well for any one about to make a trial, without sufficient knowledge of the practice or much confidence in themselves, to import an Argenteuil grower, as stated elsewhere, to grow it in the public road.

For my own part I don't believe that a Frenchman could grow good English Asparagus on the best land in Great Britain until he was taught how. If all the statements we have heard be true, why do the French confine their science to agriculture? The land is of high value, and higher rents would be obtained in proportion. Besides the heavy cost of carriage to England might be saved by establishing a *locale* here for themselves, and they know how welcome they would be—there would not be the least jealousy; but they cannot bring the land of Argenteuil, and, what in my opinion is of more importance, they cannot bring what is under it. No; great growers must look back with regret upon the large amount of capital and labour spent in ages gone by, which might have been saved by a knowledge of these things, particularly as it appears they have as yet got no further than producing Sprue.

I may be wrong, but it appeared to me that the fertile parts of Argenteuil could be traced as easily as the shores of a Cumberland lake, and if we give up swimming and dive a little we find underneath the soil one of the best beds of gypsum in the neighbourhood of Paris. There is no doubt the deep-searching roots of the Asparagus reach this, and what richer or better food is there for plants than the fossilised bones of extinct animals and carbonate of lime? The chemists may also tell us that if certain natural constituents are present to make the gases soluble, there will be, like the water under the Haarlem bulb fields, a continual vapour of gases rising to renew and fertilise the soil.

My advice to all about to make or renew plantations of Asparagus is, first make certain of a crop by adopting the best of the old known methods—you can then afford to experiment with the Argenteuil or any other system. *J. Fleming, Cliveden.*

STANDARD GRAPE-VINES FOR TABLE DECORATION.

AT the meeting of the Fruit Committee held last week at South Kensington, exhibitors, committee-men, and visitors, "practicals" and "non-practicals" alike,

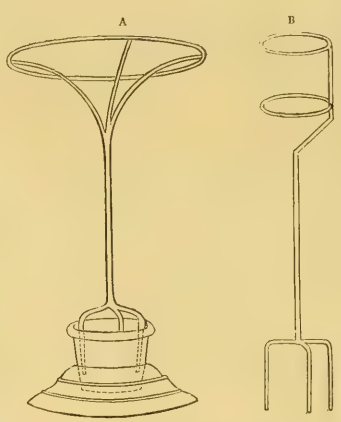


FIG. 92.

A, Showing the method of training pot Vines at Ashridge (see p. 533); B, Iron standard used for training pot Vines.

were struck with the beauty of a pot Vine—one of a collection grown for the purpose of table decoration by Mr. Sage, gardener to Lord Brownlow, at Ashridge Park, near Berkhamstead, and which gained for its exhibitor a Silver Flora Medal—an honour which, as all admitted, was well deserved. Of course there is nothing new in growing pot Vines for table decoration; most Grape growers are acquainted with the details of Mr. Wm. Thomson's system, as carried out at Dalkeith, and described in his *Practical Treatise on the Grape Vine;* and our readers will scarcely have forgotten the beautiful examples which Mr. William Cole of Feltham used to grow when gardener at Ealing Park a few years ago, one of which was illustrated in our columns in September, 1873, p. 1209; yet there are different degrees of merit in plants grown for such a purpose, as there are also different styles of training, and as equally different ways of attaining the desired results—and we must accord to Mr. Sage the credit of growing and exhibiting the most perfect and handsomest example that has yet come under our notice, and which our artist has succeeded in pourtraying in the illustration given on p. 533.

To obtain such specimens as this Mr. Sage informs us that he first endeavours to grow moderate-sized canes that he can well ripen, in preference to overstrong ones. The house in which they are grown is of the lean-to pattern, the back wall of which is devoted to Figs, and a stage in front, about 4 feet 6 inches wide, is used for Strawberries in early spring. The Vines are started into growth about the end of March—such sorts as Alicante perhaps a fortnigh earlier—and as soon as the Strawberry stage is removed, iron standards of the form shown in fig. 92 B are fixed in the ground at convenient distances apart; the pot containing the Vine is placed near by, and the rods are then put through the hole in the bottom of a pot placed in the rings of the standard; the iron trainer or trellis (see fig. 92 A) is placed in the pot, the prongs being made to fit exactly so as to prevent the Vine from swaying about when loaded with fruit. The next operation is to tie the cane to the trellis, and then the process of "breaking" is allowed to proceed in the usual way. Generally all the buds except those above the pot are rubbed off, but sometimes one at the base of the cane is left to grow into a "fruiter" for the following season. When the Vine has made some growth, say shoots from 9 to 12 inches in length, which have been stopped, the pot is filled with soil pressed down very firmly, a few cuttings or a plant of Selaginella are put in, and a good watering completes that operation. When the small pots become filled with roots they require water once, and in very dry weather at least twice a day, and that is the reason why the pots are placed in the iron standards (fig. 92 B), away from the larger pot containing the roots, as the soil in the latter is in no way interfered with. When the Grapes are thoroughly ripe the cane is cut away by degrees at the base of the smaller pot, and the plant is removed to a cool shady house. The sizes of pots used are 32's and 24's, and the varieties which Mr. Sage has found most preferable for this work are the Black Hamburgh, Alicante, and Foster's Seedling. It should be mentioned that the space between the standards is occupied by Plum trees and Figs in pots, so that no room in the house is wasted, and that when placed on the table the pot is inserted in a turned wood stand, shown in connection with 92 A. For convenience of comparison we reproduce the illustration of Mr. Cole's specimen (fig. 93, p. 529).

THE ORCHIDS AT OAKLEY, FALLOWFIELD.

OAKLEY, Fallowfield, near Manchester, is the residence of William Leech, Esq. It is quite suburban, and not at all removed from the influence of the deleterious atmosphere of the city. As a consequence of this, shrubs, trees, and plants must be grown of a character that will best thrive. I may say at once that the principal feature at Fallowfield is the Orchids. There are large collections of these, and, taking the houses as a whole, I have seldom seen a cleaner or more healthy lot of plants. It is well known to readers of the *Gardeners' Chronicle* that the gardener, Mr. Swan, is one of the best practical writers on the culture of Orchids, and it is very pleasing indeed to record the fact that the state of his plants bears evidence of intelligent culture throughout. Although Orchids are the principal plants grown, they are not the only plants that are done well. In the greenhouse and conservatory department some of the good old-fashioned plants find a place. Fuchsias, for instance, are well-grown, and their pendulous flowers of varied shape and colour are very effective at any season. Many persons have an idea, and are not slow to express it, that anybody can grow Fuchsias. So they can in a way. The cottagers, inside the window or outside on the sill, grow and flower them, but to produce a continuous and large quantity of flowers intelligent culture and careful attention are necessary. Good turfy loam, leaf-mould, rotted manure, and sand are the requisite materials—four parts of loam to one each of the manure and leaf-mould. A longer succession of flowers will be kept up if weak liquid manure-water is used. I noticed as very desirable two sorts: Sultan, a large fine scarlet, and Sedan, a pretty sort, the sepals and corolla of which were nearly alike and of a red colour. Yucca filamentosa variegata was represented by two splendid specimens in the greenhouse. Many cultivators prefer to grow this plant in a stove temperature, but if it can be grown quite as well in a greenhouse the latter is certainly to be preferred. Zonal Pelargoniums, too, have a house specially devoted to their culture, and the plants had been grown and trained into handsome specimens; they were just coming into flower on September 29. The plants would no doubt be assisted with a little manure-water, and would produce abundant blooms up till Christmas. It will be needless to

specify all the different varieties grown, but Lady Sheffield might be noted as the best pink; the colour was very clear and decided. Mrs. Turner was also a very fine bright pink. David Thomson was the best in the particular class to which it belongs, a brilliant scarlet crimson. Rev. A. F. Atkinson, intense scarlet, large truss, is a very desirable variety; and Louise might be noticed as a distinct variety, with lilac-coloured flowers of good shape and substance. I have never seen Adiantum farleyense in a more healthy condition than it was here. The growth was splendid. This fine Fern is easily grown if proper care is taken of it, but it does not always get the right compost to grow in, nor the most suitable place in the house. Mr. Swan pots it in good turfy loam and uses pots. The pots are well drained, and the compost is not a secret—good turfy loam, with just a little sand to keep it open: no manure is mixed with the loam at potting time, but the strong pseudobulbs are formed by copious supplies of manure-water when the plants are growing. Mixing the manure with the loam Mr. Swan thinks has a tendency to sour the compost. The plants are now throwing up numerous strong spikes. We pass from here into the cool house, and although it is a time of year that one would expect to find a paucity of bloom, I was agreeably surprised to find, amongst others, the handsome Oncidium reflexum in flower; this, though a Mexican species, does well in a cool house; it had longish spikes with numerous flowers, the sepals and petals of of the flowers, which open of a pale yellow or brownish yellow, and, as the flowers become older, change to creamy white. Masdevallias of different species were looking very well: M. Veitchii had numerous fine flowers, and others not in flower were doing remarkably well. Odontoglossum Phalænopsis will not succeed in this house; the plants under the care of Mr. Swan were as healthy as any I saw in my journey north. I have been very successful with it, and it is never removed from the Cattleya-house, where it receives abundant supplies of water all the year round. I must not forget to mention the splendid plants of Dendrobium crassinode growing in the Cattleya-house. This fine species, if it does not rank so high in the estimation of Orchid-growers as D. Wardianum, is



Fig. 93.—Standard pot vine grown by Mr. Cole. (see p. 528.)

sharp Bedfordshire sand to keep it open; the plants too are placed close to the glass, where they can get plenty of light, shading only from the rays of a burning sun.

Orchids.—In the first place the houses wherein these are grown are not large. One house, where Calanthes are grown to perfection, was span-roofed and 10 feet wide, the height from the floor line not being more than 7 feet 6 inches. Calanthe Veitchii was principally grown, as it was also in many other places in Lancashire, Cheshire and Wales that I visited. This is a plant that can be grown in any collection of stove plants, and it matters little whether it is a cool stove or one where plants from the warmest countries are cultivated, the plant seems to succeed in either. It may be grown as single bulbs in 3 or 4-inch pots, or as a dozen or more in 10 or 12-inch pots. Mr. Swan had potted about five bulbs in 8½-inch which are brownish yellow with a yellow lip. Odontoglossum Pescatorei was represented by some very fine varieties of the type. By many persons this is preferred to O. crispum; and indeed, if the flowers are not so large they are much more abundantly produced on the spikes; and the violet and purple-tinged spots and blotches are more pleasing than the brownish spots of the Princess of Wales Odontoglot. Of course all Orchid growers will grow as many as they can get of either, and O. crispum is also grown in quantity. O. Andersonianum was in flower, but the plant is rather different from that first exhibited under this name; this one, except in the shape of the sepals and petals, was not different in colour from O. crispum, whereas O. Andersonianum is quite intermediate between O. crispum and O. odoratum, or the first-named and O. gloriosum. It may also be known by the ground colour nevertheless, when grown as it is here, a species of first-class excellence, and its peculiarly knotted stems are very distinct. Cattleya Eldorado splendens is not one of the most easily managed of the species, but it is a handsome plant, and should be in every collection; it flowers in June and July.

In the warm house are to be found some excellent healthy specimens of the rarer Orchids, and such as would hold a high position if exhibited in competition. Vanda Cathcartii was in exuberant health, and two strong spikes were pushing out from the axils of the leaves. The rather rare Phalænopsis Lowii was in flower; the flowers of this species, though not large, are very pretty; the sepals and petals are pale purple or mauve, and the flower has a purple lip. The plant, though small, had two branched spikes. This species is of small growth, and rather difficult to cultivate.

Zygopetalum rostratum was also represented by a very healthy plant, with three beautiful flowers on a spike. I was much struck with a handsome specimen of Phalænopsis Lobbiimmiana; this plant was composed of one large specimen in the centre, and no less than eleven more round it, and Mr. Swan told me that the whole had been produced from the one plant in three or four years. Mr. Swan is well known to be one of the most successful growers of Dendrobium Falconeri; he had a number of plants which were in excellent health. They had been grown near the glass in the warm house since March or April, and all through the growing season had been freely syringed. This treatment produces a vigorous and healthy development of the young pseudobulbs, and as the autumn approaches less water is necessary. In December the plants are placed in the greenhouse, and rested in the same way as Dendrobium nobile is. In March they are again removed to the warm house, where the flower-buds soon begin to move, and in May they are a blaze of beauty. While writing about this plant I may say that one very successful grower, who flowers a large handsome specimen annually, told me that he placed the said plant overhead in a tank of water every morning for about half an hour. This style of culture may not commend itself for general acceptance, but it shows that success is to be attained by daily drenching with tepid water. Cultivators ought to take note of the fact that nearly all the slender-growing Dendrobiums, such as the above fine species, D. Devonianum, D. amœnum, and even D. Bensoniæ, are very liable to be attacked by red-spider; the insidious pest gets upon the leaves of the young growths, and if the cultivator is not watchful it will soon do irretrievable damage. Daily syringing prevents its gaining a foothold. Although it was a very wet day when I visited Fallowfield I could see that the outside department and flower garden were well kept. Roses and other shrubs seemed to succeed pretty well; the whole of it bearing witness to the good management of the head gardener. *J. Douglas.*

Notices of Books.

Steam, Air, and Gas Engines. By John Bourne, C.E. Longmans, Green & Co.

This work, like previous treatises of Mr. Bourne's, is one of the most perfect works of its class. Its completion has unfortunately been delayed owing to some experiments which the author has been making, and the results of which he desired to incorporate. The publication was commenced in 1868, and was continued until 1870, when it was delayed till some few months ago, when the volume was completed. Of the nature and extent of the information contained in this work we cannot give a better idea than by a brief statement of its contents. The work opens with a general survey of the condition and prospects of steam and other engines, following which is an account of the results of recent experiments on the strength of materials used in the construction of engines and boilers. Then come chapters on pumping and mining engines, mill and marine engines, engines for various factory uses, &c., followed by remarks on the application of steam to agriculture; and, finally, the new and important subjects of gas and air engines. The results of Mr. Bourne's investigations are that he finds the steam engine of the present day substantially what Watt left it, and he looks forward to steam being superseded by more economical and simpler means. An appendix contains reprints of Mr. C. Wye Williams' boiler projects, and a valuable report on the evaporative values of coal, by Dr. Richardson and Mr. E. L. Fletcher. The scientific principles are well explained, and with evident care. The volume contains about fifty double-page plates, and some 500 or more woodcuts, which are well and carefully executed. A large number of these have been added or substituted since the issue of the first edition, some twenty-two years ago. Altogether the present edition of the Artisan Club's well-known *Treatise on the Steam Engine* is a work of value, and worthy the attention of all those who have to do in any way with machinery in which steam is employed.

—— Messrs. Cassell have issued the first part of *Heroes of Britain in Peace and War*—a publication intended, as its title indicates, to commemorate and diffuse the knowledge of the noble deeds of our forefathers. After a short introduction explanatory of the objects of the work, the chronicle of heroism begins with the mention of those by whose agency the abolition of the slave trade was accomplished. Messrs. Cassell have also sent us the first part of the *Leopold Shakespeare*, a small quarto in double column, with clear small print, and with illustrations the value of which does not seem to be great.

AWARDS AT THE PARIS EXHIBITION.

The following is a copy of the official list of awards made to British exhibitors in the horticultural section at the Paris Exhibition :—

Class 85. Conservatories and Horticultural Apparatus.

Messrs. Barnard, Bishop & Barnard, Norfolk Ironworks, Norwich a Silver Medal. (Subject not stated).

Messrs. Boulton & Paul, Rose Lane Works, Norwich, a Silver Medal for an ornamental conservatory of bent wood and iron.

Messrs. James Boyd & Son, Macdonald Street, Paisley, a Gold Medal for an ornamental conservatory of wood and iron, admirably adapted for horticulture.

Messrs. Carter, Dunnett & Beale, High Holborn, London, a Gold Medal for models of all kinds of roots; fine collection of all kinds of seeds.

Messrs. Coleman & Morton, London Road Ironworks, Chelmsford, a Bronze Medal for garden pumps and watering apparatus.

Messrs. Follows & Bates, Dutton Street Works, Manchester, a Bronze Medal for grass mowers.

Mr. J. Caven Fox, Royal Horticultural Gardens, South Kensington, a Silver Medal for kiosques and rustic buildings.

Mr. B. Harlow, Macclesfield, Cheshire, a Bronze Medal for apparatus for warming conservatories.

Messrs. Hartley & Sugden, Gibbet Street, Halifax, a Silver Medal for boilers for thermo-syphons.

The Patent Waterproof Paper Co., Canal Works, Willesden Junction, a Bronze Medal for garden labels of waterproof material.

Messrs. Saynor, Cooke & Rydal, 13, Edward Street, Sheffield, a Silver Medal for horticultural cutlery.

Messrs. Sutton & Sons, Royal Berks Seed Establishment, Reading, a Silver Medal for a most remarkable collection of seeds, models of roots, &c.

Messrs. J. J. Thomas & Co., 285, Edgware Road, London, a Gold Medal for wire applied to horticultural purposes.

Messrs. E. Webb & Sons, Wordsley, Stourbridge, a Bronze Medal for fine collections of seeds, fruits, flowers, &c.

Class 86. Flowers and Ornamental Plants.

Messrs. Carter, Dunnett & Beale, a Gold Medal for grass lawns.

Class 87. Vegetables.

Messrs. Carter, Dunnett & Beale, a Gold Medal for a large collection of Potatos.

Class 89. Forest Plants and Seeds.

Messrs. Carter, Dunnett & Beale, a Gold Medal for complete collections of all kinds of seeds.

Class 90. Hothouse Plants.

Mr. J. Wills, Onslow Crescent, South Kensington, Grand Prize for ornamental hothouse plants, novelties, &c.

The following awards have been made in other sections :—

Messrs. Barnard, Bishop & Barnard, a Silver Medal for ornamental metalwork and galvanised iron gates, and a Bronze Medal for iron gates.

Messrs. Boulton & Paul, a Bronze Medal for galvanised iron railings.

Mr. B. Edgington, 2, Duke Street, London Bridge, and Mr. J. Unite, 291, Edgware Road, Silver Medals for tents.

Mr. B. Harlow, Honourable Mention for heating apparatus.

Messrs. Hartley & Sugden, Silver Medal for hot-water apparatus for heating.

Mr. Edwin Lumby, West Grove Works, Halifax, Gold Medal in class 85 (subject not stated), and Silver Medal for hot-water apparatus.

Messrs. Sutton & Sons, Gold Medal for Beans, Peas, &c.

Messrs. Edward Webb & Sons, Silver Medal for preserved vegetables.

Messrs. Whitburn & Young, Milford, near Godalming, Honourable Mention for artistic decoration on wood by the Xylographic process.

Mr. John Wills, Gold Medal for ornamental hothouse plants, &c.

Garden Operations.

FLOWER GARDEN, ETC.

Contemplated alterations should be put in hand at once, as it will be found in the long-run very bad policy to leave these, or indeed any other kind of work which can be done to advantage at this season until the spring, because then every day brings its proper work, and arrears of this kind interfere sadly with the work of good keeping at a time when much of the pleasure to be derived from a garden depends upon its being well kept, so that unless extra labour is employed to get it off the hands, it will interfere more or less with its condition through the greater part of the following summer, and more particularly in the matter of weeds, as very much may be done at this season in the way of keeping them under by digging all the back parts of shrubberies as deep as possible, keeping open a good trench so as to be able to completely cover up all refuse, and also all other spots which are not brought so prominently under the eye, but which, if left undisturbed, are prolific nurseries of the seeds of weeds to be blown all over the place, but dig them in well at this time, and then chop the surface over early in the summer when the sun shines out hot, and they will give very little trouble after and much time will be saved at a season when it is scarcely possible to overtake the work which crowds upon us daily. New plantations of trees and shrubs should be vigorously prosecuted at once. There is so much advantage gained by early planting, and it is so much more economical in the long run, that I often wonder at planters who study a very close economy in things absolutely necessary, should yet so recklessly squander a great amount of labour by leaving alterations and planting operations until late in the spring when the labour is nearly doubled through the extra care in moving required at that season, and the watering necessary to maintain life in the trees, and this too at a time when the utmost amount of neatness and finish begins to be looked for, the want of which often causes sore disappointments which might be avoided by confining each work to its proper season.

Chrysanthemums and the latest sorts of Asters will now be the principal ornaments of the mixed borders. These should be neatly tied out, so as to display them to the best advantage and keep up a gay appearance as long as possible. A neat appearance in the borders must still be an object to strive for, but the fall of the leaf reminds us that extreme neatness is out of the question for the next three weeks or so, still much may be done by removing all decayed and exhausted flower-stems and the like, taking care that all marking sticks to indicate the situations of the various kinds of bulbous plants which are now dormant are renewed where necessary. Tender bulbs and other plants which it is desirable to leave in the ground all the winter, such as Lilium auratum, Tigridia Pavonia, Tritonia aurea, intermedia, and grandiflora, and others, should have a cone of sifted coal-ashes raised around them, to carry off a portion of the superabundant rains, and afford additional protection against probable severe frosts. We have tried cocoa-nut fibre and well decayed leaf-mould for the same purpose, but the birds interfere with them very much and scratch the whole away from the crowns. Cannas may be covered in the like manner, and if the bottom is well drained they will come up very strong next year, but if the bottom is at all retentive of moisture they will rot in the ground however well covered, and when the tops are killed by the frost the roots should be taken up and stored in any place secure from frost. When frost renders the Dahlia stems unsightly they may be cut off at about 9 inches from the ground, but if possible the roots, particularly of the spring-struck cuttings of valuable sorts, should be left in the ground as long as possible to attain substance, and on the advent of severe frosts should be taken up and plunged in moist sand in a cool and dry cellar or other erection where they can be kept cool and secure from frost. A warm and dry temperature is not at all desirable for young roots having but little substance, and the attention should be directed to maintain them in as plump a condition as possible when lifted, and before storing it is advisable to place them upside down in any safe place for a day or so in order to drain off any superfluous moisture which may have accumulated in the stems. The roots of Marvel of Peru may be taken up and stored in like manner. The planting of bulbs may still be carried on, but should be mostly finished within the next fortnight. In addition to the sorts mentioned in my last I would recommend a bed or beds of Spanish Iris. They are particularly beautiful from the variety of their colours. They are also very suitable for planting in patches in the mixed borders. The bulbous English Iris is also very useful for the same purpose. *John Cox, Redleaf.*

FRUIT HOUSES.

Strawberries in Pots.—In my last Calendar I adverted to certain malpractices in the autumn treatment of Strawberries, which are frequently the cause

of much disappointment, and to which source many subsequent evils may be directly traced. I need not therefore reiterate the advice then given, but revert to another phase in the autumn cultivation of this esteemed fruit, which I venture to predict is destined to take a more prominent place in future on the dessert-table up to the month of November, if not a considerable time after that date. I have had occasion from time to time to recommend to the notice of Strawberry growers the variety known as Vicomtesse Héricart de Thury (also in commerce under other synonyms) as the best autumn fruiting variety extant. I am now, however, pleased to be able to add another variety to the list in Underhill's Sir Harry, a grand forcing Strawberry, and one that seems to retain its fertility till late on in the autumn and winter quite as freely as the Vicomtesse, with this addition that it grows to twice the size, and will therefore prove to be a great acquisition both for exhibiting and for home consumption. Plants of this variety lifted from the open ground and potted some time ago are fruiting and flowering apparently as healthy and vigorous as could be expected in the month of August. It is the flowers and their organic capacity we have to examine to make certain of supply of a fruit, and the setting process can be greatly assisted by placing the plants in favourable situations, and keeping up a gentle current of warm air mongst them ; in fact an atmosphere inclined to be saturated, if only for a few hours, will prove fatal to success in any stage of growth from this time and onwards. *W. Hinds, Otterspool.*

Peaches and Nectarines.—If all the trees in the early house have not been pruned no time should be lost in getting this operation finished, in order that the wood may be properly cleansed and dressed with the composition formerly recommended ; the trellises and woodwork should also be washed and painted if necessary, with good oil paint to which a little turpentine may be added. When the composition is quite dry, get the trees carefully tied in, protect outside borders from being deluged with heavy rains, and have all ready for forcing when the proper time arrives. Give plenty of air to all late houses ; remove the remainder of the foliage with a light broom, get all vacancies filled up and prune without further delay. Trees that have been heavily cropped, and have made weakly growth in consequence, may be induced to break strongly next season by having one or two waterings with liquid manure, which should be applied to the inside borders after the hard, exhausted surface soil and mulching have been removed down to the roots, and prior to top-dressing with a few inches of good loam from an old pasture. The addition of a little burnt earth and old mortar will encourage the rapid spread of surface feeders : but no manure need be added to the compost. Pruning in cases of this kind may be more severe than when the trees have made vigorous growth, but the best time for thinning out the past year's wood is immediately after the crop has been gathered, in order that there may be free action of light and air on the young growths intended to produce the next year's crop. Young trees that are extending, and still have space to cover, should be well thinned out, but where gross shoots have been stopped during the season of growth little shortening back will be found necessary. This rule particularly applies to the Noblesse section of Peaches, which make a few wood-buds at the base, and one at the point of each shoot, the shortening of which is best deferred until the trees commence their growth. The season for planting having again come round, I would warn amateurs and gardeners having a limited space at their disposal to be careful in their selection of varieties. Many of the recent introductions have size, earliness, and in some cases colour to help them forward, but the majority of them are very deficient in quality when tested beside the Peaches of our boyhood. For one grower to test all the new and old kinds on the open wall or fully developed in the Peach-house would be simply impossible. The following eighteen varieties having given me great satisfaction, the time may not be inopportune for naming them in this paper :—Early Grosse Mignonne, Abec, Hale's Early (the best of the American Peaches), Doctor Hogg, Grosse Mignonne and Crimson Galande. Mid-season varieties :—Alexandra Noblesse, Dymond, Noblesse, Royal George, Violette Hâtive, Bellegarde, and Belle Beauce. Late varieties :—Stirling Castle, Barrington, Prince of Wales (a very fine Peach), Nectarine Peach, and Walburton Late Admirable. *W. Coleman, Eastnor Castle.*

PLANT HOUSES.

Orchids.—All the shadings, whether it be those pieces tacked on to the ends or the sides of the houses, or the blinds that are made to run down from the top, should now be removed, for the lessening of the amount of sunlight, and also the decreasing power of the sun's rays, will render them no longer requisite ; and unless situated in very favoured localities the light and sun-heat now obtained will not only not be injurious, or such as would give any cause for fear, but will materially assist in the ripening of the bulbs already formed, and be very helpful also in the further progress of those now attaining maturity. In some places it may have been thought desirable to fix a weather-board along the top ridge, to run the blind under when not in use, and allowing the blind to remain all the winter, so that when a sudden change of the weather occurs they may be run down, and so by the covering of the top lights of the houses the fall of the inside temperature as indicated by the thermometers does not take place so rapidly as the outside atmosphere would lead one to expect. This is very good so far as it goes, but when once the blinds have been let down, say on a frosty night, and rolled up again the next morning whilst the frost is still upon them, they naturally become frozen all along, and in endeavouring to get them down, should the frosts continue, will often become torn in many places, and after being used in this manner a very few times are quite useless when the spring returns and the sun increases in force and power, to be used with safety for shading purposes. There are, however, some houses where, through a deficiency of fire-heat, caused perhaps by a small or badly set boiler, or a small quantity of piping, where the help obtained from this source should not be discarded ; there the blinds should remain, and be used when it is considered wise to do so, for the price of the shading material is as nothing compared to the value of the plants that are placed in jeopardy, to say nothing of the sleepless nights of many who have charge of the fires at such times—an onerous and important duty where there is an inadequate supply of the means quickly to advance the temperature when it is suddenly required. Where, however, they are not thus required it is better that they be taken off, thoroughly dried, and then put by in a secure place free from damp, so that they can again be fixed and used when the season comes round. Houses that are situated where a large amount of smoke and clouds are often very prevalent—as we find it in Lancashire—must now have the outside glass and rafters well washed, that the sooty deposit collected upon them, in spite of heavy and sometimes continuous rains, may be removed ; by this means a little more light is admitted, which through the coming dull season is a very important item. When every regard necessary to this matter has been taken, in some cases more, in others less, for some localities will not require it at all, it will in all cases be necessary that the inside, and the plants there, should have the first and more important consideration. Here let order and cleanliness prevail ; make it a study to have everything in such a condition that, whether bloom is present or absent, there shall always be, by cleanliness and healthy vigour about the plants, an inviting appearance always observable, so that a visit at any time may give unmixed pleasure and satisfaction. Without intending to advise a continuous sponging, which may be carried too far, and plants become in a certain sense more clean than healthy, it is nevertheless very certain that, if vigour is to be maintained, cleanliness must be sought after and eagerly followed up. Many insects are imported with the plants, and some also of English origin prey upon them ; but each and all, as far as possible, must be kept down, and for this purpose there is little better than soft-soap and rain-water, using a sponge and a brush. These must never remain idle long. Any plant showing signs of filth or dust should be at once cleaned, and at certain times the whole of the plants should be gone over, well sponging and cleaning them, the pots washed, and then again arranged in such a manner that the front breaks of every plant can be seen, so that by a daily inspection the progress of every plant can be seen at a glance. To young men more particularly who now have the opportunity through working in these structures, it may be well to offer the advice, and also to urge upon them the habit of observing the individuality of each plant, under what conditions it succeeds the best, noticing, too, the position in the houses in which the plants are placed, the distance from the glass, the bright or shady side of the house, the time of growth, the manner in which the blooms are produced, whether grown in pots, baskets, or on blocks, the soil in which they root most freely, and the many other little circumstances that will come under their notice. These, if remembered and thought over and used with discretion, will be very helpful, and enable such young men to become more fitted to follow and doubtless to excel in the culture of these plants many of those who now have charge of them, and who have not been so advantageously situated. *W. Swan, Fallowfield.*

Stove and Greenhouse Plants.—Late batches of Caladiums should now be dried off gradually, except such as C. argyrites and Belleymei grown in small pots for decorative purposes—these may, if desirable, be grown all the year round. When the bulbs have gone to rest they should be stowed away with their pots on their sides underneath a stage or somewhere out of the way, where the temperature will not fall below 60° : if subjected to a lower temperature there is a risk of the bulbs perishing. I have known whole batches perish in a temperature of 54°, but 60° is a safe medium. Late batches of Gloxinias and Achimenes should also be treated in the same way. Water should gradually be withheld from large specimens or old Fuchsia plants, and when they have shed their leaves, or nearly so, they may be wintered in a shed or any suitable place out of the reach of frost. It is a good plan to turn them out of their pots and bed, or plunge them in spent Mushroom dung. This prevents the balls getting excessively dry, to the detriment, or the loss of the plants, as it should be borne in mind that the Fuchsias always require a certain amount of moisture at the root to keep them right : an excess of moisture would be as great an evil as too little. Cuttings struck last August and that have been potted on should be wintered on shelves, or some position as near to the glass as possible, in a temperature of 40° to 45°. Scarlet, pink, or white Pelargoniums that have been grown for flowering through the late autumn and winter months should now have a little warmth. If we were to draw a hard and fast line we would say aim at a temperature of 60° with plenty of air on all favourable occasions ; but we would prefer to be ruled by the weather, allowing an increase in mild and a decrease of several degrees in rough weather, but always contriving to keep on a little ventilation if possible. Plants for later blooming should not be potted, as this would induce them to make foliage at the expense of flower. Keep them in the same pots as long as possible, and when the pots are full of roots and the soil is pretty well exhausted, feed them with guano-water or liquid manure of some description, which will be far better than potting them.

Chrysanthemums will now be fast developing their buds, and should be assisted with all the feeding possible in the shape of liquid manure, and surfacing with rich compost. If not already housed, do so at once, and avoid as far as possible overcrowding, which would be the means of losing a lot of foliage and promoting the spread of mildew at the expense of flower ; no matter how hard they may be fed in other ways, it will not make up for the loss of foliage. Look over the stock of Eucharis amazonica, and keep them free from vermin in the shape of mealy-bug and scale. Occasional dippings in Veitch's Chelsea Composition will tend to keep them from thrips and other filth. The same rule is applicable to Gardenias and Stephanotis. An ever-watchful eye should be kept over them to have them clean and in health. Strong plants of Euphorbia jacquiniæflora should have the shoots arched or tied down to induce them to make some back growths, and after these have grown 3 or 4 inches the leading shoots may again be liberated. The object of this is, when the leading shoots have done blooming or been cut the lateral growths will keep growing and thus form a succession, which in many instances will be much more valuable than the first or leading shoots, particularly as to quantity of shoots ; and although the wreaths of bloom may not be quite so long, still the abundance of shoots produced will far exceed the first crop of blooms. Keep a sharp look-out for scale. If this is allowed to get a firm footing it will destroy the whole appearance of the plants infested.

Now is a good time to propagate a batch of Croton cuttings of the favourite kinds for early work next spring. When struck do not excite them into growth by too much heat, but keep them quiet until the end of January or middle of February. They may then be pushed into growth, and will do good service early in the season. Keep batches of small Dracænas rather quiet until February, or they will get drawn. Dip them and Crotons occasionally in Chelsea Compound to keep them free from thrips and spider. The floral whorls of bracts of the earliest batches of Poinsettias will now be visible. The plants should be assisted by feeding and an increase of temperature. To get thoroughly developed heads a temperature of 65° to 70° should be kept up. Dispense with all shading and stow it away dry for another season. All obscured glass should be washed—in fact, every house should now be thoroughly cleansed from filth and dirt to secure as much light as possible. *J. Ollerhead, The Gardens, Wimbledon House, S.W.*

Briar-Root Pipes.—Much of the wood used for making the so-called Briar-root pipes is derived, it appears, from Corsica. The White Heath, or Bruyère, of which Briar is a corruption, grows in great luxuriance and very abundantly among the trees and shrubs which form what is called the "Maquis" covering the mountain sides. In the course of the last few years, since Briar-root pipes have become such a large article of trade, the Heath trees have become the source of a lucrative industry. The roots are dug up and cut into rough forms of tobacco-pipes by circular saws worked by the water-power of the mountain streams. The pieces when cut up are sent in sacks to France, and thence to America to be eventually manufactured into "Briar-root" pipes.

THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 26, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 28	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Stock at the Exotic Nursery, Tooting, by Protheroe & Morris.
TUESDAY,	Oct. 29	Sale of Greenhouse Plants at Larkhall Rise, Clapham, by Stevens.
WEDNESDAY,	Oct. 30	Roots and Vegetable Show at Dumfries. Sale of Bulbs, Plants, &c., at Stevens' Rooms. Sale of Orchids, Greenhouse Plants, &c., at the Northampton Park Nursery, Islington, by Protheroe & Morris.
THURSDAY,	Oct. 31	Sale of Orchids, Seeds, Lilies, &c., at Stevens' Rooms. Clearance Sale of Stock, at the Nine Bells Nursery, St. Albans, by Protheroe & Morris.
FRIDAY,	Nov. 1	Unreserved Sale of Stock, at the Nurseries, Tooting, by Protheroe & Morris.
SATURDAY,	Nov. 2	Sale of Dutch Bulbs, at Stevens' Rooms.

REFERRING again to the WEIGHTS AND MEASURES ACT, concerning whose provisions we made some remarks in our last issue, we now insert a copy of an official letter which has been addressed to Captain CRAIGIE, of the Local Taxation Committee :—

"Board of Trade (Standards Department),
7, Old Palace Yard, S.W., Oct. 21.

"Sir,—I have to acknowledge your letter of the 17th inst., inquiring how far the legal position of farmers and other buyers and sellers of agricultural produce is affected by the Weights and Measures Act, 1878, and enclosing an extract from the *Chamber of Agriculture Journal* adverting to misapprehensions as to the scope and bearing of the Act, particularly as to the operation of its clauses 19, 23, and 24.

"In the first place, I am to point out that in all its main features the Act in question is a re-enacting and consolidating Act, and, generally speaking, makes nothing illegal which was not illegal under the previously existing law. Such changes in the existing law as it was necessary to make in order to preserve consistency or to remove doubts that had arisen were brought to the special notice of Parliament and of the public by a memorandum prefixed to the Bill at its different stages.

"As regards clause 19, to which you refer, and which is the clause which requires the sale of agricultural and other produce, if made by weight or measure, to be made by imperial weight or measure, I am to state that the clause is simply a re-enactment in altered and consolidated form of several clauses in the existing Acts. Unless, therefore, the use of any denomination of weight or measure now in use for trade is illegal under existing law, the use of such denomination will not be illegal under the new Act. The present custom of selling grain and other produce by weight or by measure, or by both weight and measure, is not affected by the Act.

"As regards clause 23, which imposes a penalty on any person who prints a journal or other paper containing a price-list in which the denomination of weight or measure quoted or referred to implies a greater or less weight or measure than is denoted or implied by the same denomination of imperial weight or measure, I am to point out that the clause is a re-enactment in exactly the same words, not of an ancient or obsolete law, but of a clause of the principal Act now regulating weights and measures—viz., 5 and 6 William IV., cap. 63, 1835, section 31.

"It may be worth while to observe that the offence mentioned in this clause does not consist in quoting a weight or measure unknown to the law, but in quoting a weight or measure known to and determined by the law, with a meaning different from that given to it by the law. Thus the 'load' and 'coomb' are not denominations of measure set forth in the Act, and the use of such terms is not affected by this clause. Such denominations, however, as the 'bushel' and 'quart' are set forth in the Act, and it is therefore illegal to quote or refer to any measure as a bushel or a quart unless they are of a capacity attached to these denominations by the Act.

"In conclusion, I am to direct your attention to clause 24 of the Act of 1878, respecting the use of material weights and measures. This clause imposes a penalty on every person who uses or who has in his possession for use for trade a weight or measure which is not of the denomination of a Board of Trade standard. From the list of such denominations of Board of Trade standards (the material representatives of imperial denominations of weight and measure) stated in the second schedule of the Act, it will be seen that all denominations of weight and measure now legally and commonly in use for trade are represented in the schedule by Board of Trade standards. By clause 8 of the Act this Department has also power from time to time to legalise the use for trade of new denominations of weight and measure, providing such denominations are multiples or aliquot parts of the imperial weights and measures. Should the exigencies of trade at any time demand the legalisation of a material standard weight of the cental of 100 lb. referred to in the *Chamber of Agriculture Journal*, or of any other standard being a multiple or aliquot part of an imperial weight or measure, it will be within the power of the Board of Trade to legalise such standard.—I am, Sir, your obedient servant,

"(Signed) T. H. FARRER.

'Captain P. G. CRAIGIE, Local Taxation
Committee, 21, Arundel Street, Strand, W.C."

While much of this official document reminds us of Mr. TOOTS', "It's of no consequence, I assure you," it still does not clear up the point we raised as to Covent Garden measures. So far as we see, sieves, pottles, punnets, are not Board of Trade standards, nor are "casts" of flower-pots, and many other weights and measures in common use by the gardeners and farmers of this country. The consequence is, according to clause 24 of the Act, that "every person who uses or has in his possession for use in trade a weight or measure which is not of the denomination [mark the word] of some Board of Trade standard, shall be liable to a fine not exceeding £5, or in the case of a second offence £10, and the weight or measure shall be liable to be forfeited."

With reference to clause 23, which imposes a fine of 10s. per copy on the printers and publishers of all price-lists, price-currents, journals, or other papers, in which the denomination of weights and measures quoted or referred to denotes or implies a greater or less weight or measure than is denoted or implied by the same denomination of the imperial weights and measures under this Act, it is satisfactory to find that "the offence does not consist in quoting a weight or measure unknown to the law [though the word "denomination" in the previous clause might lead one to infer that such an offence was created], but in quoting a weight or measure known to and determined by the law, with a meaning different from that given to it by the law." And so it would appear that the sieves, punnets, pottles, *et hoc genus omne*, not being set forth in the Act, are not affected by the clause in question, though they cannot be said to be denominations of some Board of Trade standard. If this be so and there are so many loopholes and exceptions, so many roads along which a coach and six may be so conveniently driven without risk, of what value is the Act? But this is perhaps pushing the matter to an extreme. It is far better to persuade and induce free-born Britons than to threaten or compel them. We are happy to find the corn-dealers and millers are acknowledging the absurdity of the present system, or want of system, and are of themselves proposing a more rational and easy method of weight for the sale of their productions; doubtless the butchers, and the bakers, and the candlestick-makers, not forgetting the Covent Garden salesmen and their clients, will follow suit; and let us hope that the immense advantages of simplicity and uniformity will so far prevail, that in a few years there will be no necessity to put in force the provisions of an Act so minatory in some clauses, so permissive in others, as the Weights and Measures Act, 1878.

THE silly season is not quite over yet, as the numerous letters in the daily papers on the subject of the EUCALYPTUS show. The planting of these Tree-Myrtles is advocated by these writers to be carried out in Cyprus, in Asia Minor, and elsewhere, and one writer in the *Standard* even goes so far as to recommend them to be planted on the Thames Embankment to neutralise the effects of the sewage impurities there, as also round manure factories, near outfalls, &c.! Those who know anything about Eucalypti know very well that it is only under exceptional circumstances that they will survive our winters at all. A severe winter would infallibly kill the majority of the trees down to the ground, if it did not destroy them outright. On a small scale, in favoured localities or where due protection could be given, the result might be different; but these exceptions do not invalidate the general truth of our statement. Perhaps, out of the hundreds of Eucalypti known in Australia and Tasmania, some might prove hardier in this country than E. globulus or E. polyanthemos, the two species most hardy here so far as at present known. It is of course fitting that trials should be made, and we believe they are being made at Kew and elsewhere, as to the relative hardihood of various species of this extensive genus.

Now comes the question of the effect which these trees have in averting the evil influences of malaria, sewage-gas, and the like. The writers in the papers seem to take this beneficial result for granted, but in truth it is by no means proved. Fever is not absent from the Eucalyptus forests of Australia, and the benefits alleged to have ensued from the planting of the tree in Southern Europe may much more probably be attributed to other causes than the balsamic exhalations from the trees. We have ourselves seen something of the planting of Eucalypti in various swampy spots along the southern coasts of France and the Genoese Riviera, and we of course accept in all sincerity the statements made as to the sanitary improvement that has followed the planting of these trees in those spots. But our personal observations have convinced us that the good effects are far more likely to have been produced by drainage operations, or even by the slight improvement made in the soil by the operation of planting, than by any balsamic exudation. Again, the very rapid growth of the trees, and the proportionate exhalation of water from their leaves, must necessarily have a good effect in absorbing some of the otherwise stagnant moisture in the soil. We do not, of course, absolutely deny the beneficial effect of the balsamic emanations under certain circumstances, but we do say they are not proven, and in our opinion the exudations in question are about as useful as the bag of camphor which timid old ladies wear round their necks when fever or cholera are rife. The great value of the tree in appropriate climates and localities consists in its rapid growth, a quality not to be gainsaid.

We have written these remarks in the hope of averting the disappointment which must inevitably ensue if the advice of the ill-informed writers in the daily prints be thoughtlessly acted on.

—— THE PARIS EXHIBITION. — In another column we give a list of the British exhibitors who have been awarded prizes in the horticultural and allied sections. It will be seen from the list that Messrs. CARTER & CO., of Holborn, have been awarded no less than four Gold Medals, indeed we believe the number should be stated as five—a larger number than has been obtained in any one section by any British exhibitor. Mr. WILLS' honours—a Grand Prize and a Gold Medal—are well earned by the plucky way in which he has almost alone sustained the honour of British horticulture. Messrs. BOYD of Paisley secure a Gold Medal for their hothouse, and other exhibitors are mentioned elsewhere. The recent exhibitions of fruits and vegetables have, we learn, been very remarkable, although but few British exhibitors have taken part in them. The Cercle d'Arboriculture, of Liège, exhibited more than 2000 varieties of fruits, and a corresponding society at Huy has taken the lead in the display of vegetables. Mr. LEWIS KILLICK, of Maidstone, showed a fine collection of Apples. In the case of Potatos Messrs. VILMORIN, of Paris, took a leading part, and among British exhibitors Messrs. CARTER & Co., and Mr. PORTER, whose mode of setting up their exhibits attracted special attention—the notion of washing the Potatos for exhibition not having yet suggested itself to the average French exhibitor's mind. We perceive

that Mr. Porter's name is not, as we had previously supposed, included in the official list of awards.

—— Herefordshire Pomona.—The first part of this publication has just been issued, under the editorship of Dr. Hogg and the auspices of the Woolhope Club. The work was, we learn, originally intended to be of a local character, as its title indicates, but the great and widespread interest with which the announcement of its publication has been received induces the Woolhope Club to believe that it will be more useful if its scope be made more general. It is intended, therefore—subject to the favour and support it may meet with—to make this *Pomona* a thoroughly English work. Its local name will still be retained, but it will embrace all Apples and Pears of established merit cultivated in Great Britain, even though some of the new, for special varieties, may not, as yet, be grown in Herefordshire. The Woolhope Club has neither the intention nor the desire to make any profit from the publication of the work; and, beyond the copies supplied to its members, the number offered for sale to the public is very limited, and only sufficient to meet the great expenditure of a work of this character. The second part of the *Herefordshire Pomona* will be published during the summer of 1879, and will contain, in continuation of the introductory matter, a paper on "Modern Apple Lore," "A Sketch of the Life of Lord Scudamore," by Dr. Bull, with a full-page portrait of his lordship; and a paper on the "The Cordon System of Growing Pears," by Sir Henry E. C. Scudamore Stanhope, Bart., with a full-page woodcut of the cordon wall at Holme Lacy. These will be followed by six coloured plates of such different varieties of fruit as may be procured in perfection during the ensuing season. The *Pomona* Committee of the Woolhope Club will feel indebted for any assistance that may be rendered to them by supplying information with reference to any new or rare Apples and Pears of acknowledged merit, their origin, date of production, and description of the fruit. If it be desired to submit them to the judgment of the committee, with a view to their publication in the work, it will be necessary to send a few well-grown typical specimens of the fruit, that such as are selected may be carefully drawn and coloured from Nature, and their descriptions and merits verified. Parcels of fruit should be sent to "The *Pomona* Committee, Free Library, Hereford," and they will be carefully acknowledged in every instance. For the moment we content ourselves with reprinting the above extract from the circular issued with the part, and reserve fuller mention for another opportunity.



Fig. 94.—Pot vine grown for table decoration by Mr. Sage. (see p. 528.)

Suffice it here to say that the letterpress, so far as we have examined it, is very interesting, and the coloured plates excellent.

—— A CATALOGUE OF BRITISH PLANTS.—The Rev. G. HENSLOW contemplates printing a catalogue of British plants, arranged according to HOOKER'S *Student's Flora*. Any one wishing to possess copies are requested to address him at 6, Titchfield Terrace, Regent's Park, N.W.

—— A DUTCHMAN'S JOKE.—We all know what a Dutchman's draught should be, but as a rule we are not given to consider the Dutchman as gifted with any keen sense of humour, or even with a very lively fancy. It seems, however, that if you as a purchaser happen to be so dissatisfied with the bulbs a Dutchman sends you as to return them to him, you may find yourself without other reason inscribed in the "Black-book" of the Haarlem bulb fraternity—and that the threat of placing you in that list of caitiffs is held out as a menace should you venture to propose even to return an unsatisfactory sample. Of course you may be a thief, a rogue, a fraudulent bankrupt, a manipulator of bank-accounts, or what not; and if so, and your name should figure in the bulb-growers' Black-book or in any other, it is not a matter of surprise—you are probably prepared for your fate, or at least aware of what may overtake you, but that a respectable firm should be so treated seems too good a joke even for a Dutchman. We are aware that a Trade Protection Society exists here also, and that in its proper sphere it is very useful, but we know of one instance where a threat of like nature to that made by the Dutch bulb house was uttered by a well-known firm of West-end drapers because an unsuitable article was returned; so that after all our Dutch friends have not all the joke to themselves; but we must say that a Trade Protection Society, or a Black-book Society, transgresses its appropriate functions when it threatens respectable people with terrors which should be reserved for known rogues.

—— TREES IN SUBURBAN THOROUGHFARES.—At a meeting of the Hornsey Local Board of Health, held on Monday, the clerk stated that a gentleman had expressed his willingness to hand over the sum of £100 to the Board for the purpose of planting the roads in the vicinity of Highgate with Plane trees. A motion was proposed and seconded that the offer be accepted with thanks, and that it be referred to the General Purposes Committee to carry out the proposal. Mr. J. CLARKE opposed the motion on the ground that the planting of trees was injurious to the roads, and entailed a considerable amount of unnecessary expense. The Chairman (Colonel STEDDALL) expressed an opinion that trees in the main thoroughfares properly and judiciously planted would be both useful and ornamental. Their gratitude was due to the gentleman who had made them the offer, and who, it was understood, had done so because he had once resided there. The motion was ultimately carried, there being only one dissentient.

—— THE LIVERPOOL CHRYSANTHEMUM SHOW.—A correspondent writes:—Is the date of the Liverpool Chrysanthemum show fixed? I read with much interest the announcement of the special prizes, but have not heard if the date has been fixed for the competition. The committee surely does not intend to keep the date to themselves until the last minute, forgetting that Chrysanthemums are earlier in the South, and that they require retarding to be at their best at the same time as those grown further northwards. I have no doubt there are other readers besides myself who would be pleased to see the announcement, and if the committee hope to see growers from all parts of the country take part in the competition the sooner the date is known the better. Chrysanthemums are very early in the South this year.

—— LINNEAN SOCIETY.—We append the announcement of the opening meeting, Thursday, November 7, of the session 1878-9 of this Society, when the Botanical papers to be read are:—1. On the Existence of Carpesium (C. cernuum?) in Queensland. By LEWIS A. BERNAYS. 2. Notes on Cleistogamic Flowers, chiefly of Viola, Oxalis, and Impatiens. By ALFRED W. BENNETT. 3. On the Absorption of Rain and Dew by the green parts of Plants. By the Rev. GEORGE HENSLOW. We are glad to observe this old and stable society still retains its pristine vigour in the amount and excellence of its publications, while increased interest is manifest in its meetings and discussions. Its library and reading-room have been well attended to, and many valuable additions made. As the central Natural History Society of the kingdom it deserves the support of all interested in biological science, and its history of late years, indeed the very titles of the papers above mentioned, show that the Society knows how to adapt itself to the new and greatly enlarged conditions of modern science, and does not restrict itself to questions of systematic zoology and botany solely.

—— FRUITS AND VEGETABLES IN VIENNA.—A writer in *Der Deutsche Garten*, of October 19, dating from Vienna, states that there is such an abundance of good fruit and vegetables in that city this season as he can hardly remember having seen before. Prices in consequence are extremely low—in some cases so low that the producers are almost losers. Melons and Water-Melons are sent in enormous quantities, and the very best of them are sold at about 2*d*. each. Large and beautiful Cucumbers were selling for less than ½*d*. each, and fine Hungarian and Italian Grapes at about 1*d*. per pound; Cabbage, Potatos, Turnips, and other vegetables are also wonderfully cheap. The crop of Grapes is so heavy, and the quality so good, that the prices of the wine still in the hands of the growers have experienced considerable reductions. In Austria, as here and in other countries, the heavy crops are the result of the copious rains of the first half of the summer.

—— A NEW PAPER-MAKING MATERIAL.—Mr. A. CRAIG CHRISTIE, F.L.S., of Edinburgh, draws attention in the *Edinburgh Courant* to the adaptability for paper-making of Molinia cœrulea. He describes it has having great tenacity of fibre, combined with a comparatively small quantity of silica in its composition—characters which help to make it valuable as a paper material. It seems that Mr. CHRISTIE has sent a small quantity of the grass to Mr. THOMAS ROUTLEDGE, the well-known paper-maker of Sunderland, who has made a trial of it, the result of which is given in some extracts from his letter, as follows:—

"I have tested your Molinia cœrulea, the same giving me a better result than I anticipated, so far as a laboratory experiment is concerned; and I conclude that taken as dried and put up carefully in bundles free from weeds and dirt its value would be equal to Esparto at £5 per ton dry. I, however, must refrain from reporting positively as to its value for paper-making from the result of so small an experiment. I should require at least 1 ton (more would be better) to test it practically and make paper from it. . . . It may be worth more than the value I mention, but only a practical working trial into paper can properly test this point."

Mr. CHRISTIE hopes that by means of his letter he may draw the attention of the landed proprietors in Scotland to the subject, so that a sufficient quantity may be forwarded to Mr. ROUTLEDGE for an experiment on a large scale. He describes the grass as growing in the open parts of woods and on moorlands all over Scotland, extending from the Shetland Islands to the Solway, and it could moreover "be cultivated where nothing else of any value will grow. As the plant lasts for several years, the only expense after the first outlay would be that of gathering in the crop."

—— SUTTON'S ROYAL BERKSHIRE ROOT SHOW is announced to take place at Reading (in the Messrs. SUTTON'S new range of warehouses) on the 23d prox. The schedule has been considerably improved, and special prizes are offered for sewage-grown roots, an innovation which is calculated to make the other classes more open. The special feature of the show is a Gold Cup, value £20, for the best three dozen roots of this firm's improved varieties of Mangel.

—— VARIEGATED PELARGONIUMS AT CHISWICK.—During the last week the sections of ornamental leaved Pelargoniums in the Chiswick Gardens of the Royal Horticultural Society have been unusually gay, taking on a colouring unusual at this season of the year, and far before anything seen during the summer months. Late in summer Nature is restoring something of the equilibrium wanting during the wet months of July and August, when the plants grew ampantly, but little colour appeared. If the present warm dry weather continues and frost keeps away, the plants may retain their fine character and reach on into November.

"The calm untroubled sky
Is fair with colour, and is glad with light;
Still is the stubble golden, and the night
Full of the Summer's perfume. Why
Should ye that are so fair make haste to die?"

Of the golden tricolors, Mrs. Pollock, Countess of Ashburnham, Macbeth, and Lady Cullum have been very good and effective. Of golden-leaved varieties, Golden Superb Nosegay, Robert Fish, Golden Harry Hieover, Creed's Seedling, and Crystal Palace Gem have been in rare form and are still good. The Bronzes have shone out with a brilliancy peculiarly their own, and the following have proved valuable for late summer beds:—The Czar, Maréchal McMahon, Black Douglas, James Richards, W. E. Gumbleton, and the Rev. C. P. Peach. Let us hope winter will linger yet, and leave for a while untouched by its disfiguring grip the plants we would fain enjoy a little longer.

—— BIG FUNGI.—Mr. JOHN SADLER informs us, that at the Edinburgh Fungus Show on the 11th and 12th inst. (an account of which appeared in the *Gardeners' Chronicle*, p. 508), there were some very large specimens exhibited. Two are certainly worthy of notice. Mr. MCKINNON, The Gardens, Melville Castle, exhibited a specimen of Polyporus giganteus, which measured 3 feet 6 inches in diameter, and Mr. WM. CONCHIE, Livingstone, Midcalder, exhibited a puff-ball (Lycoperdon giganteum) measuring 54 inches in circumference and weighing 20 lb.

—— GUM IN APRICOT AND PEACH TREES.—Mr. GEORGE BUNYARD, of Maidstone, communicates the following as bearing on the gumming of Peach and Apricot trees. In the weald of Kent Mr. SEALE of Capel Manor, Horsmonden, has successfully battled with this troublesome complaint in a simple way. As soon as he can detect any gum exuding from the tree, the part so affected is cut clean away with a sharp knife or chisel, and neatly anointed and smoothed over with "knotting" or any like composition. In some cases the stems are cut away half or five-eighths through their diameter, to get the dark and dead wood completely out, and the branches ultimately heal over and become filled out after a few years. Cherries are treated in the same way, and many a fine tree might be saved in this manner if attended to at the proper time. Further, this method of prevention is said to have the effect of throwing the trees into bearing, and at the same time checking that exuberance of growth which all cultivators know to their cost is fraught with consequences resulting in decay and death. Mr. BUNYARD adds:—"Having watched the effect of this mode of treatment for two or three years past, I am in a position to testify to the perfect cure thus effected."

—— GUIZOTIA OLEIFERA, flowering at Kew in the cool Economic-house, is of interest as yielding the Ram-til oil, for which it is grown in India and Abyssinia. It is a weak annual Composite, allied to Heliopsis, of which the flower-heads have much the appearance, and are now really pretty, having a bright yellow ray extending up to 2 inches across. The plant is 8 feet high and has variable leaves, oblong or lanceolate, and with finely serrated or jagged edges; they are amplexicaul (stem-clasping), about 7 inches long, and, as the entire plant, pale green. It is very rarely grown in economic collections, and it is curious to note that a first sowing this year flowered when but 2 inches high. Ram-til is commonly used in India as a lamp-oil, and also as a condiment; in Mysore the seeds are sown during autumn, and the crop is perfected in about three months.

—— FOREST GEOGRAPHY AND ARCHÆOLOGY.—Professor ASA GRAY has recently published a lecture on this subject in which after noting the existing condition of American forests he proceeds to inquire into their antecedent history and pedigree. The Professor shows how the distribution of existing forests is regulated by the rainfall and other physical conditions, the variations in which are indicated by the nature and abundance of the arboreal vegetation. The leading differences between the forest regions of the Atlantic and of the Pacific sides of the North American continent are sketched and contrasted, not only one with the other,

but also with similar forest tracts in North-east Asia (Japan and Manchuria), and in Europe. The proportion of coniferous to deciduous trees on the Pacific side is vastly greater than on the Atlantic side, where the proportion is not greatly different from what it is in Japan and Europe. While on the Atlantic side there are the Oaks, the Maples, the Beeches, the Liquidambars, the Limes, and a host of others intermixed with Conifers, on the Pacific side the forests are almost exclusively coniferous. California is the home of the two "Big-trees," the Taxodium sempervirens, or Red-wood, and the gigantic Sequoia (Wellingtonia). The Atlantic types, which are wanting on the opposite coast and in Europe, are represented by the same or nearly allied species in Japan, so much so that Professor Gray would not now be surprised to hear of a Sarracenia or a Dionæa in Eastern Asia. Europe is destitute of many Atlantic American types, such as the Magnolias, Tulip-trees, Liquidambars, Locusts, and a host of others; and yet this absence can hardly be attributed to present climate, as all the species alluded to can be and are cultivated in Europe, as well as the Pacific Conifers, which latter cannot be made to grow in the Atlantic States. But in bygone ages, in later tertiary times, all these, or most of these American trees, were native; their traces remain in the Miocene beds. Stately Sequoias flourished in Devonshire and in Switzerland, and even in what are now high arctic latitudes, and the forest flora of Europe was then as rich as that of America now is. All this was changed by the access of the glacial epoch. A prolonged period of ice and snow killed the trees and stopped their reproduction. In the Polar regions, as may be seen on a globe, but not on a map, the three continents of Europe, Asia, and America converge, so that it is easily conceivable that a species originating in one region might find its way into either of the other continents. In those polar regions the forest trees of existing America, as we have seen, existed prior to the glacial epoch. Their leaves, their stems, their cones still are embedded in the stone, witnesses of their former life. The inference drawn is that the existing forest vegetation is the descendant of that which once grew in polar regions, but which was driven south by the accession of the reign of ice and snow. Or, it may be, that while the cold proved fatal to the trees in the north those in lower latitudes were spared such disaster, and so remain as we now see them.

—— A Remarkable Rainfall.—On Thursday morning some very heavy showers of rain fell in the metropolitan district; and Mr. Barron, writing from Chiswick at 11.30 A.M., states that the rain-gauge there recorded the remarkably heavy fall of half an inch in fifteen minutes.

—— Succulent Beds at Kew.—At the south end of the Palm-house at Kew are four splendid succulent beds; they correspond in pairs, and are planted with an effect universally admired, the main features of which we may point out. In the two larger oblong beds are large plants of several arboreous Sempervivums, now of splendid development, and these are finely relieved by the totally different character of a few Agaves, Aloes, Kalanchoe, Crassula arborescens, and Yucca aloifolia. All are planted so far apart as to allow each plant to be well seen individually, and the ground is clothed with Sedum carneum [sarmentosum] and Mesembryanthemum cordifolium variegatum. The two round and smaller beds are planted on a similar plan, but with greater formality. These contain good plants of Agave (one of which is selected for the centre), Yucca aloifolia variegata, and Echeveria metallica, and are also set off with a carpeting beneath; they have further a continuous edging of Echeveria glauco-metallica. The design has evidently been to make each large plant a specimen of itself; and this is vastly superior to forming a level surface of foliage. Sedum carneum as a rambling undergrowth looks much better than when kept to a trim outline. To enumerate all the plants would be impossible, though it is worth mention that subordinate to those we have indicated are many others, forming quite a succulent collection.

—— National Rose Society.—We are informed that a meeting of the General Committee was held at the rooms of the Horticultural Club, Arundel Street, Strand, on the 15th inst., the Rev. Canon Hole in the chair, when the honorary treasurer (Mr. W. Scott) submitted his accounts, showing a balance in favour of the Society. We presume the balance-sheet will in due time be circulated among the members. The dates for the exhibitions for 1879 were fixed (subject to the approval of the annual meeting), the first to be held at the Crystal Palace on June 28, the second at Manchester on July 14. It was also arranged that a paper of instructions on Rose growing should be drawn up and widely distributed.

—— Mr. John Sadler.—Those who attended the late meeting of the Cryptogamic Society of Scotland at Edinburgh, as well as a large circle of friends to whom his zeal and obligingness are known, will be pleased to hear that Mr. Sadler has recovered from the severe attack of pleurisy which followed his strenuous exertions on behalf of the Society's Fungus Show.

—— Campanula macrostyla rosiflora.—This is a rose coloured variety of the new annual Campanula, which was so favourably reported on a year ago, and it has been introduced by Mr. Ernst Benary, of Erfurt. In every point but colour it represents the original species. Campanula macrostyla needs careful culture; it should have a warm, light, and rather rich soil, in a sunny position, then it succeeds well. But little was heard of it during the past summer, probably on account, to some extent, of its being new, but more owing to the wet character of the season. The flowers are so large, and of such striking character, that it is worth while to bestow special attention on the plant; the reward will greatly outweigh the labour expended.

—— Pavetta borbonica is a nursery name for a distinct and beautiful plant frequently found in gardens, of which no identification has yet been possible, because, so far as known, no flowers have been produced in cultivation. Another pretty stove-plant is grown as Terminalia elegans, and does not even resemble the genus, but what it is cannot be discovered without flowers. These are plants of a kind to be grown for years without flowering, so that good service would be done by sending specimens to Kew in the event of their flowering. The identification of such plants for a *Hortus Kewensis*, or *Europæus*, is in the highest degree desirable. A botanist would be strongly inclined to pass the names over, but unless included the work would lose in value considerably, especially to the well-informed horticulturist. Effort has been made to get the names of these and of others, but without proper material naturally without success. The number of plants introduced and distributed without botanical description is enormous, and it is also of common occurrence to find that plants are known for years and familiarly under a wrong name.

—— Colletia cruciata, a curious well-known shrub, is now covered with Convallaria-like scented flowers. It is in flower out-of-doors at Kew, and in the Temperate-house we have seen it extremely attractive. When grown under glass the white blossoms are of greater purity, and as a curiosity it is well worth pot culture. Our own plant is so covered with flowers that the branches are scarcely visible.

—— Begonia fuchsioides.—It may be of some interest to those who grow Begonia fuchsioides, to know that its flowers besides being valuable from a decorative point of view, may also be made useful in the culinary art. It seems that the unexpanded blossoms have "a delightfully acid flavour," and that when cut up small and sprinkled over a salad, both the appearance and the "tone" of the toothsome relish is greatly improved. We were not previously aware of the flowers being used for such a purpose, but record the circumstance on the authority of Mr. Harrison Weir.

—— Primroses in Autumn.—As paragraphs are appearing in the daily and weekly papers announcing the appearance of Primroses in flower, it may be reasonably supposed the writers and editors look upon these manifestations as something out of the common way. It is not at all uncommon, and it is especially worthy of notice that the new high-coloured Primroses are prone to flower in the autumn. It is only reasonable to suppose many of the hardy Primulas will flower with unusual freedom his autumn, as the plants in the open ground made a very generous growth in consequence of the heavy and continuous rainfall being followed by a warm, dry time. Auriculas appeared unusually disposed to send up autumn trusses, and the choicer Polyanthuses are doing the same. A bed of selected seedling gold-laced Polyanthus that flowered well last spring in good soil is now flushed all over with black and gold blossoms, and the fancy varieties are following suit. Strong plants of Primula denticulata which have been growing in the open air all the summer are seen to be busy getting up their trusses of bloom. The high-coloured Primula vulgaris auriculæflora, taken up from the open ground and potted in August, is blooming freely; and many of the hardy Primulas, if treated in this way, and wintered in a cold frame, would be found very useful and interesting decorative plants during the dull season. There are many plants which can be had in flower in autumn if collected together, and any one with a cold house or frame can have something in flower all the year round.

—— Hybrid Lycaste.—We have had flowers of a hybrid Lycaste placed in our hands by Mr. W. Marshall, whose name is familiar amongst Orchid growers. The plant was raised some nine or ten years since, between L. Skinneri and L. Deppei, and is, we believe, the second which has as yet been flowered. The three large sepals, of which the upper is erect and the lateral ones spreading, are of a creamy hue, with a faint tinge of green, and are thickly dotted with purple on the lower half. The two erect petals are large and of nearly the same colour as the sepals. The lip is yellow, densely spotted with crimson on the lower half, pure yellow on the recurved front lobe, and with a tongue-shaped orange fold lying on the disk, and projecting as far as the base of the front lobe, while the side lobes turn up to meet the column, the latter being about half as long as the petals, yellow, intensely sanguineous at the base. The breadth of the flower across the expanded lateral sepals is 5 inches. It is a very interesting production, but is not regarded by its raiser as sufficiently attractive to be of any great value as a cultivated Orchid.

—— Severe Punishment for Destroying Trees.—In Germany the punishment for wilful damage to public property is very severe, as the following particulars, taken from a Dresden paper, testify. One night in January, 1877, sixty-three young fruit trees, which it is now the custom to plant along the sides of public roads, were broken off. In November of last year thirty-four more shared the same fate, and a smaller number on another occasion. Moreover the destructive propensities of the delinquent were not yet satisfied, and seventy-six more trees were sacrificed in the same way. But this time the offender was caught in the act, and he was found guilty of having been the author of the damage done on four different occasions. In spite of the pleadings of his counsel, and his own endeavours to show that he was irresponsible for his actions on these occasions, because he was under the influence of drink, he was sentenced to two years' imprisonment and four years' *ehrenrechtsverlust*. We remember a case in this country in which several cottage gardens were completely stripped of all their produce one night in the month of June, and the perpetrators of this drunken freak got off by paying some ridiculously small amount as compensation to the poor owners, who dared not move further in the matter. Everything was uprooted, from Cucumbers to Cabbages. The sufferers were poor mechanics, who took great pride and pleasure in their gardens, and also of course derived many necessities and some luxuries in reward for their industry.

—— Cultivation of the Citron in Corsica.—It was anticipated not very long since that the cultivation of the Citron in Corsica was likely to become very largely extended, and to create a new and important export. This anticipation seems, however, not to have been fulfilled, for we are told "the prices of the fruit have fallen so much that the growers in many districts have abandoned that culture, and are now grafting Lemons on the Cédrat tree." About five years ago the fruits were readily purchased at 120 fr. the 100 kilos., while this year the same quantity barely realised 4.50 fr.

—— Gardening Changes.—Mr. W. M. Geddes has left Annesly Park, to take charge of the gardens at Stuffynwood Hall, near Mansfield, Notts.

Forestry.

MUCH has been written on the effects of remarkable seasons upon forest trees, shrubs, grass, cereal and green crops, together with their direct and indirect influences upon the human family and lower animals.

For some unaccountable reason, the effect of seasons remarkable for their heat and dryness have been lavishly dwelt upon, while wet, cold, and sunless seasons have passed and gone without exciting note or comment, though the evils resulting from the latter are manyfold greater than from the former. In Scotland the evils arising from heat and drought are comparatively small when compared with those resulting from cold and wet.

In 1868 elaborate articles were written to the newspapers, and otherwise, with a view of showing the close and inseparable connection between forests and moisture, or rather trees and rain. One zealous writer continued urging the necessity of forest tree planting, with a view to increase rainfall, till such an abundance came as for the time extinguished his zeal, but no sooner did 1869 begin to show corresponding signs of drought with those of the previous year, than he again commenced to call aloud for planting, and denounced the cutting down or clearing of plantations, woods, forests, and even single trees, as the most certain and effective means of ruining the country. The autumn of 1869, however, eventually turned out cold and wet, so that rain was for the time complained of instead of wished for, and the clamour for planting as a means of producing rain again ceased.

A statement of carefully collected facts on wet seasons may, it is presumed, be a fitting accompaniment to those of the dry seasons. While a well grounded knowledge of the facts resulting from the dryness of some seasons and wetness of others may constitute an interesting and instructive subject of contemplation, it is not likely that such knowledge, however perfect, would ever furnish man with sufficient power to modify or regulate, much less create or produce such changes in the elements as to prove of real practical benefit to the country. But because we cannot accomplish everything that is no good reason why we should attempt nothing, and while there are things over which we have no control, there are others over which we have.

If the planting of hill-tops and covering the mountain-side with forest trees attracts the vapoury cloud or condenses the floating mist, man may accomplish much, and rejoice in the works of his hand.

Assuming that cause and effect are a known and established law between trees and rain, it may well be asked, would it be for the general welfare of the nation to increase trees that more rain may fall? Would it be advantageous to the interests of the country to extend the area of its woodlands in the face of outstanding facts, showing that the excess of rain, cold, and damp do infinitely more injury not only to all kinds of vegetation but to all classes of animals, including man, than drought or heat have ever done or are likely to do in this country?

The Scots Fir being, if not the first tree to swell its buds and start into growth, is at least the first forest tree to mature its young wood and therefore suffers less from excessive wet or dry seasons than any others do. On dissecting Scots Fir of any age, from the sapling to the old tree, it is found that the concentric rings are about the same in all seasons, whether hot, cold, dry or wet, at least the difference is so small that the connection cannot well be traced, and situation, exposure, soil, &c., may produce the difference of growth altogether independently of atmospheric influences, or at least produce such important results as to obliterate the otherwise traceable effects of favourable or unfavourable seasons, excessively dry or wet. We have known, and can point out, trees of almost every age and species which, solely in consequence of their roots entering better and more congenial soil after remaining long in soil unsuitable to their nature, burst forth with magical vigour, and assume altogether a new and improved habit of growth. Other trees are known to have fallen into a sickly state and become stunted in growth from such causes as their sheltering neighbours being removed.

Drainage has materially altered and improved both single trees and large areas of plantation or forest, while the obstruction of drains and water-runs has universally injured or ruined all forest products within their influence. Let the above examples suffice, though hundreds might be given to show the way and manner by which false conclusions are arrived at in regard to the growth of trees, as indicated by the annual layers or concentric rings.

While the growth of advanced and old Scots Fir trees in 1872 was an average one, at least upon dry soils and southern exposures, it was otherwise with newly-planted trees and very young ones, especially in the nursery ground. Few, if any, of even the least favoured plants perished in consequence of the wet and cold, but as the season advanced they turned white in the leaves, assumed a pale and sickly appearance, and made almost no perceptible top growth.

Nurserymen in many cases, both North and South, lost heavily by their seedlings, one and two-year-old transplanted. In some transactions known to the writer the same money was paid for the plants at three years old as was paid for the same plants the year previous when only two years old, thus showing that the nurseryman lost one whole year's growth upon the plants and his labour besides. The loss of one year's growth on the plants was, however, neither the greatest loss nor the only one, for the young plants having so imperfectly ripened their terminal shoots as to cause them either partially to wither or lose the top bud, the whole structure of the plant must be injuriously affected for many years to come. *C. Y. Michie, Forester, Cullen House, Oct.* 8.

THE BOYD-WILLS CONSERVATORY AT THE PARIS EXHIBITION.

VISITORS of a horticultural turn of mind will remember the Boyd-Wills conservatory as a feature of prime importance in the horticultural section of the Great Paris Exhibition of 1878. Highly creditable, alike to its builders and its decorator, it stands for the time as a monument—and a grand one too—to British horticultural industry and enterprise. Favoured in no respect as regards position it is somewhat difficult to find unless you enter the Champ de Mars by the Jena Bridge, soon after crossing which some friendly signposts point the way to "Wills' grand collection of exotic plants," but when found it will stand inspection as well for its artistic merits as a show house as for the beauty and richness of its contents. Its builders and exhibitors are Messrs. James Boyd & Sons, of Paisley, and the materials used in its construction chiefly consist of wood and iron, the former having been preserved by Gardener's patent process, and so rendered well-nigh imperishable.

The form of the house is admirably shown on p. 537, so that we need say nothing as regards that feature, but the arrangements for providing ventilation claim more than a passing word. Abundant provision for this purpose is made in the roof and on all sides of the house near the ground level. The bottom ventilators consist of neat perforated iron panels, through which the air passes and comes into contact with the heating apparatus fixed close to the sides and ends of the house, and so becomes warmed to a more or less extent before reaching the interior. This is a decided advantage, inasmuch as it admits of air being admitted with safety in any condition of weather when its admittance may be considered desirable.

When the Messrs. Boyd had finished the structure, as our readers know, Mr. Wills took it in hand, and so arranged the interior in the natural style as to show his handsome specimen plants to the greatest possible advantage, while at the same time securing an artistically good effect when looked at as a whole. The borders are margined with virgin cork, and covered with a dense green carpeting of Selaginella, dotted over which are a great variety of plants, including Palms, Dracænas, Crotons, Indiarubbers, Marantas, Anthuriums, Bromelias, Ferns, Nepenthes, and other subjects of an ornamental character. From the roof hang baskets of Ferns, Begonias, Tradescantias, and other plants available as the season came on; while above them and covering a great proportion of the roof and the iron pillars supporting it, is a perfect thicket of Cobœa scandens.

With so many people seeking admission, it can easily be imagined that the plants have suffered in equal proportion, and that frequent renewal has been a costly necessity, but we are glad to find that Mr. Wills' resources at Anerley and Fulham have been quite equal to the occasion; and it speaks well for the admirable spirit which animates him, to know that while the French exhibitors almost systematically kept their houses locked up, the Boyd-Wills conservatory has been kept open almost continuously since the exhibition opened in May. Such a spirit of enterprise well deserves all praise, and we heartily congratulate both Mr. Wills and the Messrs. Boyd on the success that has attended them.

Home Correspondence.

Weights and Measures Act.—Whilst other trades that will be materially affected by the operations of this Act are moving with a view to make its provisions known, and further take such action as may be necessary to protect the interests of their respective bodies, the market garden trade has done nothing, though as your admirable leader of last week shows, that trade will be very largely affected by it. It is not merely that the Act must, if enforced, bring about an immense change in the measures generally in use by the growers and vendors, but that the changes incidental may be productive of great hardships to those whose business it is to supply these measures to the trade. So great are the changes involved, especially in relation to sieves, half-sieves, strikes, punnets, and other London fruit measures, that hundreds may find themselves violating the provisions of the Act without knowing how they have sinned. Parliament last session was so occupied with the discussion of foreign matters that its home legislation was of the most sparse kind, and in this particular instance most hurried, as tens of thousands of newspaper readers hear only of the Act after it has become law. Why not have first published widely a list of all local measurements and weights, and their relation to standard and imperial measures, and have thus pointed out what names and measures it was necessary should be changed to be brought into unison with the legal measures, as also to show those which would be illegal. Market growers and vendors are now quite bewildered with the provisions of the Act, and will presently cry out about "harassed interests" with a vengeance. The matter involves such a vast accumulation of old customs and associations that no political conjurer can deal with it off-hand as by a stroke of a wand. It would be wise to invite the Government to delay the enforcement of the Act for at least another year, and thus give time for all those affected by its provisions to understand what they are, and be prepared. A twelvemonth might well be spent in diffusing sound information on the subject and probably ere the year had expired there would be such a general acquiescence in the demands of the law that when it came into force it would find its enactments already accepted and understood. That our present numerous weights and measures are both grotesque and scandalous there can be little doubt, and a radical change to one uniform system would be an immense boon. With reference to the metric system, which the Act permits to be used as lawful, one is tempted to ask why it is that a mode of counting and measuring so simple and easily understood should not have long since been made a part of the teaching in our public elementary schools. Parliament in permitting its use lawfully before the people understand even the simplest elements of the system, have begun as usual at the wrong end. Why not have enforced the teaching of this new system in all our schools for a few years first, and then the people both through the schools and their children would have understood it and probably soon adopted it. Now we are at liberty to use that of which nothing is known except that its various descriptive numbers and weights are almost unintelligible and in some almost barbaric. The system, good as it is, wants simplifying before it can be universally adopted here. The section that relates to the printing and publishing of price-lists, market returns, &c., promises to be most oppressive, and as catalogues for use during the ensuing year are already being prepared in all parts of the kingdom it will be well to advise the compilers to be careful. So reckless, however, seem to be many of the provisions of the Act that it will not be a matter of surprise if next session Parliament does not find itself called upon to undo much that now seems open to objection. *X.* [See our leading article in this week's number. EDS.]

The Decimal System.—I do not think that the chief objection to the decimal system is its barbarous nomenclature, but the fact that to get rid of the duodecimal element in our means of calculation (such as the division of shillings into pence, and feet into inches) would be a step back into barbarism, not out of it. The only reason why we use a decimal notation is because savages count upon their ten fingers. I, who have for years used a duodecimal notation and multiplication table, and know what a far simpler and more convenient means of calculation it is than a decimal notation, can hardly understand how practical Englishmen can seriously think of adopting an exclusively decimal system. A decimal coinage, for instance, means one in which, if you pay a man so much a week, you cannot pay him a day's wage or any portion of a week's wage in the current coin at all. So absurdly inconvenient is it, that the nations who use decimal coinage are reduced to the necessity of giving up the use of the tenth of a coin as being practically useless, and using only the division into hundredths; that is to say, if our coinage consisted of sovereigns, florins, and a coin the tenth of a florin, the florin would go out of use, and we should

have to use only the sovereign and hundredth part of it. *C. W. Strickland, Hildenley, Malton.*

The Trees in the Parks.—There is little difference between your correspondent Mr. Newton and myself about the trees in the Parks except on two points—1st, the thinning of the trees in Kensington Gardens; and 2d, the cause of their unhealthiness, on which I would ask you for space for an answer. First, as to the thinning. I quite understood him to mean what he says "there are twice as many trees in the ground as there should be." And I agree with him as to all his reasons for thinning, but I would give the increased light and air, and the increased space for the roots, more gradually than he would. If these trees were my own, I would only thin them at present to the extent of about one in four rather than one in two as he proposes—my objection to his proportion being that the trees to be left would be ragged and unsightly, and from their scanty roothold of the ground would be very liable to be blown down if the wind was admited too freely among them. Second, as to the cause of decay of the trees. I have not my previous letter before me, but I don't think I said that wet is the sole cause of decay, and am prepared to admit that exhaustion of the soil may have something to do with it, but I still maintain that wet contributes very largely to it. I admit that the trees on the north and east side of the Round Pond are dying to even a greater extent than those on the south side, but this I think is a proof of the correctness of my reasoning; for on the south side the natural slope of the ground has not been interfered with, and any water that may soak from the pond escapes at once, whereas on the other side the water is retained at the level of the roots, the slope being very gradual, the trees nearest to the pond being the greatest sufferers. The remedy appears to me to be obvious, that as the trees I have found there. Let the same rule be applied to the very special climate of London and the soil of the Parks. *C. C. H. G.*

—— Strange as it may seem to your correspondent, Mr. Alex. Forsyth, I maintain that it is not mulching but drainage that those poor Kensington Garden trees want—surface drainage. The surface is for many months a complete quagmire anywhere excepting on the gravelled paths. The gravel gets completely saturated with moisture, and has no drainage, the subsoil should therefore also be drained. But what these trees require more than anything is very careful thinning. If the soil were the richest black mould it could not maintain in health half the number of trees that are there now, and yet every year more are planted, and common feeding plants which eat out the nourishment from older and less gross feeding neighbours. *East Somerset.*

The Tomato Disease.—How we are to obtain a crop of this useful and much prized vegetable is becoming a question of much importance both to market and private growers. This season it has been very destructive, amounting in some places to almost a total loss of the crop—a serious thing in places where the demand is large. In the summer of 1875 I planted out against a south wall a hundred good strong plants, but never had a good fruit from them; and a neighbour of mine had a similar experience. In 1876 I had a good crop. This season the disease has again been very destructive, but not so bad as in 1875. I took extra trouble to get good strong plants this year previous to planting out. They grew away well and set a grand crop, but on August 26 the disease made its appearance. On August 29, 30, and 31 the weather was stormy, close and warm, and on September 1 the Tomatos on the south wall looked just as if a fire had passed over them, while some on a west wall escaped; and as the weather improved as the month advanced these gave us some good fruit. *J. C. F.*

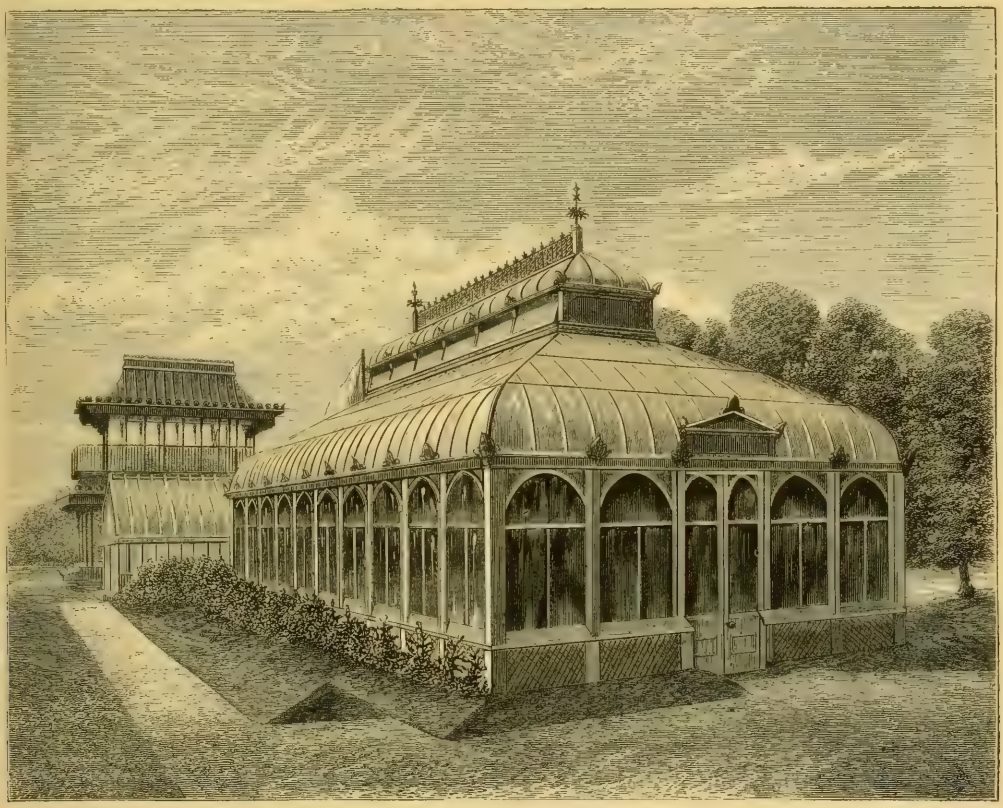


Fig. 95.—THE BOYD-WILLS CONSERVATORY AT THE PARIS EXHIBITION. (see p. 536.)

Delphinium and the Slugs.—I see some of your correspondents like myself have suffered from excess of slugs, so that many Delphiniums never came above the surface. I found the only effectual preventive was pepper—lime, soot, &c., only lasted for a time, whereas pepper on the plant and on the ground around enabled me to have their lovely light blue flowers both in autumn and spring. I think, perhaps, snuff would be even better, and not much, if any, dearer. *East Somerset.*

The Fuchsia.—I have from boyhood been a lover of Fuchsias, and for many years a grower as well as a successful exhibitor of them. I well remember the variety called Dr. Jephson, and I have also a list of about forty other varieties that were popular some five-and-twenty years ago. The gardener under whom

I then served was master and friend to us, inasmuch as he gave us lads a book in which he wrote a list of the many plants of the garden, and often in the evenings he would show us how to distinguish plants as well as teach us their names. I agree with "A. D." that the Fuchsia is not so generally met with at exhibitions as in past times, at least in many localities. It has been recorded (and I believe very justly too) in the *Gardeners' Chronicle* that nowhere are Fuchsias exhibited in such condition as in the West of England—Trowbridge, Taunton, Bath, &c. But if we come southward we find a large and flourishing society, in whose schedule are classes for Fuchsias, but it only brings out about three competitors for four prizes in the gardeners' class, and in the nurserymen's perhaps only one entry. Then, again, look at the metropolitan shows. The class for Fuchsias has been omitted from the Royal Botanic Society's schedule for some time, and I believe they are not shown in anything like such force at the Crystal Palace as of yore. I well remember, when serving at the Palace under Mr. Eyles, twenty years ago, the collections of splendid pyramids 8 and 9 feet high, which were exhibited there at the September shows. Amongst light varieties were the old (and beautiful for ever) Duchess of Lancaster; Venus de Medici, and Pearl of England; and of dark kinds Marquis of Bristol and good old Souvenir de Chiswick were grand, the latter some 6 feet in height, and well furnished down to the pot. Mr. Webb, of Tulse Hill, was a great exhibitor at that time. I daresay, too, there are many who remember those lofty pyramids of dark varieties which were to be seen near the entrance to the Sheffield Court. A cord used to be secured to a plug in the ground and fastened aloft to some of the girders or iron rods; the Fuchsias were tied to the cord, and when at their best they were grand indeed. I have no doubt the old Palace still affords many examples of Fuchsia culture. I saw two good varieties at Chiswick last year: Princess Beatrice (a light kind) and Noblesse (very dark). Wave of Life is an excellent variety amongst dark kinds, and Vainqueur de Puebla is good amongst double white corollas. I have not had Lucy Finnis long enough yet to speak of it as a good grower. Perhaps nurserymen will exhibit the Fuchsia more liberally, after the manner of Pelargoniums; and if the leading societies offer good prizes there may exist little doubt but that we shall see the Fuchsia again forming one of the most beautiful and attractive features of horticultural shows, as well as adorning the conservatory, flower garden, &c. *James Batters, Gr., Gillingham Hall, Norfolk.*

Eucalyptus globulus.—At p. 441 in your issue of October 5 appeared a paragraph describing a fine specimen in the Princes Park, Liverpool. At Kew also, near the Economic-house, is one worthy of note. It is 20 feet 2 inches high, and was planted out in the summer of 1876, then about 4 feet high, but with the decided disadvantage of previous confinement in a small pot. It is 2 inches higher than the Princes Park tree, but in girth of stem and diameter of head it is not quite equal, which may be accounted for by its close surrounding of shrubs over the roots and the rather poor sandy soil in which it is growing, and also by the disadvantage of its first planting mentioned above. These trees show the mildness of the last two winters, but not that this species is hardier than was supposed. *L.*

Oncidium macranthum.—There is here at the present time a plant of the above with a spike 12 feet 6 inches long, on which there are sixty-nine flowers; one of the branches has eleven, one has ten, one has eight, two have seven, one has five, one has four, five have three, and one has two flowers: the total shows that there are no flowers on the main stem of spike the point of which has for some time been kept well down. As nearly as I can remember it is eleven months since the first appearance of this spike. The plant has been for five months in the brightest and warmest part of the show-house. *N. German, Gr. to C. G. Hill, Esq., Arnot Hill, Nottingham.*

Large Mushrooms.—I believe that this season has been unusually favourable to the growth of monster Agarics. My son gathered seven very fine ones during a morning walk last month (September). They were all large, the finest of them the size of an old-fashioned cheese-plate. I now regret that I did not measure and weigh them. We had two dressed for lunch, and the flavour was delicious; the other five were made into ketchup. *Mrs. Alfred Watney.*

Autumnal Foliage.—In your excellent remarks on this subject (see pp. 468, 469) I was rather surprised to find no notice of the Horse or Sweet Chestnuts, though, of course, your lists were not by any means meant to be exhaustive. The foliage of these two trees is, however, among the most brilliant of all in autumn. Some of the varieties, too, of the Horse Chestnut, such as Æsculus flava, bring down the beauty of the Horse Chestnut to more enjoyable dimensions. I noticed a curious phenomenon during the last full moon in connection with a nice specimen of this tree. It stands at the union of two walks in the pleasure-grounds, and the light of the moon seemed to pass right through its beautiful leaves, so much so as to give it the appearance of being artificially lighted up. The effect was so singular that I stood and admired the tree for some time, and finally gathered some leaves and brought them into the light of the lamp before the peculiar appearance could be explained. The leaves were thin and of the most delicate orange hue, and the light of the moon seemed partially to pass through them, and also to be reflected from the leaves in such a manner as to make each leaf appear to be a source of light. No other tree or shrub glowed with moonlight as this one. The effect was rendered more striking as the plant almost touched a fine specimen of the Douglas Pine, which seemed dense and dark in contrast. The Pine absorbed every ray of light, and seemed to ask for more to hide away amid its towering mass of verdant boughs. The Horse Chestnut appeared to multiply the light fourfold at least, and made every leaf glisten like a silver reflector. It was a beautiful sight, and suggested the enquiry whether certain coloured leaves amid their other numerous and vital services to man may not also intensify the light of day, and moderate the gloom of night by their reflective powers. By the way I notice the purple Beech in summer and the common Beech in autumn put down as orange-coloured, and should hardly think that they deserve to be so designated. Writing of Beeches can one explain the rise and fall of the colour in the purple Beech? Are these changes mechanical or vital, originating in the varying texture or thickness of the leaves, or proceeding from changes in the colouring powers of the trees in the three seasons of spring, summer, and autumn. Expanding in inimitable lines of soft and vivid pink, deepening into deep red, culminating in something approaching to black, they rapidly lose colour during September and October, till they mostly fall, of a dirty ruddy green hue—with never a tint of orange here. Again, is this change of colour in leaves akin to the change of colour in Grapes which has been more than usually marked this year? And is the latter a matter of tension—of an addition of watery matter to the fruit—or does it proceed from a sheer abstraction or loss of colour? And if the latter, can it be accounted for by any known vital force or law, and is there any mode of arresting the loss of colour in Grapes? I had almost added that the loss is greatest in thin-skinned Grapes, such as the Black Hamburgh. But the West's St. Peter's is as thin-skinned or thinner than the Hamburgh, and it seldom loses colour, which the Hamburgh does. Again, the Alicante seldom loses colour—Mrs. Pince's Muscat often does, and yet the latter is by far the thicker skinned of the two. I commend these random guesses in search of truth to my brothers of knife and pen, and also to the learned Editors, who seem to many of us luminous with knowledge as the Æsculus with moonlight. [!] *D. T. Fish.*

Magnum Bonum Potato.—From 14 lb. of seed planted in April (cut to single eyes) we have dug, October 14 and 15, 780 lb. (75 lb. of these being a little diseased), and of course there are small ones also, but that is the actual weight. It is a large ugly Potato, but of good flavour and texture, and boils or steams well. It ought to become a poor man's winter Potato when the price admits of it. This is now far too high, considering what a cropper it is. I think to do this sort of Potato justice the ground should be rather poor and the more open the better; the rows should be 3 feet apart and the sets about 18 inches asunder, with only one eye to a set. The outside rows have yielded one-third more than the inner rows—which were only 2 feet apart and 1 foot from set to set. Rich soil evidently distorts this Potato. *W. W.*

Goold's Manure.—At p. 505 I see two correspondents have given their experience with Clay's artificial manure. I have not tried the above manure, but I have used Mr. Goold's, of the Hop Exchange, London, with good results. In the first place I applied it to a brake of Strawberries three years planted, and the crop was marvellous for size and quantity, and equally good in quality. The first gathering gave us a great quantity of fruit, weighing from 1 oz. to 1½ oz. each, which brought inquiries from Mr. Millbank for the name of this large new Strawberry, which happened to be a good old sort, called Ne plus Ultra. I would recommend growers of Strawberries to try this manure. I used it for Figs in tubs and pots with marked results. The crop is now abundant, and if I could apply more heat than I can do the crop would last some weeks longer; the second crop up to now has equalled the first in size. I have also used the compound for Camellias and Azaleas. It gives the foliage and flowers of the former a brilliancy grand to look at. This manure I have not seen advertised, but I first heard of it from Mr. Clark, of Studley Royal, Ripon, who I hear has used it rather freely: perhaps he will give the readers of the *Gardeners' Chronicle* his experience of it at some length, as we may expect something genuine from such an old hand. *William Culverwell, Thorpe Perrow, Bedale.*

Grape-Vine Bearing a Second Crop.—A gentleman in this neighbourhood has a Black Hamburgh Vine in his greenhouse, which is not heated (the aspect being south-east). It bore well this season, and the Grapes were picked the first week in September. There is now, October 21, a second crop, the fruit being as large as small marbles. Is this a common occurrence? *Mrs. Alfred Watney, Berry Grove, Liss, Hants.* [No.]

Clay's Fertiliser.—I have used Clay's fertiliser this year in my garden both for vegetables and flowers, and have seen most satisfactory results. The Potato crop was increased by one half, and most of them were very large tubers. All vegetables were improved in proportion. My flower garden (though small) has been most lovely; the blossoms and colour on all plants have been sustained by the use of this manure, and they continued blooming most profusely throughout the summer without any watering. The Roses were unequalled by those of any previous year; the Tomatos have also excelled, many weighing 15 oz. *Amateur, in Essex.*

—— I was pleased to see by your last issue that "Clay's Fertiliser" has at last come in for a share of attention. I am one who can testify to its first-class qualities, both from using it myself and also from frequently seeing the really wonderful effects produced by its agency. It is clean and safe, and from my experience it has no hot or burning properties like guano or ordinary chemical manures, and it is vigorous and lasting, so that one dressing is equal to two or three of any other kind previously used by me. *W. Elphinstone, Shipley Hall, Derby.* [We have received letters on this subject from other correspondents, but we think they are trying to prove too much. What is specially wanted is a record of the effects of the manure in question on certain special plants. It cannot be equally efficacious in all cases, as some of our correspondents would have us believe. EDS.]

Notes from the Potato Show.—I beg to thank Mr. Pink for his admirable statistics of the Potato show, taken evidently at leisure and for a distinct purpose. My figures were taken solely with the view of determining how a few Potatos of recent introduction stood in the collections, and were not intended to be exact, but simply to show their position relatively as to older kinds. The figures given by Mr. Pink entirely bear out what I sought to show, viz., that recently-introduced kinds occupied the foremost places, and a comparison of his sorts will prove this. Twenty kinds enumerated by Mr. Pink have been introduced into commerce here within six years, and these gave a total of 709 dishes; twenty-four older kinds gave only 452 dishes: thus giving the newer kinds just double the advantage. My mistake with reference to Snowflake arose from the fact that I did not count the American collections or enter into the single dish sections; still I regard Snowflake as a new kind, and class it as such in the above figures. As to the quality of International, having grown it here from its babyhood, when one year old, I am content to leave that to the opinion of growers generally. Mr. E. Bennett seems to be more angry with me for having left him in anonymous obscurity rather than for having referred to him as "a captious critic," but let that pass. His estimate of old kinds of Potatos tallies with that held by some ancient rosarian who boasts that twenty years since he grew all the then known so-called varieties, and that now there are none better than Lamarque, Jules Margottin, Géant des Batailles—an estimate that simply excites the modern rosarian to laughter. When Mr. Bennett states that he grew all his numerous kinds so long since, he establishes conclusively that his practical knowledge of Potatos related to that period only, but can have no reference to the Potatos of the present day. *A. D.*

Orchis hircina.—I had the curiosity to measure the other day the dry flower-stem of an unusually fine specimen of Orchis hircina which flowered in my garden this summer. I found it to be 4 feet 3 inches. I was afraid after this extraordinary effort the plant would die, but it is already showing up stronger than ever. *H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring, Oct. 22.*

Grafting Golden and Silver Variegated Pelargoniums.—Have any of your correspondents tried grafting the weaker kinds of golden and silver leaved varieties on common zonal stocks for bedding purposes? The difference is astonishing. Some plants of Sophia Dumaresque that we grafted and bedded-out have grown beautifully strong and well coloured. All the varieties are easily saddle-grafted (which appears to be the best way, as wet should be kept

away from the union). Get stocks struck and potted off (strong-growing sorts are best), and graft in March and April. There is very little more trouble in doing this than in raising the plants from cuttings, which (in the weaker kinds) are a long time making plants. Those bedded on their own roots made a poor growth as compared to the grafted ones. *W. W.*

Is Scotland a Part of England for Exhibition Purposes?—I shall not argue this question any further, being better employed; but I am bound to take notice of the opening sentences of Mr. Dean's second letter. He says my contention, that England does not include Scotland, "is an attempt to evade the logical consequences of my protest, and drag the matter down to the low level of a personal altercation between Mr. Hibberd and myself. I don't mean to indulge him in a game of play in which he would be certain to come off the victor." I cannot but regard the use of such language as a second and gross impropriety. In days not long since gone, the utterance of such an insult would have been dangerous. I shall for the future take care not to afford Mr. Dean any opportunity of letting himself "down to the low level" he has with such facility contrived to reach in this discussion. *Shirley Hibberd.* [We can insert no more on this subject. Eds.]

A New Colchicum is described in the *Gardeners' Chronicle*, October 12, p. 471, under the name C. crociflorum. The name is unfortunate. The true Colchicum crociflorum is figured in the *Botanical Magazine*, tab. 2673. It was raised in the Chelsea Botanic Gardens between fifty and sixty years ago. The York plant as described cannot be this, but more probably it is Colchicum atropurpureum of Continental catalogues, and a plant which Mr. Baker, when dealing with the genus Colchicum, ranged as a variety of C. autumnale. Previous to this period it was ordinarily catalogued as Colchicum crociflorum, and under this name I cultivated it for many years. It is a very charming plant, but to speak of it in the same sentence with C. speciosum is to range David with Goliath. I also think this plant was known to Parkinson, under the name of Colchicum atropurpureum striatum. *P. Barr.*

The Woodstock Kidney Potato: Chiswick Trials.—I observe at a late meeting of the Royal Horticultural Society a First-class Certificate was awarded for a Potato named Woodstock Kidney to that eminent cultivator, Mr. McKinlay; but it does not state (as far as I can see) whether the Potato had been submitted to the crucial test of a season's trial in the Society's gardens. Now I have always understood (at any rate of late years) that the Fruit Committee invariably declined to recognise any new variety of Potato that had not passed through Mr. Barron's hands in the garden. I have no other reason in asking this question than to clear my mind upon an uncertain point. Perhaps Mr. Barron will kindly state if the hard-and-fast laws to which I have alluded are still maintained? *D. McDonald, Totteridge.*

The Cauliflower of the Season and the Carrot Crop.—In answer to Mr. Clews I may say that my seeds were of the best, and that our Cauliflowers have mostly been excellent. The sorts grown were the London Market, Erfurt, and Veitch's Autumn Giant. The latter is now perfect, though about a month later than usual. The Walcheren is also covering in well now. I have also grown Mr. Dean's Snowball, one of the neatest, sweetest little Cauliflowers in cultivation. Assuredly, it is not the seed list this season that is at fault. Permit me to thank the many correspondents who have given their experience, as in the multitude of facts a remedy is likely to be found. May I inquire what about the Carrot crop? We have been sowing and sowing all the season to keep up a fair supply. The seeds vegetated freely, and then suddenly went off several crops in succession, so that we had difficulty in getting a plant—an unprecedented experience in the quarter of a century that I have cropped the gardens here. Have any other growers had a similar difficulty with the Carrot crops? *D. T. Fish.*

King Charles II.'s Oak at Boscobel.—It may interest your correspondent to hear, that many years ago the writer went to Boscobel while on a visit in the neighbourhood. She was then assured by the person who conducted strangers over the Manor House, that this tree was a seedling of the Oak that sheltered Charles II. Her sketch made at that time corresponds very nearly with the engraving in this week's *Gardeners' Chronicle*, minus the railings, which did not at that time enclose the tree (allowance being made for the growth of nearly thirty years). About ten days ago the writer visited "Byron's Oak" at Newstead Abbey, very similar in form to the one at Boscobel, and apparently not so very much smaller (though planted by the poet) than the Oak which is now assumed to be the contemporary vegetable of the "Merry Monarch!" *H. M. E., October 19.*

Germander Speedwell: Veronica Chamædrys.—Is it not unusual to find this pretty little blue flower in blossom at this season of the year? I picked several on the 15th of this month, on a hedge bank close to the house. *Mrs. Alfred Watney.*

Primula Sport (Solitary-flowered).—I send you flowers of a curious form of Primula sinensis. As you will observe, there is only one flower on a spike. The flower-spikes are produced in the greatest profusion from the centre of the plant; it is also starting to grow at the sides, as in other Primulas. *G. J., Gr., Micklefield, Leeds.* [It is a very curious sport. The main scape has not become elongated so as to lift up the umbel of flowers, as usual, but possibly this may yet occur as the plant gains age. We should certainly try to seed and perpetuate it. Eds.]

Insuring Glass.—In answer to the inquiry of "F. C. F." through the *Gardeners' Chronicle* of the 19th inst., I beg to state that glass in vineries may be insured against hail by the Royal Farmers' and General Insurance Company, 3, Norfolk Street, Strand. *J. Fraser, The Nurseries, Lea Bridge Road, Leyton, Essex.*

Early Flowering of Ranunculus Ficaria.—I discovered lately a Ranunculus Ficaria in full bloom on the bank of a river. Is it not very early? [Yes.] *W. Roberts, 9, Chapel Street, Penzance.*

The Black Italian Poplar for London.—Being in town on the 15th, I was considering what I thought would be the best tree for London, and going leisurely down Norland Road, Notting Hill, I noticed how beautiful and fresh was the Black Italian Poplar. Now I consider this is the plant, in preference to Planes or other deciduous trees. It is true there is a very fine Plane in Cheapside, and some round Christ's Hospital, and it is a tree I very much admire. There is a splendid specimen of the Black Italian Poplar in the York Road, Lambeth. I am certain this tree has been overlooked, as it is much preferable to Planes or the straight Lombardy Poplar, and next to it is the Lime. *J. M., Bagshot, Oct. 17.* [The New Canadian Poplar—an improved and enlarged edition of the Black Italian—is preferable, *vide* Chelsea Embankment. Ed.]

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, Oct. 23, 1878

Month and Day	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from the Mean	Temperature of the Air: Highest	Temperature of the Air: Lowest	Temperature of the Air: Range	Temperature of the Air: Mean for the Day	Temperature of the Air: Departure from Mean	Hygrometrical Deductions from Glaisher's Tables 8th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 8th Edition: Degree of Humidity Sat. = 100	Wind: Average Direction	Rainfall
Oct.	In.	In.	°	°	°	°	°	°			In.
17	29.883	+ 0.105	67.0	47.4	19.6	57.5	+ 1.7	50.5	66	E, ENE	0.00
18	29.62	− 0.068	54.2	47.0	7.2	50.6	+ 0.6	44.0	81	ESE	0.00
19	29.60	− 0.118	58.5	43.8	14.0	52.8	+ 3.3	43.8	68	ESE, SE	0.00
20	29.663	0.118	58.0	50.5	7.5	53.5	+ 4.2	50.2	84	E	0.00
21	29.415	− 0.543	60.0	50.0	10.0	57.2	+ 8.2	53.1	87	E, SSE	0.00
22	29.11	− 0.793	56.0	31.2	24.8	43.8	+ 0.1	42.6	83	SSW, SW	0.20
23	29.41	0.30	55.2	33.8	21.4	46.1	− 2.0	40.3	81	WSW, WNW	0.02
Mean	29.417	− 0.231	57.8	46.8	11.0	54.5	+ 2.3	47.2	80	E, SW	Sum 0.22

Oct. 17.—Overcast till noon, fine till 2 P.M., overcast till 7 P.M.; fine till 8.30 P.M.; fog till 10.30 P.M. Clear at midnight. Thick fog in morning.
— 18. A dull cloudy day, fine at times. Overcast at night.
— 19.—Rather dull, but not unpleasant. Cloudy
— 20.—Fine, but dull and very cloudy. Fog at night.
— 21.—Fine, partly cloudy till evening, then overcast. Few drops of rain at midnight. Warm.
— 22.—Fine, partially cloudy. Showers of rain in early morning, and slight shower at 2 P.M. Lightning seen in evening. Cloudless at night. Cold.
— 23.—Fine and bright till 3 P.M., overcast, showers till 5.30 P.M.; fine till night, then overcast. Cold. Windy.

London: *Barometer.*—During the week ending Saturday, October 19, in the vicinity of London the reading of the barometer at the level of the sea increased from 30.34 inches at the beginning of the week to 30.36 inches by the morning of the 13th, decreased to 29.98 inches by the afternoon of the 15th, increased to 30.08 inches by noon on the 16th, decreased to 29.77 inches by the evening of the 18th, and was 29.82 inches at the end of the week. The mean reading for the week at sea level was 30.02 inches, being 0.30 inch above that of the preceding week, and 0.12 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 68½° on the 13th to 54½° on the 18th; the mean value for the week was 59½°. The lowest temperatures of the air observed by night varied from 40° on the 13th to 50° on the 19th; the mean value for the week was 45⅛°. The mean daily range of temperature in the week was 13⅜°, the greatest range in the day was 28½° on the 13th, and the least, 6⅜°, on the 16th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—13th, 52°.1, + 1°.4; 14th, 51°.2, + 0°.8; 15th, 51°, + 0°.8; 16th, 52°.8, + 2°.8; 17th, 51°.5, + 1°.7; 18th, 50°.6, + 0°.9; 19th, 52°.8, + 3°.3. The mean temperature of the air for the week was 51°.7, being 1°.7 above the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 134° on the 13th, 136° on the 14th, and 106½° on the 19th; on the 16th the reading did not rise above 60°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 29⅜° on the 13th and 32° on the 14th. The mean of the seven lowest readings was 39°.

Wind.—The direction of the wind was E., and its strength gentle.

The weather during the week was generally fine, dry, and warm; the sky was cloudy and at times overcast.

No *rain* fell.

Fog prevailed on the 13th and 17th.

England: *Temperature.* — During the week ending Saturday, October 19, the highest temperatures of the air were 68½° at Blackheath, 67° at Truro, 65° at Sunderland, and 64° at Eccles; the highest temperature of the air at Wolverhampton was 58°, and at Hull was 59°; the mean value from all stations was 62°. The lowest temperatures of the air observed by night were 36° at Cambridge, 37° at both Bristol and Nottingham, and 38° at both Truro and Eccles; the lowest temperature of the air at Sunderland was 46°, and at Plymouth was 45°; the mean value from all stations was 40¼°. The range of temperature in the week was the greatest at Blackheath, 28½°, and the least at Liverpool, 15½°; the mean range of temperature from all stations was 21⅜°.

The mean of the seven high day temperatures was the highest at Truro, 63°, Sunderland 60½°, and Cambridge, 60°; and the lowest at Wolverhampton and Liverpool, both 56½°, and Bradford, 56⅓°; the general mean from all places was 58½°. The mean of the seven low night temperatures was the lowest at Cambridge, 42½°, Bristol and Eccles, both 43⅜°, and Wolverhampton and Sheffield, both 44½°, and the highest at Sunderland, 49½°, and Norwich, 49; the mean from all stations was 45⅜°. The mean daily range of temperature in the week was the greatest at Cambridge, 17½°, and the least at Norwich, 9½°; the mean daily range from all stations was 12⅞°.

The mean temperature of the air for the week from all stations was 51½°, being 4⅜° higher than the value for the corresponding week in 1877. The highest were 54½° at Truro, and 53½° at Sunderland; and the lowest were 49½° at Wolverhampton, and 49⅜° at Bristol.

Rain.—The amounts of rain measured during the week were generally small. At Brighton 0.58 inch fell, and at Truro, Bristol, and Liverpool two-tenths of an inch was measured; at Blackheath, Cambridge, Norwich, Bradford, and Leeds no rain fell. The average fall over the country was one-tenth of an inch.

The weather during the week was somewhat fine, though dull at times. *Fog* was prevalent, and the sky was generally cloudy.

Scotland: *Temperature.*—During the week ending Saturday, October 19, the highest temperatures of the air varied from 62° at Dundee to 56⅜° at Aberdeen; the mean from all stations was 59⅜°. The lowest temperatures of the air varied from 39° at Perth to 48⅜° at Glasgow; the mean from all stations was 44¾°; the mean range of temperature in the week from all stations was 15°.

The mean temperature of the air for the week from all stations was 52⅜°, being 8⅛° higher than the value for the corresponding week in 1877. The highest was 54½°, at Glasgow, and the lowest 51¼° at both Edinburgh and Perth.

Rain.—At Greenock the fall of rain was 0.33 inch, at Dundee 0.05 inch, and at Aberdeen 0.04 inch; at Glasgow, Edinburgh, Leith, and Perth no rain was measured. The average fall over the country was 0.06 inch.

Dublin. — The highest temperature of the air was 64½°, the lowest 39¾°, the range 24¾°, the mean 53¼°, and the fall of rain 0.02 inch.

James Glaisher.

Obituary.

IT is with very sincere regret that we learn from the Irish *Farmers' Gazette* of the death of one of Belfast's worthiest citizens, and one of the truest lovers and patrons of horticulture to be found in the province of which that stirring and progressive town is the capital. On the 4th inst. HENRY HAWKINS, after a very brief illness, passed away, at his residence, Kin Edar, near Belfast, and on the 7th inst. his remains were interred in the Borough Cemetery amid the widespread regrets of his fellow-citizens.

—— A valued correspondent, who was well acquainted with Mr. Hawkins, writes:—"Mr. Hawkins was perhaps the keenest and most enthusiastic patron of horticulture in Ireland. He was born in 1811, in the Carse of Gowrie, Perthshire, and began life as a draper's apprentice in Dundee, where he distinguished himself as an apt and diligent youth. After pushing his way, like many more of his countrymen, in subordinate and leading positions in various eminent drapery houses in London, Dublin, Bath, Peterhead, Newry, &c., he finally settled down in Belfast, and started the extensive drapery business now known by the name of Hawkins, Robertson, Ferguson & Co., in Castle Place, Belfast. From youth he was an ardent lover of Nature, and was never without some object or other to which he devoted his spare time—rabbits, dogs, pigeons, poultry, &c., occupying his attention at various times, till about the year 1867 he began to devote himself to horticulture, which he followed up with a zeal and liberality rarely met with. He began with a couple of small houses, in which he grew a few Ferns and foliage plants, and gradually extended his houses and collection of plants, till in the year 1874 they were the finest in Ireland, and took most of the principal prizes for plants at the International Show held at Belfast that autumn, after which the plants were disposed of, and the houses devoted to the cultivation of fruit, Grapes in particular. Into this branch of horticulture he entered with his usual energy and enthusiasm, and, aided by his able gardener, Mr. McGee, he has been a highly successful competitor in the fruit classes at the Dublin and Belfast shows, and occasionally at those on this side of the Irish Sea. In him gardening has lost a generous patron, and gardeners a true friend."

Enquiries.

He that questioneth much shall learn much.—BACON.

ODOUR OF CURRANT LEAVES.—Some years ago there came out a white-fruited variety of the black Currant. Was the leaf of the white sort scented like that of the black Currant? or was it without scent like the red? *P. F.* [The answer is beyond our ken. EDS.]

PACKING CUT FLOWERS.—Having to forward a considerable quantity of choice cut flowers during the winter and spring months to my employer's London residence, I should feel much obliged for any information from those who have had practical experience in packing flowers for transit by rail. *Enquirer.*

Answers to Correspondents.

CAMELLIA BUDS FALLING OFF: *W. S.* We can only account for it by the plants having experienced a sudden change of some kind.

CAPE GOOSEBERRY: *J. B.* Physalis pubescens.

CHRYSANTHEMUM: *R. T. S.* We can see nothing the matter with the buds in their present stage, but you might keep a look-out for the "Chrysanthemum Field Bug," which injures the flowers sometimes at this season.

FERNS: *Fernery.* Your No. 8, sent last week, is one of the dwarf scented varieties of Nephrodium nobile. Of exotics for exhibition to be grown in a cool greenhouse, we should recommend Adiantum formosum, Asplenium Fabianum, Davallia pyxidata or bullata, Dicksonia antarctica, Gleichenia Speluncæ, Dennstædtia davallioides Youngii, or Lastrea aristata variegata. Of course many other half-dozens might be selected. Of British Ferns well grown plants of Polypodium vulgare cornubiense, Polystichum angulare Pateyi, and Holeanæ, Athyrium Filix-fœmina Victoriæ, Lastrea Filix-mas cristata, and Scolopendrium vulgare crispum, would be distinct and difficult to beat. Smith's *Ferns British and Foreign.*

FERN SHADE: *Pteris.* The spores of P. serrulata are of no value. The ventilation you describe ought to prevent the dewing of the glass. If it does not do so, it is probably owing to the soil being kept too wet. Should you find no advantage from adopting a drier *regime* you should try the elevating of the glass another half inch.

FLOWER BEDS: *Subscriber.* Your beds, Nos. 3 and 4, probably suffer as much from being robbed by the roots of the trees as by the shade of the wall. If that be so, you should set them well back at some distance from the beds, whatever you plant; and this done and the soil duly enriched, it is probable that Roses (of the Noisette and Tea groups perhaps) would succeed then also sufficiently well to correspond with Nos. 1 and 2. If you are satisfied Roses would not do, the best thing we can suggest is Clematises, which can be trained over the surface by means of a trellis at any height you desire from the ground. These, however, must have well-enriched soil, and be fed annually.

FUCHSIA RICCARTONI: *J. M.* Fuchsia Riccartoni is not an introduced species, but was raised from seed taken from a pod of F. globosa by the late Mr. John Young, gardener at Riccarton, near Edinburgh, between the years 1830 and 1835.

FUNGUS: *T. S., Newcastle-on-Tyne.* The name of the Fungus on Holly leaves is Stegia ilicis.

GRAPE WHITE DAMASCUS: *Jas. Freeman.* The Grape sent under this name is unknown to us. It is very large and handsome, very long, ovate shape, skin clear white. Flesh juicy, but not possessed of much flavour.

HOLLIES: *Ilex.* Yours is a very poor set of varieties, several of which are not recognisable in their present condition. 3 is Ilex opaca; 4, Ilex dipyrena. These are distinct species. Of the others we only make out 9, which is the Black-wooded Silver; and 2, the Dun-striped. Several of the others are not worth growing, the variegation being so indistinct. 10 is Arbutus Unedo, the common Strawberry tree.

INSECTS: *B. F.* The insects found on your Potatos, to which they seemed to be causing a deal of damage, were one of the species of centipedes (Polydesmus complanatus), a very destructive insect to growing plants and tubers. Watering with lime-water is said to be a preventive.—*G. M.* The beetle found on your Potatos is not the Colorado Beetle, which has *longitudinal* black and orange stripes, but the Burying Beetle (Necrophorus vespillo), which is *transversely* striped with those colours.—*E. M.* The beetle which has attacked your Dendrobiums is one of the countless family of the weevils, and belongs to the sub-family Calandrides. It appears to be attached to Orchids, as we have received it previously. Only careful examination of the plants, especially after dark, will be of service. *J. O. W.*

KNOTS ON VINES: *M. D.* Knots on Vines are not very uncommon. They have occurred at Chiswick. The cause, at present, is rather obscure.

LOST.—At the last meeting of the Royal Horticultural Society, on the 15th inst., a Bank of England note for £10 was lost in the meeting-room or its vicinity. It may have been dropped into the packing material, and so overlooked. The Assistant-Secretary will give all needful information.

MELANISM OF FERNS: *P. B. A.* They are probably kept too damp. Do not syringe them so often or so freely, and never when the sun is likely to catch them while wet. At the same time, try some plants more thoroughly shaded. The fact of the new fronds immediately turning brown is no doubt owing to excess of moisture.

NAMES OF FRUITS: *W. C.* Omitted from last week's. *Grape:* De Candolle.—*D. Thomson.* We believe your Grape to be Madresfield Court.—*W. G. Caldwell & Sons.* Those numbered 1 and 3 were smashed and rotten; 2, is unknown.—*J. Bryan.* 1, 4, Blenheim Orange; 2, Cellini.—*W. D. & Sons. Apples:* 1, Cambusnethan Pippin; 2, Egg or Paradise; 3, Trumpington; 4, and *Pears*, not recognised.—*G. H. Apples:* Quite decayed. *Pears:* 1, Marie Louise; 2, an elongated form of Doyenné Blanc.—*J. J. M.* 1, 6, Beurré Diel; 2, Beurré Superfin; 3, Bergamotte d'Esperen; 4, rotten; 5, Maréchal de la Cour.—*J. Edwards. Apples:* 14, Cellini; 17, Rymer; 15, Beauty of Kent; 16, 18, unknown. *Pears:* 2, 9, 10, 12, White Doyenné; 5, Beurré Bachelier; 6, Beurré Diel; 1, 3, quite decayed; 4, 11, 13, the same, unknown; 7, 8, likewise.

NAMES OF PLANTS: *B. B.* No. 1 appears to be the Hedera chrysocarpa of nurseries (Mr. Hibberd's H. pedata); but we cannot be certain of that, or No. 2, from single leaves.—*J. F.* Lapageria rosea.—*T. Postles.* Nerine undulata.—*E. S.* Clerodendron fœtidum.—*J. F. D.* Menziesia polifolia, white variety. Pray don't pack your specimens in cotton wool another time.—*J. M., Penzance.* One of the Martyniæ, probably M. proboscidea.—*W. B.* 1, Lastrea laserpitiifolia, known in gardens as L. Standishii; 2, a deeply-toothed form of Athyrium Filix-fœmina.—*W. A. G.* 1, Nephrolepis pectinata; 2, Polystichum angulare proliferum; 3, Scolopendrium vulgare laceratum; 4, insufficient; 5, Lastrea Filix-mas; 6, L. F.-m. cristata.—*H. A.* Salvia dulcis, and S. farinacea.—*St. Leonards.* Iris fœtidissima, the Gladwyn.

OAK GALLS: *S. H.* The "scales" on the Oak leaf are Oak-spangles, the work of an insect, Diplolepis lenticularis. Very common this season.

PEAR LEAVES INJURED: *W. C. T.* The Pear leaves are not injured by an insect, but by a fungus, the Pear-leaf Kœstella (R. cancellata).

PLANTING A VINERY: *A. L.* We think you would derive greater satisfaction from planting black and white varieties, mixed, in both houses, than in having one for black and one for white sorts. In the earliest house we should plant Black Hamburgh, Foster's Seedling, white; and Buckland Sweetwater, white. If there is room for six canes, four should be of the Black Hamburgh, and two of Foster's: if for seven, add the Buckland. In the second, and latest house, we should plant one or two canes of Lady Downe's Seedling and Black Alicante, and the remainder of Muscat of Alexandria.

PORTABLE STOVE: *Amateur.* The paraffin stoves answer very well, and do no injury to plants, provided they are kept clean and properly trimmed.

POT CULTURE OF GRAPES: *L. E. G.* The proposed internal arrangements will answer very well. The amount of piping ought to be sufficient to keep up a temperature of from 60° to 65° during severe frost without over-heating the water. We would advise putting slates over the pipes on which to stand the pots. The pit or bed where the pipes for bottom-heat are placed we would fill up, as has been suggested, with brick rubbish, 6 inches above the pipes. On this we would place a hotbed of sweet stable manure, mixed with leaves enough to cause a gentle bottom-heat. The bed of manure would cause a moist atmosphere, and the pots should be plunged into it if the temperature is not more than 80° or 85°; if it is more than this, stand the pots on the surface of the bed, as the roots would be injured by a higher temperature. With that treatment the buds will swell and break much stronger than they would without the bottom-heat and manurial atmosphere. When the growths are long enough to show the bunches distinctly, the pots may then be placed on the slates over the pipes. The bed of manure might be turned over when the pots are removed, and if the heat has declined a little fresh material added to it will cause it to heat again. We are rather afraid of the plan proposed to turn the Vines out of the pots, just before starting them. The compost is also too rich. Still, you cannot expect much fruit from Vines in 7, 8, 9, and 10-inch pots. A good fruiting Vine should be established in a 12 or 13-inch pot at least two months before starting to force. If the Vines alluded to are to be cut down and grown into fruiting canes next year then the method of procedure should be this:—Cut the canes back to within 6 or 9 inches of the ground now. About the middle of January place the pots in a gentle bottom-heat, with a temperature of about 50° at night. When the Vines have started remove all the buds but two. Repot into pots a little larger, and most of the old compost should be shaken from the roots before repotting. When the Vines have well filled the pots with roots they should be potted into the fruiting pots; the sizes should be between 11 and 13 inches, according to the strength of the canes. The best compost is turfy loam, to every barrowload of which add a peck of crushed bones and an 8-inch pot full of lumps of charcoal. The Vine likes a firm soil to grow in. The best varieties are, for pot culture, Black Hamburgh and Foster's White Seedling; we would grow four of the black to two of the white.

PRIMULA: *Alpha.* We must decline to pass any opinion upon the merits of a Primula of which you send us only a single withered "pip."

ROSE SPORTS: *John Hopper.* Sports are "fixed" by propagating from the sported or altered branch or branches, and may be accomplished either by cuttings or by grafting or budding, according to the nature of the plants. In the case of Roses it would be done by budding.

ROSES FROM SEED: *Inquisitor.* See our number for July 6 last, p. 11.

STOVE TEMPERATURE: *A. B. P.* A fair average temperature for a mixed collection, such as you describe, would be, say, 70° by day and 60° by night, but there is no hard-and-fast line to be drawn in these matters. In bright weather the day temperature, with air, may be allowed to run up a few degrees higher, and in dull cold weather a few degrees lower will be better to applying the artificial heat too strong, and by the same rule the night temperature might drop a little for a short period in very cold weather without injury. Chamærops does not need stove-heat.

TROPÆOLUM: *T. W. Townson.* The flowers of your variety have all the appearance of being those of a good variety, but without seeing it growing beside others we cannot say if it is the best. You should send plants to be grown for trial at Chiswick, and there it would be seen by everybody interested in such subjects. It seems to have a good deal of the Lobbianum blood, and is none the worse for that.

TUBEROUS BEGONIAS: *W. S.* Keep them in the pots, and not too dry. The pots may be placed anywhere beyond the reach of frost, or an extreme of heat.

WELLINGTONIA: *S. H.* We can only suppose that the defect arises from want of drainage.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

CATALOGUES RECEIVED:—H. Cannell (Swanley, Kent), Autumn Catalogue.—Messrs. Webb & Sons (Wordsley, Stourbridge), Catalogue of Bulbous Flower Roots, &c.—Thomas Warner (The Abbey, Leicester), Catalogue of Fruit Trees, Roses, Ornamental Trees and Shrubs, &c.—Messrs. Simon-Louis, Bros. (Metz, Lorraine), Catalogue of Fruit Trees, Roses, Trees and Shrubs, Plants, &c.—T. Carden (3, Union Street, Leicester), Catalogue of Hyacinths and other Dutch Bulbs.

COMMUNICATIONS RECEIVED.—J. I. L.—M. D. (many thanks). J. V. & S.—W. W. (many thanks; we shall have it engraved).—W. T.—J. H. H.—Z.—Enquirer.—K.—P. T.—F.—D. M.—E. W.—J. E.—C. R.—T. S. J.—T. G.—H. M.—J. S.

BIRTH.—October 19, at Keswick Mount, Ephraim Road, Streatham, the wife of N. SHERWOOD, of 6, Leadenhall Street, of a son.

Markets.

COVENT GARDEN, October 24.

The only alteration we have to note is in Cobs, the higher prices of last week tempting growers to flood the market, and causing prices to be considerably reduced. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Peaches, per dozen	6 0-	15 0
Cobs and Filberts, lb.	0 9-	1 0	Pears, per doz.	2 0-	6 0
Grapes, per lb.	1 0-	6 0	Pine-apples, per lb.	4 0-	8 0
Lemons, per 100	10 0-	18 0	Plums, ½-sieve	2 6-	5 0
Melons, each	1 0-	3 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0-	4 0	Garlic, per lb.	0 6-	..
— Jerusalem, bush.	4 0-	..	Herbs, per bunch	0 2-	0 4
Asparagus, Fr. sprue, per bundle	1 6-	..	Horse Radish, p bun.	4 0-	..
Beans, French, lb.	0 4-	0 6	Lettuces, Cos, Eng., per score	1 6-	2 6
— runners, p. bush.	4 0-	6 0	Mint, green bunch	0 4-	0 6
Beet, per doz.	1 0-	2 0	Onions, young, bun.	0 4-	0 6
Brus. sprouts, bush.	7 0-	..	Parsley, per bunch	0 4-	..
Cabbages, per doz.	1 0-	2 0	Radishes, per bunch	0 1-	0 3
Carrots, per bunch	0 4-	0 6	— Spanish, doz.	1 0-	..
Cauliflowers, per doz.	2 0-	3 0	— New Jersey, doz.	2 0-	..
Celery, per bundle	1 6-	2 0	Shallots, per lb	0 6-	..
Chilis, per 100	2 0-	..	Seakale, per punnet	2 6-	..
Cucumbers, each	0 4-	1 6	Spinach, per bushel	2 0-	..
Custard Mar., doz.	3 0-	..	Sweet Potatos, per lb.	0 6-	..
Endive, Batav. dozen	1 6-	..	Tomatos, per dozen	2 6-	3 0
			Turnips, p. 12 bunch.	3 0-	..

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6-	1 0	Mignonette, 12 bun.	2 0-	6 0
Asters, 12 bunches	4 0-	12 0	Myosotis, 12 bun.	1 0-	6 0
Bouvardias, per bun.	1 0-	4 0	Narcissus, paper-white, 12 sprays	3 0-	6 0
Calceolaria, 12 bun.	6 0-	12 0	Pelargoniums, 12 spr.	0 9-	1 6
Carnations, 12 bunch.	4 0-	12 0	— zonal, 12 sprays	0 3-	1 0
Cornflower, 12 bun.	2 0-	6 0	Phlox, 12 bunches	6 0-	12 0
Chrysanth., per doz.	1 6-	6 0	Primula, double, per bunch	1 0-	2 0
— per 12 bunches	3 0-	9 0	Pyrethrum, 12 bun.	3 0-	6 0
Dahlias, 12 bunch	3 0-	9 0	Roses (outdoor), doz.	1 6-	12 0
Eucharis, per doz.	4 0-	12 0	— (outdoor), 12 bun.	3 0-	12 0
Gardenias, 12 blms.	4 0-	9 0	Spiræa, 12 sprays	1 6-	4 0
Gladioli, various, 12 spikes	1 0-	4 0	Stephanotis, 12 sp.	3 0-	12 0
Heliotropes, 12 sp.	0 6-	1 0	Sweet Peas, 12 bun.	2 0-	6 0
Hyacinths, Roman, 12 spikes	2 0-	6 0	Sweet Sultan, 12 bun.	6 0-	9 0
Jasmine, 12 bunches	6 0-	12 0	Tropæolum, 12 bun.	1 0-	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Asters, per doz.	4 0-	12 0	Ficus elastica, each	5 0-	15 0
Begonias, per doz.	4 0-	12 0	Foliage Plants, various, each	2 0-	10 6
Bouvardias, do	9 0-	24 0	Fuchsias, per dozen	3 0-	12 0
Calceolarias, p. doz.	6 0-	12 0	Hyacin., Rom., doz.	12 0-	30 0
Chrysanth., per doz.	6 0-	18 0	Hyacinths, per doz.	3 0-	9 0
Coleus, per dozen	3 0-	9 0	Myrtles, per doz.	4 0-	12 0
Cyperus, do.	6 0-	12 0	Palms in variety, each	2 6-	21 0
Draccena terminalis	30 0-	60 0	Pelargoniums, scarlets, zonal, doz.	2 6-	9 0
— viridis, per doz.	18 0-	24 0	Roses, Fairy, per doz.	9 0-	12 0
Euonymus, various, per dozen	4 0-	18 0	Vallota, per doz.	18 0-	24 0
Ferns, in variety, per dozen	4 0-	18 0			

SEEDS.

LONDON: *Oct.* 23.—The dulness which has for some time back characterised the seed market remains unrelieved: for the moment there is, of course, no consumptive demand, and the absence of all speculative inquiry is not just now to be wondered at. According to cable advices there is no further fall in the value of American Clover seed, the market there being apparently supported by an export demand from the Continent. Samples of home-grown red are coming forward more freely, but the transactions therein are unimportant. Alsike, notwithstanding its extreme cheapness, fails to excite attention. Extra fine whites are scarce, but medium qualities are in plentiful supply and are obtainable at moderate prices. In Trefoil seed there is nothing doing: grasses are also at present quite neglected. For Mustard and Rape seed the demand is likewise most meagre. Occasionally small orders come to hand for winter Tares. Rye is in scant request. Canary seed still favour the buyers; arrived parcels of new Dutch Hemp seed command high rates. Boiling Peas move off at Monday's quotations; the new Dutch Haricots, being good in quality and low in price, meet with increased favour. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

From the Borough and Spitalfields reports we learn that there was a moderate supply, but disease was very prevalent. Trade for the better descriptions was steady at the following prices:—Kent Regents, 90s. to 100s.; Essex ditto, 70s. to 110s.; rocks, 60s. to 70s.; Champion, 65s. to 75s.; flukes, 110s. to 130s.; Victorias, 95s. to 120s.; Scotch Regents, 80s. to 100s. per ton.—The importation of Potatos into London continues upon a moderate scale. In the course of last week 20,475 bags were landed from Hamburg, 1256 bags were also received from Antwerp, and 1403 bags 110 tons from various other Continental ports.

COALS.

House coals were not much inquired for at market on Monday, and prices gave way 6*d.* per ton. Business was steady on Wednesday, at the following quotations:—Walls End—Harton, 16s. 9*d.*; Hetton, 18s. 6*d.*; Hetton Lyons, 16s. 9*d.*; Lambton, 18s.; Wear, 16s. 9*d.*; Chilton Tees, 17s. 3*d.*; Kelloe, 17s.; East Hartlepool, 18s.; Thornley, 17s. 6*d.*

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

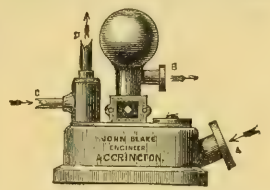
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on November 9.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September 6, 1875.*

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 120 feet rise.)

From Captain TOWNSHEND, *Wineham, February 10, 1877.*

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July 16, 1878.*

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug. 22, 1878.*

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq, *Emmett Hall, near Colne, December 21, 1868.*

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.

WEBB'S



CHOICE COLLECTIONS
OF
HYACINTHS, CROCUS, TULIPS,
LILIES, NARCISSUS, &c,
For Open Ground and Indoor Cultivation.

WEBB'S
£3 3s. COLLECTION of CHOICE BULBS
For Open Ground contains 1583 Flowers Bulbs.

WEBB'S
£2 2s. COLLECTION of CHOICE BULBS
For Open Ground contains 1040 Flower Bulbs.

WEBB'S
£1 1s. COLLECTION of CHOICE BULBS
For Open Ground contains 530 Flower Bulbs.

WEBB'S
10s. 6d. COLLECTION of CHOICE BULBS
For Open Ground contains 301 Flower Bulbs.

WEBB'S
£3 3s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 478 Flower Bulbs.

WEBB'S
£2 2s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 295 Flower Bulbs.

WEBB'S
£1 1s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 151 Flower Bulbs.

WEBB'S
10s. 6d. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 77 Flower Bulbs.

Orders of 20s. value Carriage Free. Five per Cent. Discount for Cash.

FOR FULL PARTICULARS SEE

WEBB'S
AUTUMN CATALOGUE
OF
DUTCH FLOWER ROOTS,
&c,

Which is profusely Illustrated, and contains original and complete Cultural Instructions.

Price 6d., post-free; Gratis to Customers.

PARIS EXHIBITION, 1878.
We have the honour to announce that the
MEDALS of PARIS
For Excellence of Agricultural and Horticultural Seeds have been awarded to us.



THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 25. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

SPECIAL OFFERS TO THE TRADE.

MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF-TRAINED PEARS.
STANDARD-TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.
THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone: also at Ashford.

Special Trade Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the following Plants, Trees, &c., in fine condition, grown especially for the Trade, have much pleasure in offering them at the following low prices:—

AURICULAS, finest mixed alpine, in 60-pots, 16s. per 100
,, extra strong, in 54-pots, 25s. per 100
CARNATIONS, in 25 choice named varieties, strong, in 60-pots, 20s. per 100
CLOVE, Purity, and The Bride, fine white, strong, in 60-pots, 20s. per 100
DAISY, aucubæfolia, golden netted foliage, 5s. per 100, 40s. per 1000
,, Crown, fine, 4s. per 100, 30s. per 1000
,, Rob Roy, fine, dark red, 4s. per 100, 30s. per 1000
,, The Bride, finest white, 5s. per 100, 40s. per 1000
MENTHA PULEGIUM, 2s. per 100, 15s. per 1000
MYOSOTIS DISSITIFLORA, 6s. per 100, 50s. per 1000
PANSY, Cliveden Blue, 8s. per 100, 65s. per 1000
,, Blue King, 8s. per 100, 65s. per 1000
,, Dean's White, 8s. per 100, 65s. per 1000
,, Yellow Bedder, 8s. per 100, 65s. per 1000
PINKS, in 25 named varieties, 20s. per 100
POLYANTHUS, strong, from laced varieties, 10s. per 100
PRIMROSE, double yellow, 10s. per 100, 85s. per 1000
ROCKETS, double Purple, 12s. per 100
,, White, 10s. per 100
THYMUS, citriodora aurea marginatus, 4s. per 100, 30s. per 1000
WALLFLOWER, True Harbinger, 3s. per 100, 25s. per 1000
,, Golden Tom Thumb, 1s. 6d. per 100, 10s. per 1000
ALDER, 3 to 5 feet, very fine, 25s. per 1000
ASH, common, 3 to 5 feet, very fine, 30s. per 1000
,, 2 to 2½ feet, very fine, 22s. 6d. per 1000
HORNBEAM, 2 to 3 feet, 20s. per 1000
PRIVET, 1½ to 2 feet, bushy, 12s. per 1000
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, 70s. to 75s. per 100
ASPARAGUS, 3-yr., extra fine for forcing, 25s. per 1000
APPLES, fine Standards, in variety, 60s. per 100
PEARS, fine Standards, in variety, 75s. per 100

Potatos for Planting.

JOHN AND GEORGE MCHATTIE, SEED MERCHANTS, Chester, have this season grown large quantities of the undermentioned kinds from carefully picked stocks, which they will shortly be able to offer at very moderate prices, or special quotations will be given now for immediate delivery:—

MYATT'S PROLIFIC.
MAGNUM BONUM.
OLD FLUKE.
HUNDREDFOLD FLUKE.
YORKSHIRE KIDNEY.
OXFORDSHIRE KIDNEY.
GLOUCESTERSHIRE KIDNEY.
EARLY ROSE.
LATE ROSE.
SNOWFLAKE.
FORTYFOLD.
PATERSON'S VICTORIA.
EARLY WHITE DON.
CHAMPION DON.

And nearly all the new English and American varieties of merit.
A Descriptive CATALOGUE will be published shortly.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 9s. per dozen.
POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz.; smaller plants, 6s. per doz.
BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.
ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.
PRIMULA ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 9s. and 12s. per dozen.
ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s. per dozen, £4 per 100; smaller plants, in 2½-inch pots, 50s. per 100.
MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen — offered to make room for smaller stuff.
PTERIS SCABERULA, good plants, 12s. per dozen.
ADIANTUM FARLEYENSE, 2000 fine plants, in 4-inch pots, 24s. per dozen; ditto, in 3-inch, 18s. per dozen.
PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.
CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.
GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.
CYCLAMEN PERSICUM, fine strain, 12s. per dozen.
GENISTAS, splendid stuff, 5½-inch pots, 50s. per 100; ditto, in 4-inch pots, 30s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

TO NURSERYMEN and FLORISTS.—A Gentleman having a quantity of GREENHOUSE PLANTS (some large), WANTS THEM TAKEN CARE OF for a few months.
Address, M. M., Faulkner's, 26, Villiers Street, Strand, W.C.

LILY OF THE VALLEY, extra strong imported 3-yr. old clumps, warranted full of flowering crowns, 12s. each, 10s. 6d. per dozen.
SPIRÆA JAPONICA, strong imported clumps for forcing, 4s. per dozen, 30s. per 100.
CYCLAMEN PERSICUM, strong growing 2-yr. old bulbs, in pots, showing flower, 4s. and 6s. per dozen. Price per 100 on application.
MAIDENHAIR FERNS, large and handsome plants in 32's, 2s. each, or 20s. per dozen.
SOLANUMS, handsome plants, full of berries, 6s. per dozen.
N.B.—Wanted to Purchase (or Exchange for any of the above), Large Plants of EUCHARIS AMAZONICA in pots.
GEO. POULTON, Fountain Nurseries, Angel Road, Edmonton, London.

Special Offer of Nursery Stock.

ELCOMBE AND SON, NURSERYMEN, Romsey, have much pleasure in offering the following at low prices for cash. The Stock is well rooted and healthy, and will remove with perfect safety:—

LAURELS, Portugal, 4 to 5½ feet, 18s. per dozen.
CUPRESSUS LAWSONIANA, 3 to 4 feet, 4s. per dozen; 4 to 5 feet, 6s. per dozen; 8 to 10 feet, 1s. 6d. to 3s. 6d. each.
THUJOPSIS BOREALIS, 4 to 5 feet, 24s. per dozen.
THUJA AUREA, 3½ feet, 3s. each, 30s. per dozen; 4 feet, extra fine specimens, 5s. 6d. each.
YEWS, Irish, 5 to 6 feet, 18s. per dozen.
,, English, 4 to 5 feet, 8s. per dozen, 50s. per 100; 6 to 7 feet, 2s. 6d. each.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 20s. per 100; 6 feet 30s. per 100; 7 feet, 40s. per 100.
SPRUCE FIRS, 6 to 8 feet, 30s. per 100.
BALM OF GILEAD FIR, 6 to 8 feet, 5s. per dozen.
CHESTNUTS, Horse, 8 to 10 feet, 4s. per dozen.
THUJA LOBBII, 6 to 10 feet, 1s. 6d. to 3s. 6d. each.
ELCOMBE AND SON, Nursery and Seed Establishment, Romsey.

To Vestries and Gentlemen Planting.

TO BE DISPOSED OF, Twenty fine Specimen LIME TREES, suitable for Road or Avenue Planting; also a quantity of ROCKWORK, comprising the Fernery of the late Cremorne Gardens.
Apply to J. W. WIMSETT, Ashburnham Park Nursery, King's Road, Chelsea, S.W.

HARDY FLOWERS

FOR

Exhibition, Herbaceous Border, and Spring Flower Gardens.

All choice sorts, true to name.

In 12 sorts, per doz.—s. d.		In 12 sorts, per doz.—s. d.	
Carnations and Picotees		Pentstemons	3 6
Single plants ..	6 6	Phloxes	3 6
Pairs	12 0	Pinks	4 0
Clematis	9 0	Potentillas	6 0
Delphinium	6 0	Pyrethrums	5 0
Holiyhocks, from first-class seed ..	4 0	Saxifrages	3 0
Iris, German	3 0	Sedums	3 0
Pæonies	6 0	Veronicas, large bushes, 9 to 15 in. through..	6 0
Pansies, Show	3 6	Violets, Sweet	3 6

BEDDING PANSIES.—Blue King, Clevedon Blue, Purple, and Yellow; Chieftain, Cloth of Gold, Peach Blossom, and The Tory, 2s. per dozen, 12s. per 100.

BEDDING VIOLAS.—Admiration, Amabilis, Brilliant, Golden Gem, Duke of Edinburgh, Golden Perpetual, Gem'evei, Multiflora, Mulberry, Purple Prince, Sovereign, Sir W. Scott, and Waverley, 1s. 6d. per dozen, 10s. per 100; Pilrig Park, 2s. per dozen, 15s. per 100—this is the best white.
100 fine Bedding Violas and Pansies, our selection, twelve varieties, 10s. 6d.

	Per doz. s. d.	Per 100 s. d.	
Daisies, red, white or rose ..	1 0	5	≡
Ajuga variegata..	2 6	..	
,, purpurea ..	3 0	..	
Alyssum saxatile	1 6	10	0
Antennaria tomentosa ..	1 6	8	0
Arabis alpina ..	1 6	8	0
,, fol. var. ..	1 6	8	0
Aubrietia purpurea ..	1 6	10	0
Canterbury Bells	1 0	5	0
Dactylis elegantissima ..	1 6	8	0
Sweet Williams ..	1 0	5	0
Gentiana acaulis	3 ≡	20	0
Hepatica, double red and single blue ..	4 0	25	0
,, single white and red ..	6 0	..	
,, double blue	18 0	..	
Iberis corifolia ..	1 6	10	0
,, Tenoreana ..	1 6	10	0
Mentha Gibraltaricum ..	1 0	5	0
Myosotis sylvatica and dissitiflora	1 0	5	0
Primrose, double white, double lilac, double sulphur ..	4 0	25	0

	Per doz. s. d.	Per 100 s. d.	
Primrose, double crimson, very scarce ..	15 0	..	
,, single pink	2 0	12	0
,, ,, white ..	3 6	..	
,, ,, crimson	4 0	..	
,, japonica, of sorts	4 0	..	
Phlox verna and frondosa ..	1 6	8	0
Polyanthus, fine gold-laced seedlings ..	2 6	..	
,, ordinary do.	1 0	5	0
,, Black Prince ..	2 0	..	
,, Petstead ..	5 0	..	
,, President ..	9 0	..	
,, Rex Theodore ..	9 0	..	
,, Cheshire Favourite and Exile.. each	2 0	..	
Sedum acre aurea, acre elegans, glaucum, and lydium ..	1 0	6	0
Stellarea aurea ..	1 0	6	0
Veronica repens..	2 0	..	
Sempervivum tectorum ..	1 0	6	0
,, californicum	2 0	12	0

CATALOGUES of Fruit Trees, Strawberry Plants, Evergreen and Deciduous Trees and Shrubs, Stove and Greenhouse Plants, Florists' Flowers, Bedding and Soft-wooded Plants, Rhododendrons and Plants for Forcing, Roses, &c., on application.

WM. CLIBRAN & SON,
OLDFIELD NURSERY, ALTRINCHAM.

SPECIAL OFFER.—A quantity of Oak, Elm, Chestnut, Poplar, Birch, Lime, Ash, Sycamore, &c., 12 to 20 feet, straight stems and good heads; Standard Portugal Laurels, 4 to 6 feet stems, splendid heads; Pinus austriaca, Cembra, excelsa, and Strobus, Cedrus Deodara and atlantica, Wellingtonia, &c., 5 to 9 feet, splendid specimens Put on Midland or G. W. Railway. Prices and Catalogue on application.
J. PRICE, Stanley Nursery, Stonehouse, Gloucestershire.

RHODODENDRONS.—Upwards of 200 Seedling Rhododendrons to dispose of, from good sorts, many having bloomed: fine bushy plants, from 2 to 4 feet in height. Price £10: to be cleared away by purchaser.—GARDENER, Gardeners' Cottage, Isleworth House, Isleworth, Middlesex.

SEAKALE.—Excellent large Roots for Forcing, 90s. per 1000, and 2s. packing; 500 and under, 10s. per 100, and 1s. packing. A remittance to accompany all orders, addressed,
ALFRED ATWOOD, Market Gardener, 8, Palk Road, Clapham Junction. Battersea, S.W.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
,, PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

DUTCH BULBS for BEDDING.
SPECIAL OFFER.
HYACINTHS, assorted in several distinct shades, 25s. per 100
CROCUS, splendid roots, in four colours, 14s. per 1000
TULIPS, in four fine named varieties, 8s. per 100
TULIPS, single, early, mixed, 5s. per 100
No charge for package.
JAMES TYNAN, 68, Great George Street, Liverpool.

Roses, Primulas, Vines, &c.

EDWIN HILLIER offers as below, all well-grown stuff:—ROSES, Tea, on Brier, 48-pots, 50s. and 60s. per 100; Dwarf Hybrid Perpetuals, from ground, 25s. and 30s. per 100; Queen of Bedders, 75s. per 100. 1000 PRIMULAS, Double White, 48-pots, 75s. per 100. POT VINES, very fine, 30s. and 60s. per dozen. CLEMATIS, best kinds, 8s. per dozen. MANETTI STOCKS, very good, 21s. per 1000. Cash required from unknown persons —Nurseries, Winchester.

Planting Season.

To NOBLEMEN, GENTLEMEN and the TRADE.
THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to
J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

NEW ROSES.

JOSEPH SCHWARTZ

(Successor to J. B. GUILLOT, Sen.),
43, RUE DU REPOS, LYONS, FRANCE,

Begs to inform his numerous English Customers and the Trade at large, that in November next he will have ready for Sale four most splendid Roses, viz.:—

HYBRID PERPETUALS.

JULES CHRÉTIEN, very vigorous, remarkably full, foliage of a fine brilliant green, very large, full, well-made flowers, deep bright red, shaded with purple. This beautiful Rose was exhibited in 1877 under the name of André Schwartz, and afterwards dedicated by me to M. J. Chrétien, Chief Horticulturist of the Parc de la Tête d'Or. Two first-class Silver-gilt Medals have been awarded to it. A Coloured Plate of this splendid flower will be sent post-free to every purchaser. Price £1 each.

FRANCOIS GAULAIN, very vigorous, branches straight, foliage deep green, wood smooth, almost thornless, large, full, well-made flower, claret-coloured, one of the deepest colours known up to the present time. Price £1 each.

HYBRID NOISETTE PERPETUAL ROSES.

EMILIA PLANTIER, very vigorous, with peculiar foliage purple-green in developing, changing to bright green, flower medium or large, clear copper-yellow, afterwards assuming a yellowish white shade. Colours in this series entirely new. Price £1 each.

MADAME AUGUSTE PERRIN, very vigorous, olive-green foliage, flower medium, colour very fine, of a beautiful pearly rose, reverse of petals whitish. Very fascinating plant. This magnificent variety lately carried off the First Prize (First-Class Silver Medal) awarded to Seedling Roses at the last Lyons Exhibition. Price £1 each.

Five Plants will be sent to every one who Orders Four.

NEW HYBRID PERPETUAL ROSES,
offered to the Trade in the Autumn of 1877.

ALFRED K. WILLIAMS, 2s. each, 16s. per dozen.
EDOUARD PYNAERT, 2s. each, 16s. per dozen.

NOTICE.—For Sale this Autumn, a large quantity of DWARF and STANDARD ROSES.

The General Catalogue, just published, will be sent gratis, on demand, post-paid.

JOSEPH SCHWARTZ,
43, RUE DU REPOS, LYONS, FRANCE.

English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8s. per 100; 4 to 4½ feet, 18s. per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

To the Trade

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff:—
ROSES, Standard, 75s per 100.
,, Dwarf, 30s. per 100.
APPLES, 2-yr. untrimmed, 10s. per 100.
PEARS, 2-yr. untrimmed, 50s. per 100
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. to 30s. per dozen.
,, fine Maidens, 5-7s. per 100.
,, 1-yr. cut-back, 30s per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s per 100.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
,, NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
PINUS CEMBRA, 4 to 5 feet, 60s. per 100.
THUJA AUREA, 1 foot, 40s. per 100; 1 to 1½ foot, 60s. per 100.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen
50, Market Square, Northampton.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and many eminent Gardeners.
3d. per bushel; 200 for 20s.; truck (loose, 250 bush.), 30s.
4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s., or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack; 5 sacks 22s; 12 for 40s., or 34s. per ton; sacks, 4d. each.
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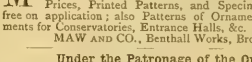
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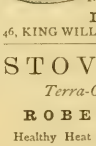
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412	7 ,, 5	10 0	11 0	12 0	13 0
349	7½ ,, 5½				
300	8 ,, 6				
260	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8	11 0	12 6	14 6	16 9
164	10½ ,, 8½				
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 3	13 3	15 3	17 6
111	13 ,, 10				
103	14 ,, 10				
90	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11	11 6	13 6	15 6	18 0
92	13 ,, 12				
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	11 9	13 9	15 9	18 3
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15	11 9	13 9	15 9	18 3
44	22 ,, 15				
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	12 3	14 3	16 6	19 0
40	20 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

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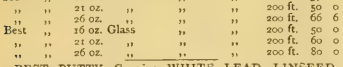
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,,	,, 21 oz.	,, ,, ,, 200 ft.	37 0
,,	,, 26 oz.	,, ,, ,, 200 ft.	50 0
2ds	,, 16 oz.	Extra ,, ,, 200 ft.	37 6
,,	,, 21 oz.	,, ,, ,, 200 ft.	50 0
,,	,, 26 oz.	,, ,, ,, 200 ft.	66 6
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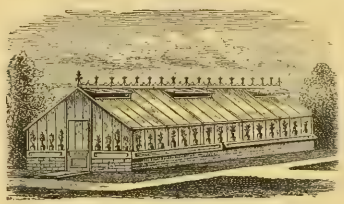
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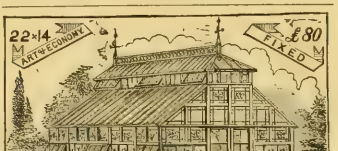


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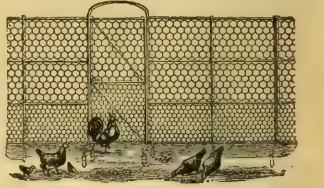
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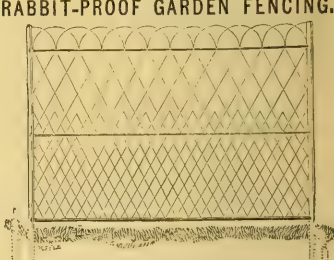


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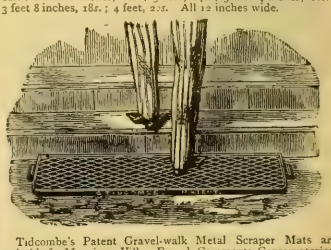
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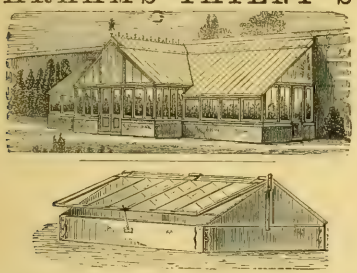
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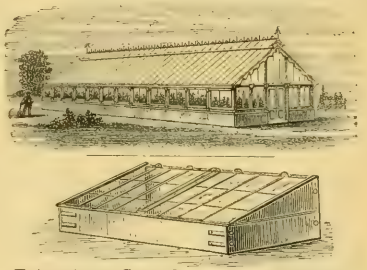
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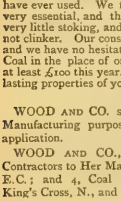
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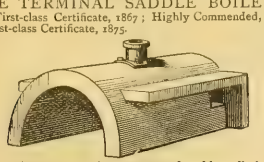


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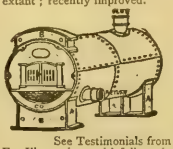
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

ROYAL BOTANIC SOCIETY, Regent's Park, N.W.
The DAYS FIXED for the EXHIBITIONS of PLANTS, FLOWERS and FRUIT, 1879, are :—
Spring Exhibitions—Wednesdays, March 26 and April 23.
Summer Exhibitions—Wednesdays, May 21 and June 18.
Evening Fête and Special Exhibition—Wednesday, July 2.

SCOTTISH ARBORICULTURAL SOCIETY.
The TWENTY-FIFTH ANNUAL GENERAL MEETING of the Scottish Arboricultural Society will, by the permission of the Regis Keeper, be held in the Rooms at the Royal Botanic Garden, Inverleith Row, Edinburgh, on TUESDAY, November 5, at 12 o'Clock A M. Professor John Hutton Balfour, Vice-President, in the Chair.
Edinburgh, Oct. 22, 1878. JOHN SADLER, Sec.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.
The above Society will hold its ANNUAL EXHIBITION of CHRYSANTHEMUMS and FINE-FOLIAGE PLANTS at the Assembly Rooms, Church Street, Stoke Newington, on TUESDAY and WEDNESDAY, November 12 and 13, when TWO SILVER CUPS and valuable MONEY PRIZES will be competed for. For Schedules and all particulars apply to JNO. HICKS, Secretary.
Grove Road, Stamford Hill, N.

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SCHEDULES may be had on application. Entries will be received up to and including Friday, November 15, by WILLIAM HOLMES, Honorary Secretary, Frampton Park Nursery, Hackney, E.

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Gravesend.
IMPORTANT SALE of valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Gravesend Nurseries, on FRIDAY, November 8, at 12 o'Clock punctually, by order of Mr. T. Eves, without reserve, in consequence of a portion of the nursery being required immediately for other purposes, a large quantity of NURSERY STOCK, comprising 1500 Box, 2000 Laurels, 500 Laurustinus, 1000 bushy Aucubas, a quantity of handsome specimen Thuja aurea, clean grown Fruit Trees, comprising 3000 Standard and Pyramid Plums, 1000 Damsons, 2000 Apples, 1000 Pears, 3000 Currants; Standard Ornamental Trees, &c.
May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Upper Tooting Park, S.W.
Clearance Sale, the Land being required immediately for Building.
IMPORTANT SALE of extra thriving young NURSERY STOCK, remarkably well grown, consisting of thousands of Ornamental Shrubs and Trees, many very fine Fruit Trees in bearing condition, fine Standard and Dwarf-trained Apples, Pears, Plums, Peaches and Nectarines; Hardy Climbers in pots, Standard and Dwarf Roses, large Camellias and Azaleas, Ferns, Palms, and other Stock.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Upper Tooting Park Nursery, S.W., on TUESDAY, November 12, at 11 for 12 o'Clock punctually, by order of Mr. C. Young.
Now on view. Catalogues obtained on the Premises, and at the Auctioneers' Offices, 98, Gracechurch Street, E.C.

Loughton, in Epping Forest.
One mile from the Railway Station.
Extensive Five Days' Sale of well-cultivated NURSERY STOCK, in fine condition for removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Wm. Paul to SELL by AUCTION, on the Premises, Sale Nurseries, Loughton, on TUESDAY, November 12, and four following days, at 11 for 12 o'Clock precisely each day, several acres of first-class well-rooted NURSERY STOCK, which is in fine condition, having been kept constantly removed. The Evergreens include 5000 Gold and Silver, Queen, Hodginsii and other Hollies, 3 to 10 feet; 500 Golden and other Yews, 3 to 6 feet; 2000 Cedrus Deodara, 2 to 8 feet; 2000 Thujas of sorts, 2 to 10 feet; 5000 Green and Variegated Box; 3000 Aucubas, 2 to 4 feet; 2000 Laurustinus; 9000 Laurel sof sorts, and large quantities of other Coniferæ; a variety of Deciduous Trees and Shrubs, including 8000 Limes, 7 to 12 feet; Planes, Maples, Poplars, &c.; Standard, Dwarf, and Climbing Roses; 65,000 Manetti Stocks, &c.
May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Prospect Hill Park, Tilehurst, near Reading.
CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, consisting of large specimen plants of double red and white Camellias, 2 to 8 feet; very fine Azaleas, 6 feet; Eucharis, Begonias in variety; Poinsettias pulcherrima and albida, Gardenias, Crotons, Dendrobiums, 400 store pots of Bedding Geraniums, Fuchsias, Primula chinensis fimbriata (red and white); 300 Adiantum cuneatum, good plants; Roses, Cyclamens, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises as noted, on THURSDAY, November 14, at 12 o'Clock precisely.
On view the day prior. Catalogues of Mr. MOLE, the Gardener, on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Highgate, N.
MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Cutbush & Son to SELL by AUCTION, on the Premises, the Nursery, Highgate, on FRIDAY and SATURDAY, November 15 and 16, at 11 for 12 o'Clock punctually each day, a large quantity of valuable NURSERY STOCK, in excellent condition for removal, including many thousands of Evergreens and Coniferæ, comprising 3000 Aucubas, 2000 Cupressus Lawsoniana, 1000 Hollies, in variety, 200 splendid specimen Thuja aurea, Cedrus Deodara, Yews, Portugal Laurels and others, Ornamental Trees, selected Fruit Trees, Standard and Dwarf Roses, hardy climbing Plants, including some hundreds of Ivies, &c.
On view one week prior to the Sale. Catalogues on the Premises, at the Branch Nurseries, Finchley and Barnet, and of the Auctioneers, Leytonstone, and 98, Gracechurch Street, London, E.C.

Preliminary Notice.
HIGHLY IMPORTANT SALE of NURSERY STOCK.
MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co. to SELL by AUCTION, on the Premises, The Nurseries, Exeter, on TUESDAY, November 19, and four following days, several Acres of NURSERY STOCK, well grown and in fine condition for removal.
Further particulars next week.

Dutch Flower Roots, for Present Planting and Spring
Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during NOVEMBER, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Important Sale ot a Valuable Collection of Established Orchids, the Property of a Gentleman going Abroad.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 7, at half-past 12 o'Clock precisely, a choice Collection of ESTABLISHED ORCHIDS, comprising about 90 Plants of choice varieties of Phalænopsis (collected specially), about 50 splendid plants and fine varieties of Odontoglossum Alexandræ, nice plants of O. vexillarium, including the dark variety; O. Hallii, O. Phalænopsis, &c.; a fine plant of Cattleya exoniensis, C. Warneri, a specimen C. crispa, 3 feet through; Dendrobium Wardianum, D. devonianum, good varieties of nobile, Lælia anceps, with ten spikes of bloom; Lælia elegans, &c.; also the only plant in the country of Masdevallia Shuttleworthi; also some good plants of M. Harryana, Veitchii, Davisii, Lindeni, &c.
On view morning of Sale, and Catalogues had.

English Grown Lilies—Freesia refracta alba, etc.
MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company, Colchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, November 8, at half-past twelve o'Clock precisely, a splendid collection of LILIUMS in all the rare and choice kinds; also the grand new FREESIA REFRACTA ALBA (First-class Certificate), the gem among bulbous plants, and many other rare and beautiful PLANTS, and a consignment of BULBS from Holland.
On view morning of Sale, and Catalogues had.

Chertsey, Surrey.
1 Mile from the Addlestone and 2 Miles from the Woking Station on the South-Western Railway.
IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey to SELL by AUCTION, in October, the STOCK upon the above Nurseries.
May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

In Liquidation.—Long Cross Nursery.
1½ Mile from the Virginia Water and Sunningdale Stations on the Staines and Wokingham Railway.

MESSRS. R. AND J. WATERER AND SON have been instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 11, and following day, at 12 o'Clock punctually without reserve, the whole of the well-grown NURSERY STOCK on the above Nursery, comprising 11,000 excellent Fruit Trees; standard, pyramid and trained Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, all of the best sorts; 18,000 Mussel Plum, Crab and Pear stocks; 1000 Gooseberries; 23,000 Larch, Spruce, and Scotch Firs, from 2 to 3 feet; Cupressus Lawsoniana, Cedrus Deodara, from 2 to 4 feet; 16,000 Hollies, from 2 to 3 feet; 500 variegated ditto, 14,000 Rhododendron ponticum, 1500 named Rhododendrons, 300 Paul's Double Scarlet Thorn, 6000 Laurels, from 12 to 15 inches; 5000 Yews, from 2 to 3 feet 6 inches; 5600 Aucubas and layers, 9500 Poplars, from 5 to 9 feet; 10,300 Chestnut, from 3 to 4 feet; 1900 Beech and Birch, from 2 to 5 feet; 7000 Manetti Stocks, 500 Climbing Roses, a fine Clematis collection, quantity of Ornamental Shrubs, and other plants. The whole of the Stock is in excellent condition for removal, and particularly worthy the attention of the Trade and others.
May be viewed any day previous to the Sale, and Catalogues had seven days prior on the Premises, and of Messrs. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

In Liquidation.—Wellington College Nursery, BAGSHOT, SURREY.

MESSRS. R. AND J. WATERER AND SON are instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 18, at 12 o'Clock precisely, the valuable stock upon the above Nursery, comprising about 3000 mixed Border SHRUBS, 1000 Spanish CHESTNUTS, from 2 to 3 feet; 4000 RHODODENDRONS to name, 1 foot 6 inches to 3 feet; 3400 R. PONTICUM, ditto; 800 AZALEA PONTICA, 3000 MANETTI STOCKS, 500 AUCUBAS, 100 Golden YEWS, 1000 Green and Variegated HOLLIES, from 1 to 2 feet; 150 Pyramid APPLES, 700 CURRANTS, 1500 Scotch FIRS, from 12 to 15 inches; and a large variety of other Plants, including CEDRUS DEODARA, PINUS INSIGNIS, THUJA LOBBII, LARICIO, SPIRÆA, LAURELS, &c.
May be viewed and Catalogues had seven days prior to the day of Sale, on the Premises and of the Auctioneers, Chertsey, Surrey.

Fairlawn, Acton Green, W.
A few paces from the "Old Pack Horse," Turnham Green.
SECOND PORTION: Metropolitan District Railway, Extension from Hammersmith to Ealing.—To Noblemen, Gentlemen, English Timber Dealers, Builders, Contractors. Pianoforte Manufacturers, Owners of Ornamental Gardens, Nurserymen and others.
Sound Timber Trees, Standard Roses, and Ornamental Shrubs, beautifully worked; Turf on 2 acres of Lawn and nearly 5 acres beyond (unequalled for ordinary lawn purposes—most of the Specimen Shrubs were supplied by Messrs. Veitch & Co. to the order of R. Attenborough, Esq.); and other attractions of the Kitchen Garden and Orchard; the sound Stock Bricks forming the nearly new brick wall 530 feet long, Stone Piers, with handsome carriage and entrance gates, lamps complete, for removal and re-erection. —CLEARANCE SALE for the formation of the new roads and extensive Building Estate, being at and adjoining the new Railway Station now in course of erection.

MR. J. A. SMITH has been favoured with instructions to SELL by AUCTION, on the extensive grounds as above, on THURSDAY, November 14, at 11 for 12 o'Clock precisely, in consequence of the number of lots, the whole of the very sound TIMBER TREES, 7000 exquisitely worked and very rare flowering and other SHRUBS and PLANTS, close to the road, and the whole easy and safe for removal, comprising 18 capital Elm Trees, 12 Limes, 96 Chestnuts, 6 Acacias, 7 Sycamores, 5 Oaks, and 8 Walnut Trees; also the fine old Cedars and Yew Trees, about 700 Shrubs and Plants (splendidly grown and many specimens), 200 FRUIT TREES of finest sorts, 500 Currant and Gooseberry Trees, 500 Strawberry Plants, &c.; also 4 tons of Mangel Wurzel, Seakale, Rhubarb, Asparagus, and very fine specimen WATTLE LILIES, including Victoria Regina and others. The whole are strong and healthy, and can be removed and replanted with the certainty of future growth, giving effect and value to an estate which time and exquisite taste alone can produce
May be viewed two days prior and morning of Sale. Catalogues may be obtained at the Lodge; at the "Old Pack Horse," Turnham Green; "Star and Garter," Kew Bridge; and at Mr. J. A. SMITH'S Auction, Land and Estate Offices, 58, King Street East, Hammersmith, W.

Warminster Nurseries, Wilts.
PRELIMINARY NOTICE of an EXTENSIVE SALE of a portion of one of the choicest NURSERY STOCKS in the kindgom, consisting of many thousands of rare Coniferæ, evergreen and deciduous Trees and Shrubs, large quantities of Fruit Trees of all kinds, hardy Bulbs, &c.

MR. WM. ABRAHAM is instructed by the Executors of the late Mr. George Wheeler to SELL the above by AUCTION, without reserve, early in November, further particulars of which will be given in future advertisements.

TO BE SOLD, as a going concern, a NURSERY, situate within 9 miles of London and near Railway stations. Comprises well-arranged Nursery, six large Greenhouses, Sheds, Stables, &c., and about 2 acres of Ground for Market Growing, well stocked.
H. A., Mrs. Knight's, Winchmore Hill, N.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.
MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained gratis at 98, Gracechurch Street, E.C.

In Liquidation.
WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d.; Planting, 2s. 6d. to 5s.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

In Liquidation.
WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

Annual A. B. C. Bulb Guide.
THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

To Gentlemen, Builders, and the Trade.
ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL FOREST FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

ORCHIDS.—A small Collection of Orchids to be disposed of, the property of a Gentleman giving up their cultivation.
List of sorts and price on application to
JAS. GILBERT AND SON, St. Margaret's Nursery, Ipswich

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.
Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.
Early orders are solicited for the above choice plants. Apply to THE MANAGER, Calcot Gardens, Reading.

SPRUCE FIRS, 6 to 8 feet, 30s. per 100.
ELCOMBE AND SON, Nurserymen, Romsey.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

LAURELS, Old and New, the latter very fine, superior foliage, superior habits, superior constitution, distinct shades of green, the largest and best grown stock in the kingdom. Send for specimen leaves and priced Catalogue.
RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

POPLARS for SCREENS, &c.—Lombardy, Canadian, and large-leaved—all sizes, from 3 to 12 feet. Many thousands. Low prices on application.
RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection of Nurserymen to his extensive stock of the above, which is well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Mistleto—Mistleto—Mistleto.

APPLE TREES with MISTLETO, 3s. 6d. and 5s. each for cash with order.
JOHN STEVENS, The Nurseries, Coventry.

The Lily Nursery, Ghent, Belgium.

J. VANDER SWAELMEN'S English CATALOGUES of Ornamental Plants, Winter and Spring Flowering Plants, Lilies, and other Bulbs and Roots, can still be had free on application.

To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Fruit Trees.

SCOTT'S ORCHARDIST, the most useful work on Fruit Trees in the English language, free for 3s. 6d.
The Merriott Nurseries contain all the best varieties of APPLES, PEARS, PLUMS, CHERRIES, CURRANTS, GOOSEBERRIES, APRICOTS, PEACHES, NECTARINES, NUTS, FILBERTS, WALNUTS, &c. Trees of all sizes and shapes. Priced LIST free on application to.
J. GEORGE HILL, (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

Planting Season.

To NOBLEMEN, GENTLEMEN and the TRADE.
THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to
J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

To the Trade.

SEAKALE.—Extra strong, for forcing. Largest Roots in the Trade.
GLOBE ARTICHOKES, TARRAGON, &c., strong roots.
Prices on application to
C. PAGE (late Henry Page), St. John's Nursery, Walham Green, Fulham, S.W.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.
SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)
Agents: Messrs. C. J. BLACKITH AND CO., Cox's Quay, Lower Thames Street, London, E.C.

To the Trade.—Seed Potatos.

CAREFULLY SELECTED and FREE FROM DISEASE.
CHARLES SHARPE AND CO. will have much pleasure in forwarding their Special Priced CATALOGUE of Seed Potatos, grown by themselves this season.
CHARLES SHARPE AND CO. having at much trouble and expense procured the choicest stocks of all the finest English and American varieties, can confidently recommend what they offer. Seed Warehouse, Sleaford.

Cabbage Plants—Cabbage Plants.

W. VIRGO, Wonersh Nursery, Guildford, can now supply in any quantity the following good, strong, healthy, autumn grown Plants:—Early Battersea, Early Enfield Market, Early Nonpariel, and Robinson's Drumhead, at 3s. per 1000; Red Pickling, 5s. per 1000.
LETTUCE—Brown Cos and Admiral, 5s. per 1000.
Reference required from unknown correspondents.

ADIANTUM CUNEATUM.—For Sale, 5 dozen, splendid stuff, in large 60's, cheap.
R. FARRANCE, Florist, Chadwell Heath, Essex.

Planting Season.

R. AND A. MORRISON'S Stock of LARCH and SCOTCH FIR TREES, Native and other FOREST TREES, being this year very large and fine, they are enabled to make low quotations for large quantities.
CATALOGUES on application.
The Nurseries, Elgin.

Winter Blooming

GESNERAS—G. FULGENS and G. SPLENDENS, splendid stuff, in 5-inch pots. Three bulbs in a pot, showing bloom, 22s. per dozen.
TAYLOR AND CO., Florists, Timperley, Cheshire.

For Early Spring Display, Plant

BACCHUS, Darkest and best Red DAISY for Bedding or Edging, 6s. per 100, 40s. per 1000, or sample dozen 12 stamps, post, package, and carriage free for cash to
W. HORLEY, Florist, Toddington, near Dunstable, Beds.

BUDDED CAMELLIAS and AZALEAS.—Ghent Azaleas, Azalea Mollis, Spiræa japonica, Lily of the Valley, Palms and Ferns for decoration, Ficus elastica, Begonias, &c. Also over one hundred large specimen Camellias, choicest varieties, splendid pyramids, 3, 4 to 5 feet high, grown in tubs, and nearly all covered with large swollen buds ready to flower, are offered at the usual moderate charges.
The new illustrated general CATALOGUE forwarded free on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates:—15s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

AT

SUTTON'S

ROOT SHOW,

November 23, 1878,

WILL BE GIVEN, IN ADDITION TO NEARLY

£300 for ROOTS,

Special Prizes for Vegetables, Value nearly .. Guineas. 15

Special Prizes for Potatos Value nearly .. 15

SCHEDULE and ENTRY FORM ON APPLICATION.
NO CHARGE FOR ENTRY.

Suttons Sons

THE QUEEN'S SEEDSMEN, **READING.**

For Sale.

RASPBERRY CANES, medium size, well rooted, viz., Fastolf and Red Antwerp, at 8s. per 100, or £3 per 1000.
POTATOS, Paterson's Prolific Ashleaf Kidney, 1 ton, first-class sample, warranted true, £10.
CHESTNUTS, Spanish, new seed for planting, 5s. per bushel. Cash on delivery for the above.
THOMAS SHARPE, Market Gardener, Knowle Hill, Chertsey.

To the Trade.

HURST AND SON have a fine stock of the following:—
DIELYTRA SPECTABILIS
HELLEBORUS NIGER
SPIRÆA JAPONICA
LILY OF THE VALLEY
} strong clumps.
LILY OF THE VALLEY, crowns.
GLADIOLUS BRENCHLEYENSIS, HYACINTHS, TULIPS, CROCUS, and all other Bulbs and Roots.
Special Prices on application.
6, Leadenhall Street, London, E.C.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.
HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown: 12s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
" double white, 12s. to 16s. per 100.
" ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.
DIELYTRA SPECTABILIS, 20s. to 25s. per 100.
LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
" " ROSEUM, 20s. to 26s. per 100.
" " RUBRUM, 20s. to 26s. per 100.
" CHINENSIS TIGRINUM, 5s. to 8s. per 100.
CHRISTMAS ROSES, (Helleborus niger), fine, 40s. to 60s. per 100.
Trade CATALOGUE free on application. Post-office Orders or good references from unknown correspondents.
BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

New Catalogue.

MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for Covers, PLANTS for Winter Bedding,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
Milford, near Godalming, Surrey.

SUTTON'S MAGNUM BONUM POTATO—Seed direct from the Raiser. True and good sample, 4g per ton, or 14s. 6d. per sack (of 168 lb.), sacks inclusive, delivered on Rail at this Station. Terms cash with order (or satisfactory reference. Cheques crossed "Wilts and Dorset," Post-office Orders payable to
H. T. BATH, Nurseryman and Seedsman, Lymington, Hants.

Roses, Primulas, Vines, &c.

EDWIN HILLIER offers as below, all well-grown stuff:—ROSES, Tea, on Brier, 48-pots, 50s. and 60s. per 100; Dwarf Hybrid Perpetuals, from ground, 25s. and 30s. per 100; Queen of Bedders, 75s. per 100. 1000 PRIMULAS, Double White, 48-pots, 75s. per 100. POT VINES, very fine, 30s. and 60s. per dozen. CLEMATIS, best kinds, 8s. per dozen. MANETTI STOCKS, very good, 21s. per 1000. Cash required from unknown persons.—Nurseries, Winchester.

Cabbage and Lettuce Plants.

H. J. HARDY, Stour Valley Seed Grounds, Bures, Suffolk, begs to offer a quantity of strong, healthy, autumn-sown plants:—
ENFIELD MARKET and CARTER'S HEARTWELL, 3s. per 1000.
RED DUTCH, 5s. per 100.
LETTUCE.—Brown Cos, Siberian, and Champion, 5s. per 1000.
Package and carriage free for 5000 upwards (or plants equivalent), to any Railway Station in England.
Reference required from unknown Correspondents.

Rhododendron ponticum.

J. J. MARRIOTT begs to intimate to Noblemen, Gentlemen, and the Trade, that he has an immense stock of the above to offer, in ages and sizes as follow, at very moderate prices:—
2, 3, and 4-yr. seedlings.
4-yr. seedlings, 2-yr. bedded.
4 to 6 inches. | 9 to 12 inches.
6 to 9 inches. | 12 to 15 inches and upwards.
Highfield Nurseries, Matlock, Derbyshire.

EWING AND COMPANY offer to the Trade and large buyers:—
APRICOTS, dwarf maiden and dwarf trained, in quantity, extra fine.
TEA and NOISETTE ROSES, in pots, very fine, of nearly all the best kinds, in quantity.
GOOSEBERRIES, of best kinds, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted.
CURRANTS, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted, of Black Naples, Red Dutch, and other best sorts.
LIMES, large-leaved red-twigged variety, with straight stems, good pyramidal heads, and (most important of all) good fibrous roots.
The Royal Norfolk Nurseries, Eaton, near Norwich.

DUTCH BULBS for BEDDING. SPECIAL OFFER.
HYACINTHS, assorted in several distinct shades, 25s. per 100
CROCUS, splendid roots, in four colours, 14s. per 1000
TULIPS, in four fine named varieties, 8s. per 100
TULIPS, single, early, mixed, 5s. per 100
No charge for package.
JAMES TYNAN, 68, Great George Street, Liverpool.

We have about Five Hundred

POT VINES, 2-yr. old, grown without bottom-heat. For strength, vigour, ripeness, and prominence of eyes we believe they cannot be surpassed. The Trade supplied. We shall be glad to send samples to any address: 5s. each.
THE MANAGER, St. George's Gardens, St. Anne's-on-the-Sea, Lancashire.

Holly Nursery, Hundleby, Spilsby, Lincolnshire.
Established 1812.

COLE BROTHERS are prepared to make special offer for cash of ASH, LARCH, SPRUCE, Silver FIR, Austrian PINE, LIMES, Horse and Spanish CHESTNUT, Green and Variegated HOLLIES, of sorts, Common YEW, LAURUSTINUS in bloom, PARK or HEDGE-ROW TREES, FRUIT TREES, and all sorts of SHRUBS, CONIFERÆ, &c. List, prices, and samples on application.

PETER DE COCK AND COLLUMBIEN, The White Flower Nurseries, Meirelbeke, near Ghent, Belgium, offer to the Trade:—
SPIRÆA JAPONICA, £5 per 1000.
CHRISTMAS ROSES, £6 per 1000.
AZALEA INDICA, in bud, and 45 per 100.
CAMELLIAS, in bud, £6 and £7 per 100.

The Oxford Roses.

GEORGE PRINCE'S descriptive CATALOGUE of Dwarf Roses on the Cultivated Seedling Brier, now ready, post-free on application.
A choice collection of HARDY PERENNIALS and TEAS in 7-inch pots, well established, at 36s. per dozen.
This is the only establishment in England where the Rose is grown exclusively on the above stock.
14, Market Street, Oxford.

To the Trade Only.

SNOWDROPS of extra quality, clumps o CHRISTMAS ROSES well set with buds, SPIRÆA JAPONICA, GLADIOLUS BRENCHLEYENSIS, BEGONIAS choice named and hybrid seedlings, HYACINTHS, TULIPS, CROCUS, fine home-grown LILIUM AURATUM, LILY OF THE VALLEY clumps, &c., of finest quality only, at low prices.
F. SANDER AND CO., Seed Growers, St. Albans.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

SPECIAL OFFER. — A quantity of Oak, Elm, Chestnut, Poplar, Birch, Lime, Ash, Sycamore, &c., 12 to 20 feet, straight stems and good heads; Standard Portugal Laurels, 4 to 6 feet stems, splendid heads; Pinus austriaca, Cembra, excelsa, and Strobus, Cedrus Deodara and atlantica, Wellingtonia, &c., 5 to 9 feet, splendid specimens. Put on Midland or G.W. Railway. Prices and Catalogue on application.
J. PRICE, Stanley Nursery, Stonehouse, Gloucestershire.

PAUL'S NURSERIES,
WALTHAM CROSS.

SPECIALITIES.

ROSES ..... 500,000 Plants on Sale
Standards, 15s. to 24s. per dozen, £6 to £9 per 100
Dwarf standards, 12s. per dozen, £3 15s. to £5 per 100
Dwarfs, 9s. to 15s. per dozen, £2 10s. to £3 15s per 100.
Climbers, 6s. to 12s. per dozen, £2 10s. to £3 15s. per 100
Roses in pots, 10s. 6d. to 18s. per dozen, £3 15s. to £6 per 100
Ditto, prepared for immediate forcing, 24s. to 42s. per dozen, £7 10s. to £15 per 100
Roses on their own roots, 9s. to 15s. per dozen, £3 3s. to £5 per 100

BULBS .... Hyacinths, 4s. per dozen, 25s. per 100, and upwards
Tulips, 9d. per dozen, 4s. 6d. per 100, and upwards
Crocus, 2s. per 100, 17s. 6d. per 1000, and upwards
Polyanthus Narcissus, 2s. per dozen, and upwards
Snowdrops, 2s. 6d. per 100, and upwards.

CAMELLIAS ..... Young plants, with bloom, 30s. per dozen, and upwards. Specimens from 21s. to £30 each.

FRUIT TREES.... Standard Apples, Pears, Cherries, and Plums, 18s. to 24s. per dozen, £7 10s. to £10 per 100
Pyramids, 18s. to 42s. per dozen, £6 to £10 per 100
Dwarfs, 9s. to 15s. per dozen, £3 3s. to £5 per 100
Espaliers, 30s. to 42s. per dozen
Dwarf-trained Peaches, Apricots, and Nectarines, 42s. to 60s. per dozen
Standard-trained ditto, 7s. 6d. to 10s. 6d. each.
Fruit trees in pots, 36s. to 84s. per dozen
Figs in pots, 24s. to 42s. per dozen
Strawberries, 3s. 6d. to 5s. per 100
A large number of handsome fruiting trees of various kinds in stock.

GRAPE VINES.... Fruiting Canes, 7s. 6d. to 10s. 6d. each; Planting Canes, 30s. to 60s. per doz.

EVERGREENS.... For planting new, or replenishing old gardens. Prices furnished on application, as these vary greatly.

PARK and ROAD-SIDE TREES Limes, Planes, Maples, Ash, Beech, Birch, Oaks, Poplars, Chestnuts, &c. Prices furnished on application.

DECIDUOUS and PICTORIAL TREES and SHRUBS All the best sorts, being a selection from a large number of varieties proved over a period of many years. Prices on application.

SEEDS ..... Kitchen Garden and Flower Seeds in Collections for large and small Gardens, 10s. 6d. and upwards.

Priced Descriptive CATALOGUES and every information furnished by letter on application to
WM. PAUL & SON,
PAUL'S NURSERIES, WALTHAM CROSS, HERTS.

Special Offer of Nursery Stock.

ELCOMBE AND SON, NURSERYMEN, Romsey, have much pleasure in offering the following at low prices for cash. The Stock is well rooted and healthy, and will remove with perfect safety :—
LAURELS, Portugal, 4 to feet, 15s. per dozen.
CUPRESSUS LAWSONIANA, 3 to 4 feet, 4s. per dozen; 4 to 5 feet, 6s. per dozen; 8 to 10 feet, 1s. 6d. to 3s. 6d. each.
THUJOPSIS BOREALIS, 4 to 5 feet, 24s. per dozen.
THUJA AUREA, 3½ feet, 3s. each, 30s. per dozen; 4 feet, extra fine specimens, 7s. 6d. each.
YEWS, Irish, 5 to 6 feet, 18s. per dozen.
" English, 4 to 5 feet, 8s. per dozen, 50s. per 100; 6 to 7 feet, 2s. 6d. each.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 20s. per 100; 6 feet 30s. per 100; 7 feet, 40s. per 100.
SPRUCE FIRS, 6 to 8 feet, 30s. per 100.
BALM OF GILEAD FIR, 6 to 8 feet, 9s. per dozen.
CHESTNUTS, Horse, 8 to 10 feet, 4s. per dozen.
THUJA LOBBII, 6 to 10 feet, 1s. 6d. to 3s. 6d. each.
ELCOMBE AND SON, Nursery and Seed Establishment, Romsey.

LILY OF THE VALLEY, extra strong imported 3-yr. old clumps, warranted full of flowering crowns, 1s. each, 10s. 6d. per dozen.
SPIRÆA JAPONICA, strong imported clumps for forcing, 4s. per dozen, 20s. per 100.
CYCLAMEN PERSICUM, strong growing 2-yr. old bulbs, in pots, showing flower, 4s. and 6s. per dozen. Price per 100 on application.
MAIDENHAIR FERNS, large and handsome plants in 32's, 2s. each, or 20s. per dozen.
SOLANUMS, handsome plants, full of berries, 6s. per dozen.
N.B.—Wanted to Purchase (or Exchange for any of the above), Large Plants of EUCHARIS AMAZONICA in pots.
GEO. POULTON, Fountain Nurseries, Angel Road, Edmonton, London.

To the Trade.

GLOXINIAS, 1-yr. bulbs, named varieties, 2s. per dozen.
POINSETTIAS, several thousands, fine plants, 4½ and 5-inch pots, 9s. and 12s. per doz.; smaller plants, 6s. per doz.
BOUVARDIAS, all the best varieties, 4½-inch pots, 10s. per dozen; ditto, in 3½-inch pots, 6s. per dozen—ready for re-potting.
ROGIERA GRATISSIMA, nice plants, 18s. and 24s. per doz.
PRIMULA ALBA PLENA, a fine stock of strong plants, 3½ and 4½-inch pots, 9s. and 10s. per dozen.
ADIANTUM CUNEATUM, fine plants, in 4-inch pots, 12s. per dozen, £4 per 100; smaller plants, in 2½-inch pots, 50s. per 100.
MAIDENHAIRS, extra fine, in 6-inch pots, suitable for table plants, 18s. per dozen — offered to make room for smaller stuff.
PTERIS SCABERULA, good plants, 12s. per dozen.
ADIANTUM FARLEYENSE, 2000 fine plants, in 4-inch pots, 24s. per dozen; ditto, in 3-inch, 18s. per dozen.
PTERIS SERRULATA, in 4 or 4½-inch pots, 5s. and 6s. per dozen.
CARNATIONS (Tree), Miss Joliffe, The Bride, La Belle, 9s. per dozen.
GREVILLEA ROBUSTA, good plants, 5-inch pots, 9s. per dozen.
CYCLAMEN PERSICUM, fine strain, 12s. per dozen.
GENISTAS, splendid stuff, 3½ inch pots, 50s. per 100; ditto, in 4-inch pots, 30s. per 100.
HEATH AND SON, Nurserymen, Cheltenham.

Potatos for Planting.

JOHN AND GEORGE McHATTIE, SEED MERCHANTS, Chester, have this season grown large quantities of the undermentioned kinds from carefully picked stocks, which they will shortly be able to offer at very moderate prices, or special quotations will be given now for immediate delivery :—
MYATT'S PROLIFIC.
MAGNUM BONUM.
OLD FLUKE.
HUNDREDFOLD FLUKE.
YORKSHIRE KIDNEY.
OXFORDSHIRE KIDNEY.
GLOUCESTERSHIRE KIDNEY.
EARLY ROSE.
LATE ROSE.
SNOWFLAKE.
FORTYFOLD.
PATERSON'S VICTORIA.
EARLY WHITE DON.
CHAMPION DON.
And nearly all the new English and American varieties of merit.
A Descriptive CATALOGUE will be published shortly.

Special Trade Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the following Plants, Trees, &c., in fine condition, grown especially for the Trade, have much pleasure in offering them at the following low prices :—
AURICULAS, finest mixed alpine, in 60-pots, 16s. per 100
" extra strong, in 54-pots, 25s. per 100
CARNATIONS, in 25 choice named varieties, strong, in 60-pots, 20s. per 100
DAISY, aucubæfolia, golden netted foliage, 5s. per 100, 40s. per 1000
" Crown, fine, 4s. per 100, 30s. per 1000
" Rob Roy, fine, dark red, 4s. per 100, 30s. per 1000
" The Bride, finest white, 5s. per 100, 40s. per 1000
MENTHA PULEGIUM, 2s. per 100, 15s. per 1000
MYOSOTIS DISSITIFLORA, 6d. per 100, 50s. per 1000
PANSY, Cliveden Blue, 8s. per 100, 65s. per 1000
" Blue King, 8s. per 100, 65s. per 1000
" Dean's White, 8s. per 100, 65s. per 1000
" Yellow Bedder, 8s. per 100, 65s. per 1000
PINKS, in 25 named varieties, 20s. per 100
POLYANTHUS, strong, from laced varieties, 10s. per 100
PRIMROSE, double yellow, 10s. per 100, 85s. per 1000
ROCKETS, double Purple, 12s. per 100
" White, 10s. per 100
THYMUS, citriodora aurea marginatus, 4s. per 100, 30s. per 1000
WALLFLOWER, True Harbinger, 3s. per 100, 25s. per 1000
" Golden Tom Thumb, 1s. 6d. per 100, 10s. per 1000
ALDER, 3 to 5 feet, very fine, 25s. per 1000
ASH, common, 3 to 5 feet, very fine, 30s. per 1000
" 2 to 2½ feet, very fine, 22s. 6d. per 1000
HORNBEAM, 2 to 3 feet, 20s. per 1000
PRIVET, 1½ to 2 feet, bushy, 12s. per 1000
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, 70s. to 75s. per 100
ASPARAGUS, 3-yr., extra fine for forcing, 25s. per 1000
APPLES, fine Standards, in variety, 60s. per 100
PEARS, fine Standards, in variety, 75s. per 100

SPECIAL OFFERS TO THE TRADE.
MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF-TRAINED PEARS.
STANDARD-TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

To the Trade.

ROSES. — Standard and Half-Standard, extra fine. Low quotation with Purchaser's selection.
MARECHAL NIEL, in pots, very fine, 75s. per 100; second size, 65s. per 100.
LIST of varieties on application.
GEORGE COOLING, Nurseryman, Bath.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stook of the above.
CATALOGUES on application.

HARDY FLOWERS
FOR
Exhibition, Herbaceous Border, and Spring Flower Gardens.

All choice sorts, true to name.

	In 12 sorts, per doz.—*s.*	*d.*		In 12 sorts, per doz.—*s.*	*d.*
Carnations and Picotees			Pentstemons	3	6
Single plants ..	6	6	Phloxes	3	6
Pairs	12	0	Pinks	4	0
Clematis	9	0	Potentillas	6	0
Delphinium	6	0	Pyrethrums	5	0
Hollyhocks, from first-class seed ..	4	0	Saxifrages	3	0
Iris, German	3	0	Sedums	3	0
Pæonies	6	0	Veronicas, large bushes, 9 to 15 in. through..	6	0
Pansies, Show ..	3	6	Violets, Sweet	3	6

BEDDING PANSIES.—Blue King, Clevedon Blue, Purple, and Yellow; Chieftain, Cloth of Gold, Peach Blossom, and The Tory, 2s. per dozen, 12s. per 100.

BEDDING VIOLAS.—Admiration, Amabilis, Brilliant, Golden Gem, Duke of Edinburgh, Golden Perpetual, Greivei, Multiflora, Mulberry, Purple Prince, Sovereign, Sir W. Scott, and Waverley, 1s. 6d. per dozen, 10s. per 100; Pilrig Park, 2s. per dozen, 15s. per 100—this is the best white.
100 fine Bedding Violas and Pansies, our selection, twelve varieties, 10s. 6d.

	Per doz.		Per 100			Per doz.		Per 100	
	s.	*d.*	*s.*	*d.*		*s.*	*d.*	*s.*	*d.*
Daisies, red, white or rose ..	1	0	5	0	Primrose, double crimson, very scarce ..	15	0	..	
Ajuga variegata..	2	6	..		" single pink	2	0	12	0
" purpurea ..	3	0	..		" " white ..	3	6	..	
Alyssum saxatile	1	6	10	0	" " crimson	4	0	..	
Antennaria tomentosa ..	1	6	8	0	" japonica, of sorts	4	0	..	
Arabis alpina ..	1	6	8	0	Phlox verna and frondosa ..	1	6	8	0
" fol. var. ..	1	6	8	0	Polyanthus, fine gold-laced seedlings ..	2	6	..	
Aubrietia purpurea ..	1	6	10	0	" ordinary do.	1	0	5	0
Canterbury Bells	1	0	5	0	" Black Prince	5	0	..	
Dactylis elegantissima ..	1	6	8	0	" Petstead ..	5	0	..	
Sweet Williams ..	1	0	5	0	" President ..	9	0	..	
Gentiana acaulis	3	0	20	0	" Rex Theodore ..	9	0	..	
Hepatica, double red and single blue ..	4	0	25	0	" Cheshire Favourite and Exile.. each	2	0	..	
" single white and red ..	6	0	..		Sedum acre aurea, acre elegans, glaucum, and lydium ..	1	0	6	0
" double blue	18	0	..		Stellarea aurea ..	1	0	6	0
Iberis corifolia ..	1	6	10	0	Veronica repens..	2	0	..	
" Tenoreana..	1	6	10	0	Sempervivum tectorum ..	1	0	6	0
Mentha Gibraltaricum ..	1	0	5	0	" californicum	2	0	12	0
Myosotis sylvatica and dissitiflora	1	0	5	0					
Primrose, double white, double lilac, double sulphur ..	4	0	25	0					

CATALOGUES of Fruit Trees, Strawberry Plants, Evergreen and Deciduous Trees and Shrubs, Stove and Greenhouse Plants, Florists' Flowers, Bedding and Soft-wooded Plants, Rhododendrons and Plants for Forcing, Roses, &c., on application.

WM. CLIBRAN & SON,
OLDFIELD NURSERY, ALTRINCHAM.

To the Trade.

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff :—
ROSES, Standard, 75s. per 100.
" Dwarf, 30s. per 100.
APPLES, 2-yr. untrimmed, 50s. per 100.
PEARS, 2-yr. untrimmed, 50s. per 100.
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. to 30s. per dozen.
" fine Maidens, 50s. per 100.
" 1-yr. cut-back, 30s. per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
" NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
PINUS CEMBRA, 4 to 5 feet, 60s. per 100.
THUJA AUREA, 1 foot, 40s. per 100; 1 to 1½ foot, 60s. per 100.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen.
52, Market Square, Northampton.

BROCKWORTH PARK PEAR.

The fruit of this remarkable Pear is very large and handsome, the flesh is juicy, melting, and of fine flavour, ripening about the end of September or beginning of October. The colour is yellow, richly dotted, slightly crimson next the sun. It has been awarded a First-class Certificate of Merit by the Royal Horticultural Society.
Fine Pyramids .. .. .. 2s. 0d. each.
Dwarf-trained (for walls) .. 3s. 6d. each.
We can supply one dozen choice Pyramid Pear Trees of the most delicious sorts, our selection, including Brockworth Park, for 18s.
J. C. WHEELER & SON,
KINGSHOLM NURSERY, GLOUCESTER.



NEW CROTONS.

B. S. WILLIAMS

Has much pleasure in offering for the first time the two undermentioned Novelties, believing them to be, after having thoroughly proved them, far in advance of anything hitherto offered of their respective types.

CROTON WILLIAMSII.

This is undoubtedly the handsomest and most richly coloured species of the Croton family. It is of free-branching habit, with bold foliage, and colours when in a very small state. It is well adapted either for the decoration of the stove, or as an exhibition plant. It might also be advantageously used as a dinner-table plant, as the rich firey colour of its leaves has a most brilliant effect when seen under an artificial light. The leaves are obovate-oblong in outline, from 12 to 15 inches long, by 3 to 4 inches broad, edges beautifully undulated. In the young state the leaves are irregularly banded with yellow, and the midrib and primary veins are of a bright magenta colour; in some instances very little green is seen, and the magenta is suffused over the entire surface of the leaf, which gives the plant a beautiful firey appearance. As the leaves become mature this magenta colour changes to a rich violet-crimson, and the green becomes a dark bronze colour. The undersides of the leaves are rich crimson, which gives the plant a most distinct and rich appearance.

A fine well-coloured specimen, about 4 feet in height, was exhibited by me this summer at the Royal Horticultural Society's Gardens, at South Kensington, and was awarded a First-class Certificate. Every leaf of this plant was well coloured down to the pot.

Strong well-coloured Plants, price 42s. each.

Fine well-coloured Specimens may also be had. Price on application.

CROTON DORMANIANUS.

A compact dwarf-growing kind, in habit resembling C. volutum, but the markings and the shape of the leaf are far superior to that species. The leaves are fiddle-shaped, of a bright shining green colour, richly mottled and spotted with orange-yellow; midrib and primary veins bright magenta. In the old leaves the green changes to a reddish bronze colour, and the red markings become an intense crimson. The habit of this plant is very dwarf, and is well adapted for decorative purposes and to collections where the space is limited.

Price 31s. 6d. to 42s. each.

VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

"KENT, THE GARDEN OF ENGLAND."

FRUIT TREES TRUE TO NAME.

THOS. BUNYARD & SONS'

NEW

DESCRIPTIVE CATALOGUE FOR 1878,

MAY NOW BE HAD ON APPLICATION.

IN these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees.

They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments.

Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.

THOS. BUNYARD & SONS,

THE OLD ESTABLISHED NURSERIES, MAIDSTONE.

(Also at ASHFORD.)

WEBB'S



CHOICE COLLECTIONS
OF
HYACINTHS, CROCUS, TULIPS, LILIES, NARCISSUS, &c.,
For Open Ground and Indoor Cultivation.

WEBB'S
£3 3s. COLLECTION of CHOICE BULBS
For Open Ground contains 1583 Flower Bulbs.

WEBB'S
£2 2s. COLLECTION of CHOICE BULBS
For Open Ground contains 1040 Flower Bulbs.

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£1 1s. COLLECTION of CHOICE BULBS
For Open Ground contains 530 Flower Bulbs.

WEBB'S
10s. 6d. COLLECTION of CHOICE BULBS
For Open Ground contains 301 Flower Bulbs.

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£3 3s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 478 Flower Bulbs.

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£2 2s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 295 Flower Bulbs.

WEBB'S
£1 1s. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 151 Flower Bulbs.

WEBB'S
10s. 6d. COLLECTION of CHOICE BULBS
For Pots, Glasses, &c., contains 77 Flower Bulbs.

Orders of 20s. value Carriage Free. Five per Cent. Discount for Cash.

FOR FULL PARTICULARS SEE

WEBB'S
AUTUMN CATALOGUE
OF
DUTCH FLOWER ROOTS,
&c.,

Which is profusely Illustrated, and contains original and complete Cultural Instructions.

Price 6d., post-free; Gratis to Customers.

PARIS EXHIBITION, 1878.
We have the honour to announce that the
MEDALS of PARIS
For Excellence of Agricultural and Horticultural Seeds have been awarded to us.

E. & W. Webb & Sons.

THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE.

NEW PLANTS
NOW BEING SENT OUT BY
WILLIAM BULL, F.L.S.

ADIANTUM BELLUM.

A remarkably neat and pretty dwarf Maidenhair Fern, recently introduced from Bermuda. It forms dense green tufts; the fronds are erect, ovate-lanceolate in outline, very slender, and divided in a bipinnate manner; the pinnæ are short and the pinnules are small, wedge-shaped, varying considerably in their individual form, except that the terminal ones are constantly wedge-shaped and somewhat larger; they are attached by black hair-like pedicels which are forked at the base of the pinnule and are not cut off abruptly as in the nearly allied A. fragile. Its tufted habit and lively light green fronds recommend it to the attention of Fern growers and the cultivators of decorative plants, who will find it useful on account of its diminutive stature.

Price 10*s.* 6*d. each.*

ARUNDINA BAMBUSÆFOLIA.

This handsome Orchidaceous plant has been imported from Assam; it gives pretty Læliа-like flowers of a light rose colour, with rich violet-purple labellum, and will be found a charming addition to any collection.

Price 1, 1½ *and* 2 *guineas each.*

NEW AZALEAS.

The two following Azaleas will be found extremely useful for winter and early spring blooming. They belong to the *amœna* section, indeed are varieties raised from that well known kind; they are both of neat and compact habit, and their flowers are produced in the greatest profusion, and being of small size are well adapted for bouquets and other purposes for which cut flowers are required.

EMBLEM.—The blossoms of this attractive variety are of a charming magenta-crimson colour, brightly spotted in the upper segments. The rich colour of its flowers makes this variety extremely desirable for decoration during the winter.

MARVEL.—Rose, slightly shaded with violet and brightly spotted with carmine in the upper segments; the anthers frequently developed into small petaloid segments, giving the flowers a semi-double appearance. This variety received a First-class Certificate from the Floral Committee of the Royal Horticultural Society.

Price 15*s. each; six plants for* 3 *guineas.*

CROTON WILLIAMSII.

Of the many large-leaved Crotons (or Codiæums) which are found in our collections of hothouse plants, this is one of the best, being of free growth, with bold foliage, handsomely marked and richly coloured. It is one of the red-tinted series, and when in its best state is very strongly flushed with violet-crimson. The leaves are obovate-oblong in outline, with a long acuminate apex, and red petioles half an inch long. The leaf has a central band and costa of yellow, from which branch out the pinnate veins of the same colour, and on either side, more or less forking and coalescing near the edge. These veins all change to a deep crimson, and, as already stated, the whole plant becomes flushed with a glowing tint of crimson, shaded with violet, which renders it extremely conspicuous, well-adapted for decoration, and a strikingly effective plant for exhibition purposes.

Price 2 *guineas each.*

DENDROBIUM GOLDIEI.

Having received an importation from Torres Straits of this new and exceedingly handsome Dendrobium, good plants of a blooming size can now be offered. The flowers are of a lovely bright purplish violet colour, and are very abundantly produced in fine spikes of from fifteen to twenty flowers. A notable feature of this Dendrobium is the great length of time the blossoms last in perfection, while their novel and rich colour renders it extremely pleasing and attractive.

Price 2, 3 *and* 5 *guineas each.*

DENDROBIUM SUPERBIENS.

An importation of this magnificent species has also been received from Torres Straits; like the preceding its flowers are produced in fine spikes, and remain a long time in perfection: they are of a bright amethyst-purple colour. The rich hue of the flowers of this Dendrobium, together with its free-blooming character and the persistent nature of the blossoms, makes it a most desirable acquisition.

Price 2, 3 *and* 5 *guineas each.*

DRACÆNA CRISTULA.

This is a very dwarf species, introduced from Liberia, and having some affinity with D. ovata. Its erect stem grows a few inches in length, when it becomes arrested and subsequently makes similar successional growths, but never attains any considerable height. The leaves are pale green, with about four darker green nerves on each side the costa, which is prominent on both surfaces and of a pale whitish hue. It differs from D. ovata in the larger petioles and shorter lamina of the leaves, which are broader and more inclined to cordate at the base, and also in the paler coloured and more prominent costa.

Price 10*s.* 6*d. each.*

MASDEVALLIA BELLA.

This is a stately grand Chimæroid, boasting the habit of M. Chimæra and M. Wallisii, and the lip of M. nycterina. It is decidedly a handsome species, having large flowers of a dark purplish brown and nicely shining outside and yellow inside. The odd sepals and the outer halves of the other sepals are densely blotched with dark purplish brown, the colour of the long tails. The interior sides of the equal sepals and the base of the odd sepal are nearly ochre-yellow in colour, which gives an unusual contrast.

Price 2, 3 *and* 4 *guineas each.*

SELAGINELLA BELLA.

An elegant plant from Ceylon, of erect habit, the reddish tinted terete stems rising to about a foot in height, with successive branches, which are set on at short distances apart along the stem, and are stalked, ovately-pyramidate, horizontal, and closely ramified in a bipinnate manner, the ultimate branches terminated by long tetragonal rigid spikes. The larger lateral leaves are close-set, oblong, subfalcate, with a prominent mid-rib extending to the apex, the posterior side largest and rounded at the base, entire, the smaller ones obliquely ovate acuminate.

Price 10*s. 6d. each.*

THRINAX BARBADENSIS.

This is a very elegant neat growing Fan Palm. The petiole is dorsally compressed, with acute lateral edges. They terminate in a digitately multipartite blade, the numerous segments of which are lanceolate-ensiform, acuminate, of a stoutish texture, three-nerved and of a lively green colour. The leaves emerge from the axils of permanent eroso-fibrose sheathing scales which clothe the stem. It is, as its name implies, a native of the Island of Barbados.

Price 1 *guinea each.*

THE FOLLOWING SIX COLEUS
are of entirely new characters, very pretty and recommendable—

EXQUISITE	GARNET
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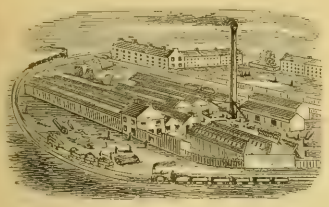
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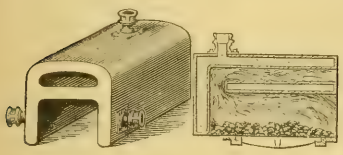
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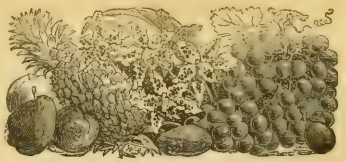
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Sutton's King of the Cauliflowers, Sutton's Improved Reading Onion, Sutton's Student Parsnip, Sutton's Sulham Prize Celery, and Sutton's Improved Dark Red Beet.

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SATURDAY, NOVEMBER 2, 1878.

GLASNEVIN.

THE name of Glasnevin must be as familiar to the readers of these pages as is that of David Moore, who for forty years has spared no pains to raise the Glasnevin gardens to the high state of efficiency which they at present manifest. Having lately had the opportunity of taking a ramble through these beautiful gardens in company with their able director, we think that a brief account of them may present some features of interest.

Loudon tells us, in his *Encyclopædia of Gardening* (1834), that "botany and flower-gardening have been much neglected in Ireland," and that the botanic gardens of Ireland were at that date "very imperfectly kept up," while "ornamental culture of every kind is in its infancy in that country." Things have certainly improved since then, and notably in the case of the Glasnevin gardens; but to an English eye it must be confessed that there is a want of that popular attachment to and fondness for flowers which is so strikingly manifested in England, even in the heart of our great cities, where such plants as can stand the smoke and foul air are seen struggling for existence on many a window-sill. Window-gardening, at any rate, is still "in its infancy" in Dublin; and it is very rarely, even in the quieter parts of the city, that it finds any votaries. The young trees in Sackville Street, again, present a spectacle which would not be tolerated anywhere in England. A very small minority have been left alone and are doing well, but most of them have had their tops broken off, some have only a broomstick-like portion remaining, and others have entirely disappeared; and this in the principal street of the principal city of Ireland!

We learn from the *Handbook* to the Gardens, the last edition of which was issued in 1864, and which is unfortunately out of print, that the idea of forming a botanical garden occurred to the members of the Royal Dublin Society about 1790; a Parliamentary grant was made for this purpose in the year mentioned, and in 1795 the Society purchased the ground at Glasnevin, when the work was rapidly proceeded with. About 1800 a prospectus of the garden was issued to the public, from which, it appears that, besides "the Linnean Garden, for the scientific botanist," there were also "the Cattle Garden, the Hay Garden, the Esculent Garden, the Dyers' Garden, and Irish Garden," &c. Lectures "on botany in general, and also separate lectures on the Cattle and Hay Gardens for the instruction of the common farmers, their servants and labouring men, all of whom are admitted to the lectures gratis," and also "like lectures for the Dyers' use, and for the purpose of extending practical knowledge, particularly in husbandry," were given by the Professor—an office first filled by Dr. Walter Wade, who retained it until about 1826. Additional hothouses were erected in 1815, and the Octagon-house, 40 feet high, was built in 1819 for the purpose of accommodating a fine specimen of the Norfolk Island Pine, which had outgrown the house in which it was placed, and was unfortunately lost in moving. In 1830 the greater portion of the garden was devoted to horticulture, the Cattle and Hay Gardens were suppressed, the Arboretum was extended, and a more complete arrange-

ment of the plants in natural orders was introduced. But even after this date the Glasnevin Garden did not meet with the approval of Loudon, who says of it in 1834 that it was "very imperfectly kept up, and inferior to the much smaller garden belonging to Trinity College," of which we shall speak further on. Mr. John Underwood, who had been superintendent of the gardens since their formation, was superannuated in 1834, and his place was filled by Mr. Niven, who was succeeded by 1838 by Dr. Moore. It would be impossible to enumerate the various ways in which the garden has been improved under his management. All the old houses excepting the Octagon have been removed, and the present handsome ranges substituted at great cost.

The vote for this Botanical Garden has been taken and accounted for by the South Kensington Department ever since 1854, but the Royal Dublin Society acted as trustees for the administration of the sums voted for it, and had a certain amount of control over it.

It was only at the commencement of the present financial year (April 1, 1878) that the Botanical Garden was fully transferred to the South Kensington Department of Science and Art, when the whole staff connected with it were re-appointed by the Lords of the Committee of Council on Education.

It is quite unnecessary to say that the state of the gardens appears in every way satisfactory. Probably nowhere out of Ireland should we see such exquisitely green turf—worthy of the Emerald Isle—and the arrangement and planting of the beds is admirable. Among the most striking outdoor features must be specially mentioned the Bog, where our most interesting British marsh plants are quite at home in company with Sarracenias and other foreigners, Sarracenia purpurea having occupied its present position for ten years, and S. flava for a shorter period. Sundews, Grass of Parnassus, Bog Asphodel, various Butterworts, and the like, are here completely at home ; and the plants are allowed to grow as they please, with the happiest results. Limnocharis Humboldtii fills a little pond near the Victoria-house, and Oxalis Deppei is very effective. Among the most striking of the outdoor plants may be mentioned Amycia zygomeris, a straggling leguminous shrub with pinnate leaves, remarkable for the large stipules at their base, which give the plant a very distinct appearance ; Romneya Coulteri, which has now been out-of-doors for four years, its only protection being a loose covering during frost ; Polygonum Brunonis, Phygelius capensis, Lilium giganteum, which was in fruit at the time of our visit ; and Lobelia (Tupa) Feuillei. This last is one of the most striking plants of its order ; the large, strongly-ribbed dark green leaves contrast admirably with the rich crimson flowers, which are, it is true, less brilliant than those of the scarlet-flowered species (which are apparently very popular in Ireland), but have a distinctive character which should render the plant popular among growers of herbaceous species. We saw also a fine young plant of the Abyssinian Tree Lobeliad, Rhynchopetalum montanum, which seemed likely to do credit to Dr. Moore's management. This plant is characterised by Richard as certainly one of the most singular productions of Abyssinia, and one concerning which the inhabitants have various traditions and opinions. A tree of 15 feet high is sufficiently remarkable in the order Lobeliaceæ, which comprises for the most part annual or perennial plants, which are rarely somewhat shrubby at the base. It is known by the name of Djibarroa, and houses are built of its wood : it usually lasts only four or five years, dying as soon as it has flowered and ripened its seed. In some parts of the mountainous district of Amburn it is the only tree. It is employed medicinally by the Abyssinians, and, like many others of the order, has poisonous properties ; it is indeed traditionally supposed to cause death to those who sleep under its shade ; two of the long spikes placed at the door of a house are said to preserve the inhabitants from all danger, especially from the attacks of the devil. The collection of plants arranged in their natural orders is much more attractive by reason of its arrangement than the similar and more extensive one at Kew ; and the series of medicinal plants is in good order.

Passing into the houses, the arrangement of which throughout was very creditable to all concerned, we noted in the Fern Octagon (which is mainly devoted to Australian and New Zealand plants) magnificent specimens of Cyathea medullaris, Dicksonia squarrosa, and Alsophila Cooperi, and a very fine plant of Banksia marcescens. The Tree and other Ferns both here and in other houses call for special remark. Besides those already named there are magnificent examples of Alsophila glabra, Gleichenia hecistophylla and flabelliata, Lomaria cycadifolia, and the curious Alsophila capensis, with stipules which Fée describes as a distinct Fern under the name of Hymenophyllum parasiticum. Dr. Moore's Cycads are probably unequalled ; we noted fruiting examples of Encephalartos villosus, Ceratozamia Kusteriana, Stangeria paradoxa and S. schizodon ; other noteworthy members of the order are Cycas celebica and Lepidozamia Peroffskiana. Palms also are quite at home ; we saw a magnificent fruiting example of Chamærops humilis, var. arborea, 20 feet high, and a noteworthy Cyphokentia macrocarpa, 14 feet in height. Nepenthes and Darlingtonia are known to be among Dr. Moore's specialities ; but nothing in the whole garden struck us more than a small house, one side of which is literally matted from top to bottom with one or two British Hymenophyllums, interspersed with luxuriant examples of Trichomanes radicans—a sight almost worth a journey from London to Dublin to see ! Many more things struck us as noteworthy, but we are unfortunately prevented from giving a fuller account of them.

The horticultural visitor to Dublin should not fail to visit the Botanic Garden at Balls' Bridge, belonging to Trinity College, and maintained at the expense of the College authorities for the benefit of the students, and for supplying the Professor with specimens. This garden is under the able management of Dr. Moore's son, Mr. F. W. Moore, who is following in his father's steps, and under whose auspices it has greatly prospered. Mr. Moore is turning his attention greatly to herbaceous plants, and many very interesting things are to be met with in the garden. During term-time there are lectures here every Saturday from half-past eleven till two ; students have at all times full admission, and strangers are admitted on presenting their card. The number of plants which have stood out here during the last two winters, with sometimes as much as 10° Fahr. of frost, is remarkable. Among them may be named Sparmannia africana, Yucca quadricolor, Habrothamnus elegans, Nerium Oleander, Ficus repens, Albizzia lophantha, Eucalyptus globulus, Aloe americana, Dracæna terminalis, Benthamia fragifera, Smilax latifolia, Clianthus puniceus, Cytisus fragrans, Azalea indica, and Pomegranate. *B. M.*

CIMICIFUGA RACEMOSA.

WE give an illustration of this very old-fashioned but still very little known plant, in order to show how very effective it is in the fruiting stage (fig. 96). The plant is a hardy perennial, some 3 to 4 feet high, with elegant tripinnately-divided foliage, and tall feathery panicles of flowers. These latter are succeeded by little follicles or capsules arranged in two rows along the upper side of the branches of the panicle. The plant is a native of North America, and belongs to the Ranunculus family, being closely allied to Actæa, but that is a smaller plant with berry-like not capsular fruit. As its name implies, it is or is supposed to be antagonistic to bugs. Our specimen was procured from the Royal Gardens, Kew, where during the autumn the plant has been effective to a degree to which our reduced illustration of a side spray only does not do full justice.

New Garden Plants.

CATTLEYA MARSTERSONIÆ, *Seden, n. hybr.**

This is a new hybrid. The growths are about 8 inches long, two-leaved, and, according to Mr. Harry Veitch, somewhat resemble those of Cattleya superba. The flower is just intermediate between those of Cattleya Loddigesii and C. labiata. The sepals of the former are amethyst coloured, the petals of the latter, of the same colour, rather undulate. The wide lip is of a light amethyst colour at the base, the lateral lobes whitish yellow, with a very delicate amethyst border ; the middle lobe of a very fine and rather intense purple ; column white. This flower exceeds by far the best flowers of C. Loddigesii, and equals the smaller kinds of C. labiata. It is a hybrid between another seedling in the way of C. Loddigesii and of C. labiata, raised by Mr. Seden, who dedicated it to Mrs. Seden, *née* Marsterson, who feels highly pleased at the success of the just-named enthusiastic Orchid grower. I have to thank Messrs. Veitch & Sons for it. *H. G. Rchb. f.*

ANGRÆCUM SCOTTIANUM, *n. sp.*†

A new curiosity ! Take a single flower of Aeranthus funalis, or of a dwarf Angræcum eburneum on a thin peduncle 0.035 m. long, put it on a slender stem 0.09 m. high, having eight subulate channelled curved leaves up to 0.09 m. long, and you have constructed the nice novelty forming a new section of the old genus. The flower is white, excepting the ochraceous long spur. It came from the Comoro Islands, near Madagascar, and found its European habitat in the stoves of Mr. R. Scott, Cleveland, Walthamstow, Essex, to whom it is dedicated with great pleasure. *H. G. Rchb. f.*

CŒLOGYNE (PLEIONE) WALLICHIANA, *Lindl.*

I have at hand a wonderful beauty—a raceme of three fully developed very highly coloured flowers. The same bulb has another raceme of three flowers, as I am informed. I obtained this remarkable inflorescence from Captain Hinck, Brechinbrough, Thirsk. *H. G. Rchb. f.*

AFFGHANISTAN.

CABUL and its ruler are again occupying the attention of British statesmen, but it is to be hoped that the "difficulty" may be overcome without another great sacrifice of life. Whatever the result of the present state of affairs, a brief sketch of what is known of the vegetation and cultivation of the country lying immediately beyond the north-western boundary of our Indian Empire may not be without interest. Not much is known either of the country, of its people, or of its vegetation, though the general character of the latter is understood. The circumstances under which most travellers have visited Affghanistan have been extremely unfavourable to the collection of trustworthy information on many points, but this does not apply to the subjects on which we shall treat here.

As delineated in modern maps, Affghanistan extends from about 61° to 72° east longitude, and 29° to 38° north latitude, and nearly the whole area is considerably elevated and very mountainous. This includes a considerable tract of country north of the Hindu Kush and Kohi-Baba, as limited by the Russian and English Commissioners a few years ago. The eastern part, south of the Hindu Kush, is drained by tributaries of the Indus, whilst the centre and western part is chiefly drained by the Hilmend, which is lost in the desert and in lakes without any affluents. What may be termed the new territory in the north is drained by the Oxus, &c. According to a recent Russian estimate, the population is about 4,000,000. The literature relating to Affghanistan, as may be expected, is not rich, and it is very imperfect even as far as it goes.

The richest source of general information is the *Journal of the Asiatic Society of Bengal*, which contains contributions from various members of the

* ×*Cattleya Marstersoniæ*, Seden.—Pseudobulbo fusiformi compresso bifolio ; sepalis ligulatis acutis ; tepalis rhombeis antice undulatis ; labello trilobo antice bilobo, circa circum undulato ; columna trigona.—Sepala et tepala amethystina. Labellum basi amethystinum ; lobi laterales antice flavido-albi ; lobus medius antice intense purpureus. *H. G. Rchb. f.*

† *Angræcum Scottianum*, n. sp.—(Nov. sect. Scottiana.)—Foliis teretiusculis superne canaliculatis bicarinulatis subulatis (ad 0.09 m. longis, diam. 0.003 m.) ; pedunculo unifloro gracili (semper ?) ; sepalis tepalisque subæqualibus ligulatis acutis (0.092 m. longis, 0.003 m. latis) ; labello transverso rotundulo cum apiculo (0.025 m. lato, 0.04 m. longo), calcari a basi ampliori filiformi acuminato flexo (0.09 m. longo) ; columna minuta crassa, rostello producto subquadrato medio fisso.—Comoro insulæ.—Col. R. Scott. *H. G. Rchb. f.*

expeditionary forces sent to Affghanistan. With regard to our knowledge of the botany of the country we are indebted almost entirely to the labours of one man, the accomplished William Griffith. The botanist Bunge accompanied a Russian expedition to Western Affghanistan, to Herat; but it was at the wrong season of the year for botanising, and the results have not been published. Griffith accompanied the army of the Indus in 1839—41. This army marched to Cabul by way of Shikarpoor, Quettah, Candahar, and Ghuznee, returning to British territory by Jellalabad, the Khyber Pass, and Peshawur—from Cabul an excursion to the north-west as far as Baimean on the Kohi-Baba, and another from Jellalabad to Chugur Serai on the Hindu Kush. A narrative of this journey was published in a volume entitled *Griffith's Private Journals*, after the death of the author; and a rough numbered list of the plants in the *Itinerary Notes*. From the indication given above of the route taken by the army it will be understood that only the eastern end of Affghanistan was traversed; therefore what follows relates to that part rather than the whole country. Nevertheless, from what is known of Persia adjoining Western Affghanistan, the general character of the vegetation appears to be the same throughout.



Fig. 96.—Cimicifuga racemosa, fruiting stage: half nat. size. (see p. 556.)

Climate.

Disregarding the base of the passes on the borders of the country the climate of Affghanistan is very mild for the latitude, owing of course to its elevation. Thus Quettah is 5537 feet above the sea; Ghuznee, 7726 feet; Cabul, 6393 feet; and Jellalabad, 1964 feet. Lieutenant Irwin states that the summer of Cabul is very much hotter and steadier than that of England, whereas the winter is probably colder, as snow lies on the ground for three months together. The heat in the sun in the summer is almost insupportable, though the shade temperature is comparatively low. Griffith remarks in one of his letters, dated from Candahar, that the climate is good and would be delightful in a good house; but in tents the thermometer varied from 60° to 98°, and even 105°, in the month of May. Rice and Maize ripen at Cabul. Nearly all the rainfall, or precipitation—for much of the moisture descends as snow—is in winter and early spring; consequently the summers are exceedingly dry, water very scarce in many districts, and cultivation only possible under irrigation. The eastern part being a succession of elevated valleys and ridges, rather than a plateau or table-land, it follows that the climate of places not far distant from each other differs considerably.

General Character of the Vegetation.

The physiognomy of the characteristic plants of dry countries—that is, of countries in which the rainfall is very scanty, or in which it is limited to a single short season of the year—betrays the nature of the climate, whether we consider the Cactuses and Agaves of Mexico, the Aloes, Mesembryanthemums, numerous bulbous plants, &c., of South Africa, the small hard-leaved shrubs of Australia, or the spiny and prickly plants so prevalent in western and central Asia. In all cases there is either a very small leaf-surface, or the leaves are of a hard almost woody consistence.

Affghanistan abounds in spiny plants; herbs are to a great extent replaced by dwarf prickly shrubs having a relatively small amount of leaf-surface; and bulbous plants are also numerous. Fragrant flowers prevail, and resiniferous and oleiferous plants are numerous. Stocks, who travelled in Beloochistan and the southern borders of Affghanistan, says the upper region, especially, is remarkable for the fragrance of its plants, as Artemisia, Perowskia, Salvia, Teucrium, and other Labiatæ; from which cause the flesh of the sheep and goats acquires a fine and almost aromatic flavour. There is no nakedness of the soil, for hill and plain are alike covered with depressed shrubs, although their scorched aspect, after the sun acquires power in June, is anything but agreeable to the eye. The prevailing tint of the indigenous vegetation and of the landscape of the uncultivated plains is olive-green, though the well cultivated valleys, as Quettah, are charmingly green in the spring time. The aspect of the vegetation of the lower region is far different, the plants being few and scattered over the bare brown and stony soil. Even in spring no annuals appear to diversify the scenery, and the under-shrubs are remarkably similar in external appearance. Woody, stunted, thorny, not above 1 foot high, with round cushion-like outlines, bleached stems, and a few leaves—they look like skeletons of plants, the grey ghosts of a vegetation which has perished of thirst. The glaucous aspect of all, and the universality of spines, are noteworthy features. Stocks (*Kew Journal of Botany*, vol. ii., p. 306) continues in the following words:—

"Petioles, leaves, midribs, stipules, branches, bracts, and calyx are (some in one case and some in another) stiff and prickly. The Euphorbia neriifolia, Caragua polyacantha, Convolvulus spinosus, Fagonia arabica, Acanthodium spicatum, Otostegia Aucheri, Pycnotheca spinosa, Lycium europæum, Prosopis spicigera, Acacia Farnesiana, Acacia rupestris, species of Asparagus, and many Tragacanthine or thorny Astragali, present every variety of sharp and repulsive spines: while Capparis aphylla, Periploca aphylla, and a bushy Salsola, with their stiff rod-like leafless stems, fill up the measure of as desolate and offensive a vegetation as can be imagined. Even in the water-courses the stiff-leaved Fan-Palm and the rigid Tamarisk (a species with foliage rough to the touch and not feathery as in the common kinds) are conformable to the general appearance. This is the camel's region, for on these plants, almost unapproachable from their hedgehog-like armature, the camel feeds with a relish, which shows that these spines, prickles and thorns act only as a gentle filip to his digestion."

Another noteworthy feature in the flora is the vegetation of the extensive salt-plains, where Chenopodiaceous and other sodium-loving plants abound. Statice, Acantholimon, Chenopodium, Salsola, Haloxylon, Atriplex, Triticum, Samolus, Elymus, Artemisia, Tamarix, Salicornia, Suæda, Zygophyllum, Nitraria, and other genera, constitute the principal elements of the salt-plain flora; but many of these genera, and even the species, are not confined to the salt-plains. It is, however, the numerous and singular forms of the Chenopodiaceæ and various species of Tamarix that may be regarded as specially characteristic plants.

Griffiths' collection (which is now in the herbarium at Kew), made on the journey described above, comprises upwards of a thousand species of plants. This collection is exceedingly interesting, as it illustrates the junction of two widely different floras. It is in Eastern Affghanistan that the steppe flora, as Grisebach designates the flora of Central Asia, Persia, and all except the coast region of Asia Minor, finds its eastern limit, and meets the richer and luxuriant vegetation characteristic of the mountains of Northern India. An enumeration of some of the genera to which the prevailing species belong will give an idea of the general physiognomy of the vegetation:—Arenaria, Alhagi, Anchusa, Astragalus (sixty species), Artemisia (covering large plains), Allium, Asphodelus, Berberis, Cnicus, Carex, Celtis, Cupressus, Capparis, Centaurea, Cousinia, Cynoglossum, Daphne, Dianthus, Dipsacus, Echinops, Euphorbia, Eryngium, Echinospermum, Ephedra, Ferula, Festuca, Gypsophila, Hyacinthus, Hyoscyamus, Linaria, Muscari, Nepeta, Onosma, Peganum, Polygonum, Plantago, Quercus Ilex, Rumex, Salvia, Silene, Salix, Sisymbrium, Scirpus, Trifolium, Verbascum, Zizyphus, &c.; and those genera mentioned as inhabiting the salt plains are generally dispersed, and some of them represented by numerous species.

It will be seen that nearly all the genera enumerated are European and many of them British, but in most cases the species are very different, having the peculiarities of aspect and structure described above. The bulk of the vegetation belongs to the families Cruciferæ, Caryophylleæ, Tamariscineæ, Zygophylleæ, Leguminosæ, Umbelliferæ, Compositæ, Plumbagineæ, Boragineæ, Labiatæ, Polygonaceæ,

Chenopodiaceæ, Liliaceæ, Irideæ, Cyperaceæ, and Gramineæ. Some of the small families, as Tamariscineæ and Plumbagineæ, are rich either in species or individuals, though represented by few genera. The aquatic and paludal plants collected by Griffith are identical with, or closely allied to, the British species. Of trees and large shrubs we have said nothing, and there is little to be said.

FORESTS.

The almost total absence of trees in the greater part of Affghanistan is in striking contrast to the rich arborescent vegetation of the Himalayas. As we are indebted to one source alone for information on this subject, we cannot do better than give some extracts from Griffith's report (*Journal of the Asiatic Society of Bengal*, vol. x., part 2, page 797) to the Indian Government :—

"The nearest wooded part of the Sufaid Koh to Cabul is Tairzeen, a distance of three marches, including, at least by the common route, a steep pass, Huft Kothal, some 3000 feet in height. In the direction of Cabul there does not appear to be any water carriage available for the transport of timber. Cabul may therefore be said to be in a considerable measure beyond the reach of an efficient supply of good and durable timber. Candahar and Ghuznee may be said to be absolutely beyond the reach of any indigenous supply. The forests of the Sufaid Koh (the range of mountains between Cabul and Peshawur) consist of various kinds of Fir, among which the Deodar is abundant. The Cheel, Pinus longifolia, also I believe occurs, as well as the Chilghozeh, which, from the abundance of seed exposed for sale, must be common. The seeds of this seem to resemble exactly those of the Kunawur, Pinus Gerardiana These forests likewise contain a species of Oak, an Olive, and a few other trees. The Deodar, however, is the most important tree ; its lower limit is 6500 feet above the sea. Between this and the summits of the ridges, which attain a height of about 10,000 feet, the Deodar rules supremely, vast in abundance and in size. These forests may be considered available for Jelalabad and Peshawur."

Besides the above trees, and independently of fruit trees, which are cultivated extensively in some parts, Griffith observed three or four kinds of Poplar and two or three of Willow, as well as the Hawthorn. The houses of Cabul are built of mud and slight Poplar timber, and have, it is stated, to be renewed once in every twenty-five years. The great bulk of the vegetable fuel is supplied by the low bushes, chiefly by species of Artemisia, common in the barren parts of the country. A good deal of charcoal, prepared from the Deodar, &c., is taken to Cabul from Taizeen, but it is exceedingly dear. When our officers were there in winter it cost them daily, in severe weather, three rupees for fuel.

CULTIVATION.

From Griffith, Irwin, Stocks, and other writers, we learn that agriculture and horticulture are very successfully practised in some of the fertile valleys and plains under irrigation, though the greater portion of the country is uncultivated and uncultivateable. Writing from Cabul in August, 1839, Griffith says :—

"I am encamped close to Baber's tomb, lulled by the sound of falling water, and cooled with the shade of Poplar and Sycamore trees, with abundance of delicious fruit, and altogether quite happy for the nonce. I have not yet seen the town, which is a strange place, buried in gardens ; but nothing can exceed the rich vegetation of the valley in which we are encamped. Beautiful fields on every side, with streamlets, rich verdure, Poplars, Willows, and bold mountain scenery, which contrasts most favourably with the dreary barren tracts to which we have been accustomed."

At Quettah Griffith saw a good deal of cultivation, principally of Wheat. Munjit (Rubia cordifolia) was also cultivated on trenched ground, the young sprouts having a good salad flavour. Stocks states that at Moostung, a little south of Quettah, the orchards extended for 3 miles in length, forming a truly noble sight. Among the fruit trees were Mulberries, Cherries, and Apricots ; and Stocks adds a species of Celtis and an Elæagnus for the upper region. Very little cultivation was seen between Quettah and Candahar, until within a few miles of the latter place, where the Wheat and Madder were very fine, there Barley was also seen. The ground around the Khan's house was prettily ornamented as a garden, containing Sweet William, Pinks, Stocks, Marigolds, Wallflowers, &c. The chief trees about the city were Mulberry, some of them very fine, a round-headed Poplar, and a Xanthoxylon. Milch cows and sheep were abundant and cheap. Lettuce and Onions were commonly cultivated in the small gardens. Of other agricultural crops Lucerne was abundant, Pomegranates and Grapes good, the vineyards being enclosed by mud walls without any gateways or openings. The Vines are planted in trenches, a row on each side, and allowed to run over the intervening ridges. Good crops of Tobacco were observed, and in a garden leading to a religious establishment there were some stunted Plane and Ash trees. Fig trees were umbrageous and fruitful. Barley and Wheat were ripe at the beginning of July, when Indian Corn was just sprouting. Here we may note that Griffith mentions a plant, which he calls Joussa, in his journal from day to day, whether abundant, wild, or scarce, or cultivated. This is the Alhagi maurorum (or A. camelorum), a most formidably spiny leguminous shrub, and a favourite article of food with the camel. It is occasionally cultivated in Affghanistan, though it is exceedingly common in a wild state in most places, growing where almost nothing else will, from an elevation of 2000 feet up to 9000 feet. The distribution of this remarkable shrub is almost the same as that of the camel under domestication, ranging from Greece and Egypt, through Arabia, Syria, and Armenia to Affghanistan, North-west Himalaya, and Soongaria. At and around Ghuznee the gardens were numerous, and usually well cultivated ; all being walled and capable of irrigation, and covered with fine grass or Clover. Apples, Apricots, Pears, and Plums much like the Orleans Plum, a kind of Green Gage, Bullace, Elæagnus, and Mulberries were the principal fruit trees. The Pears, although small, were good flavoured, and superior to any of the other fruits. But the gardens of Cabul and its vicinity contained the richest and most varied produce, and there was a profusion of fine fruit in the town, especially Melons, Grapes, and Apples. Hazel-nuts, Peaches, Cucumbers, Pumpkins, Carrots, Peas, Beans, Roses, Jasmines, and various other garden plants were cultivated, besides those already named. Rice also was extensively grown.

VEGETABLE PRODUCTS IMPORTED INTO INDIA FROM AFFGHANISTAN.

In a report by Lieut. Postans on the trade between Candahar and Shikarpoor the following vegetable products are enumerated as articles of commerce :—Churrus, an intoxicating drug, prepared from Hemp seed, and used in these countries for the same purposes as opium elsewhere. Gum, of uncertain origin, but apparently of the same description as the gum-arabic of commerce, and most extensively used for dyeing, &c. Dried fruits of various kinds, as Prunes, black Grapes, Walnuts, Apricots, Almonds, and Dates in large quantities. Khund Leah, a preparation from the Sugar-cane of Jellalabad. Madder, an important article in the trade, brought down in large quantities. There are two descriptions, called Rodung Kukree and Rodung phurreah : the latter is cultivated at Candahar, is of a larger size, and of double the value of the other. Saffron, called Bakooee, from being produced at Bakwa, west of Candahar ; Safflower, from Herat ; gum-salop, from Herat in small quantities, but greatly in request at Shikarpoor ; Musagh, a dye from the Walnut tree ; Punoieer, used medicinally and produced by some wild shrubs in the hills ; assafœtida, an important article of trade, being produced abundantly in Khorassan and the hilly country of Beloochistan ; caraway seeds ; Airmah, a very fine description of Cotton from Herat, used in embroidery and highly prized ; Cochineal from Khorassan. As the country has been almost closed since abandoned by the Indian Government, there has been no development of trade, and our knowledge of it on most points remains much where it was in 1841. *W. B. Hemsley.*

THE NEW FRENCH ROSES.

(*Continued from p.* 494.)

PROCEEDING to deal with the fresh arrivals since the last paper, it must be remarked that the lists of three of the most eminent raisers—Lacharme, Guillot fils, and E. Verdier—are still wanting, as well as those of a few others of less repute. However, we are now able to give the announcements of the productions of six more, making up, with those previously given at p. 494, a total already of forty-five candidates for our English favour.

Beginning with Pernet fils aîné (Rhone, raiser of Baroness Rothschild and Castellane), we have as follows :—

H.P. Wilhem Kœlle.—Vigorous, large, stiff wood, few spines ; foliage deep green, flower very large, almost full (note this elastic term), globular ; fine bright red, carrying itself well, freely perpetual. A variety of great effect, from Alfred Colomb. I recommend this variety to my patrons, like my Baroness Rothschild.

H.P. Souvenir de Victor Emmanuel.—Vigorous, stout, stiff wood, very thorny, fine deep green foliage ; flower large, nearly full, delicate rose, sometimes bright rose ; an excellent variety for "vase culture ;" forces well ; seedling from Géant des Batailles.

Tea or Indica, Docteur Berthet.—Vigorous, flower large, full, opening well ; half the petal delicate rose, and bright rose in the centre. A variety remarkable for its colour.

M. Fontaine.

H.P. Louis Doré.—Plant vigorous, fine wood, and foliage dark green ; flower well formed, from 10 to 12 centimetres ; pretty bright cerisc-red, shaded purple ; extra free flowering, and opening perfectly well. Of the first order of merit for massing.

H.P. Madame Fauvennier.—Vigorous, strong wood, fine foliage, deep green ; flower, 10 centimetres ; pretty and perfect form, of a fine amaranth-red, the under face of petals silvery ; flowering perfect.

H.P. Edouard Fontaine. — Plant vigorous enough, wood thin ; pretty foliage, clear green ; flower fine silvery rose, 10 centimetres ; form perfect, having much resemblance to Baronne Gonella : it is very floriferous, and opens well.

Hybrid Bourbon, Julia Fontaine —Plant vigorous, fine wood, and foliage pretty clear green, few spines ; flower perfectly imbricated, of a pretty clear salmon-rose colour, 10 centimetres, flowering abundant ; seedling from Louise Odier ; plant admirable.

Moreau, Robert (Angers).

H.P. Panachée d'Angers.—Very vigorous, flower medium, full delicate rose ; very finely striped and marbled with deep violet-purple (extra).

Note.—This plant is the Commandant Beaurepaire sent out by me and cultivated for ten years in the hope of establishing its perpetuality (being rather a hybrid than a Provence), a fact now perfectly accomplished. [Why change the name ?]

H.P. Graziella.—Very vigorous, flower large, full, fine flesh-rose, very delicate, very floriferous.

H.P. Souvenir de Madame Robert.—Very vigorous, flower large, full, opening well, cupped ; delicate satin salmon-rose, centre deeper, very free-flowering (extra) ; seedling from Jules Margottin.

H.P. Souvenir de Victor Emmanuel (note that Pernet has also one of the same name. *W. D. P.*).—Very vigorous, flower very large, opening well, full ; red-vermilion, velveted with purple and crimson ; very free-flowering (extra).

Ledechaux (Widow), near Brie Comte Robert.

H.P. Léon Renault.—Very vigorous, flowers large, very full, well formed ; fine deep cherry-red, brilliant ; very fine buds, always opening well ; plant very perpetual. This Rose by its vigour, its abundant blooming and fine colour of its buds, numerous and well shaped, will be very useful for the trade in cut Roses.

J. M. Gonod (à Montplaisir, Lyon).

H.P. Madame Eugène Chambeyran (seedling from Victor Verdier).—Shrub vigorous, upright strong branches, nearly thornless, footstalks firm, foliage of fine leaflets ; flowers large, full, globular, extremely well formed ; colour delicate shaded "Aurora ;" very free flowering (extra fine).

Mons. Lapierre (seedling from Géant des Batailles).—Vigorous, stiff branches, strong numerous red spines ; foliage with fine leaflets, footstalk strong ; flowers medium or large, very well shaped ; colour glowing red, shaded velvety crimson ; very perpetual.

Princesse Marie Dolgorouky (seedling from Anna de Diesbach).—Very vigorous, stiff branches ; foliage with fine large leaflets, deep green ; footstalk firm ; flowers larged, cupped ; very well formed, magnificent bright satin-rose, very often striped lines of carmine. A variety of great effect.

Ducher (Widow), Lyon-Guillotiere.

Tea, Marie Jaillet.—Very vigorous ; flower large, full, well-shaped ; colour, pale rose, with bright rose centre passing to clear lilac ; very pretty.

Tea, Innocente Pirola. — Very vigorous ; branches short and stout, perfect carriage ; flowers very large and well-formed, with large elongated buds ; colour pure white, sometimes slightly rosy. This variety will supersede (?) by its vigour and abundance of flowers Rose Niphetos.

Noisette, Joseph Bernacchi.—Very vigorous, fine deep green foliage, of perfect appearance ; flower large, full, with large elongated buds ; colour white, slightly yellow ; centre deeper ; very fine.

Noisette, William Allen Richardson.—Very vigorous, large wood ; foliage fine deep green ; firm footstalk, of perfect carriage ; flower large, well shaped, of a fine orange-yellow—a colour unique amongst the Noisettes Flowers on all its branches ; a very fine variety.

H.P. John Saul.—Very vigorous, wood stout and short; leaves of a fine deep green, footstalk firm; flower very large, full, globular; fine clear red, back of the petals carmine; very sweet. This plant of the highest merit, flowers freely, and is a seedling from Antoine Ducher. *W. D. Prior.*

THE GARSTON VINEYARD

Is situated about five miles from Liverpool, and is easily reached by rail or 'bus, the former being perhaps the most accessible mode of travelling, owing to the numerous and well-appointed service of trains which run at short intervals between the "central station," Liverpool, and Garston. The Vineyard is but a short distance—about half a mile—from the Garston station, where there are at all times plenty of conveyances in readiness for visitors who do not choose to walk. There are perhaps few other seminaries of horticulture in Europe better known than the Garston Vineyard, consequent on the fame in Grape growing achieved by its promoter and founder, Mr. Joseph Meredith, who, it will be remembered, ceased to have any connection with the business after it was acquired by the "Cowan Patents Company," of which the present proprietor, Mr. John Cowan, was the acting manager.

The Vineyard and its appurtenances was purchased by the company for the ostensible purpose of introducing to the horticultural public the now well-known system of "limekiln heating," invented and patented by Mr. Cowan. The new company, however, appear to have had but a chequered career, the limekiln system of heating not meeting with much public favour after the first few months of its existence. Ultimately the company disposed of the whole concern to Mr. Cowan, who is now actively engaged in re-establishing the reputation of the Vineyard, but on a somewhat different basis than that hitherto adopted. Before going into details, I would observe that in a place of such magnitude, which has passed through so many vicissitudes lately, it will be easily understood that the working machinery, as to its general organisation and management, is capable of reform and improvement on a large scale. Notwithstanding that this is to some extent the case, the general tone of the establishment (especially the glass department) has improved so much under Mr. Cowan's personal supervision that it augurs well for the future.

The concern is now intended to be carried on as a general nursery, comprising all sorts of choice exotics, fine-foliage plants, new and rare plants, herbaceous plants, bedding plants (both spring and summer), Roses in pots and for planting out, fruit trees, and young Vines for fruiting in pots and for planting out, all of which are in excellent condition.

In addition to the general nursery stock there are thousands of plants grown for the branch departments in St. John's and St. James' Markets, Liverpool, where cut flowers and fruits of all descriptions are offered for sale in season.

The horticultural building and heating department is carried on by a staff of efficient workmen in their respective capacities, the workshops, sheds, machinery, &c., having been erected during the ownership of the late company at a cost of over £2000.

Having thus briefly described the main features of the Vineyard and the multifarious objects its present proprietor has in view, I would beg the reader to follow me to the front entrance to the nursery on the Speke Road, by which visitors approach the nurseries on the south side. Here there are two other entrances, one leading to Mr. Cowan's cottage, known as Vine Cottage, which is pleasantly situated at the extremity of a nicely laid out garden filled with flowering plants and shrubs, and the third entrance, the main thoroughfare to the nursery. On the north side of Mr. Cowan's cottage are the business offices, and on the west side there is a large conservatory attached, probably the most foolish speculation for business purposes that could well be conceived. The centre of this house is filled with large Camellias, Azaleas, and other hard-wooded plants, and the front stage with hundreds of small Camellias and Azaleas, with nice plants of Dracæna australis set on inverted pots along the middle of the stage. The next house is a span-roofed vinery running east and west, and is one of the early vineries. The Vines in this house are greatly debilitated, and the crop, though a useful one for market purposes, was not what could be desired.

The next house in rotation is the famous Madresfield Court vinery, a lean-to house facing due east. This house is 50 feet long by 18 feet wide, and the Vine has made such remarkable progress that Mr. Cowan has extended the outside border and also cleared an adjoining house of Peach trees, 42 feet long, for the purpose of extending the tops of the Vine to their utmost capacity. The crop in this house fully bears out the high opinion formed by many people of this Grape; it is a sure cropper, and as a market Grape cannot be surpassed. A span-roofed pit running parallel with this house is filled with a healthy collection of Cyclamens in various stages of growth.

We now come to the principal blocks of span-roofed houses, all of which run east and west. The first block of three runs parallel with the early span-roofed vinery already noticed. No. 1 house contains an assortment of Ferns, principally Adiantums, Lomarias, Pterises, Club-mosses, and a quantity of Cyperus alternifolius, for market. No. 2 is filled with winter-flowering Pelargoniums. This, with two other houses, was occupied in raising Vine eyes last spring, which, by the way, were inserted in the beds instead of pots, as is usually done. No. 3 is occupied with Tuberoses, tuberous-rooted Begonias, Richardias, in small pots, for market and decorative purposes; Ficuses, Jasmines, Justicias, Thyrsacanthus, dwarf Poinsettias, Eranthemums, and a nice young batch of the beautiful Tabernæmontana coronaria flore-pleno.

Block No. 2 is, as indeed are all the blocks, separated from block No. 1 by a wide working path, and is composed of three span-roofed houses, viz., foliage plant-house, propagating-house, and Gardenia-house. The foliage plant-house contains many new and rare forms of the latest introductions in this class of plants, well cultivated and cared for, as may be seen from their robust growth and colour, and of a size suitable for growing on into specimens or for immediate decorative purposes. They consist of choice varieties of Crotons, such as Disraeli, Challenger, Earl of Derby and Andreanus.

These are merely mentioned by way of illustration; Dracænas, Dieffenbachias, Cocos, Aralias, and others are equally well represented. The second house is a propagating-house, which at this season of the year is not so interesting, as it is earlier, when a variety of subjects are in process of being rooted. House No. 3 is filled with Gardenias of different sizes, with a sprinkling of other miscellaneous plants. The larger Gardenias produce a quantity of flowers, which are in great request during the winter months, and the smaller plants are of course nursery stock of a saleable size. There are also seedling Palms, and a nice collection of Cyanophyllums.

Running parallel and of equal length with the two blocks of houses above described are two ranges of vineries, one range facing due south, with a hip-roof, and the other, the noted Lady Downe's house, a flat lean-to, situated on the north side of the wall which divides both houses. The vineries are each 150 feet long, that on the south side being a mixed house, in which a fair crop of Grapes was ripe in July. These Vines have improved during the last year or two, and give promise of soon acquiring their former vigour by the exercise of skill and careful cropping. The north or Lady Downe's house is well stocked with fine Grapes for market, nothing sensational, but good Grapes for table, and well coloured. There are some very fine bunches weighing from 2 lb. to 3 lb., beautifully coloured, and with a rich deep bloom that would be thought creditable produce in a house with a south aspect. Alicantes are also a good crop in this house, but the berries are not so large or so well coloured as the Lady Downe's.

Of block No. 3, the first house is 73 feet long, and devoted to the cultivation of Muscat Grapes alone; the crop has been a very good one, and the Vines are improving in vigour. I noticed a consignment of newly-imported Turk's-cap Cactus in this house, they are of pyramidal shape, and I suppose derive their name from the fact of each plant bearing a crown resembling a Turk's cap. They are more curious than useful, and will no doubt be sought after by lovers of curiosities. No. 2 in this block is another span-roofed house, and filled with choice Croton Johannis, Macarthuri, Prince of Wales, and Queen Victoria, with Dracænas in variety; seedling Palms and other small plants occupying the side stages. No. 3 is filled with Solanums richly berried, and of different sizes, suitable for any form of decorative work through the winter. No. 4 is the celebrated Barbarossa-house worked on the extension sytsem, and fruited both on the spur and on the rod principle. Both systems succeed equally well, the bunches on the "spurs" being rather more compact than those on the "rod." This Vine finished a good crop of Grapes, the bunches being tapering and well formed, and the berries large and well coloured. Mr. Cowan has exhibited several stands of highly-finished Grapes from this Vine during the past season, and further extension for the branches is in contemplation.

An adjoining house is filled with winter flowering Heaths, Azaleas, Epacrises, Solanums, and a variety of other plants, including some well-grown Dracæna australis. Returning to Mr. Cowan's cottage, we come to the last block of houses before going into the adjoining portion of the nursery, which is intersected by the main thoroughfare elsewhere referred to. The first house is a lean-to vinery attached to the cottage, and is planted with Black Hamburghs. Mr. Meredith's favourite Vine, from which he used to cut his best Black Hamburgh Grapes for exhibition, is still in existence. It is noteworthy that the house has an east aspect, and yet the best coloured Grapes that have ever been grown in the Vineyard have been cut from the Vines grown in this house; indeed, these are the Vines that made Joseph Meredith's name as a cultivator of the Grape Vine—so that a south aspect is not indispensable after all in the matter of high colour and finish.

The other houses in this block, four in number, also run north and south. No. 2 is filled with small bushy plants of Cytisus racemosus. No. 3 has an endless variety of those indispensable winter flowering plants. Of Bouvardias, I noticed Vreelandii, Humboldtii, corymbiflora, longiflora flammea, and jasminoides. No. 5 contains a miscellaneous collection, including small Pelargoniums and Camellias, of which there is a large number of the old Double White and a quantity of other stock plants.

Leaving a range of well-appointed sheds on the left-hand, and the nursery thoroughfare on the right, we come to a large span-roofed house, running north and south, replete with choice Tea Roses, bristling with buds in all stages of growth. I noticed, as usual, Safrano as amongst the freest to bloom; Niphetos, Socrates, Isabella Sprunt, Irma, Madame Margottin, Goubault, and others were also free bloomers. Abutilon Boule de Neige and Prince of Orange were also prominent features here. Next in order are two very large span-roofed houses, each 200 feet long, the first is a vinery, containing mostly Muscat Vines, which are still bearing fair samples of this excellent Grape almost 3 lb. in weight. The second is a Rose-house with a serpentine walk up the middle. The roof is covered with Roses from end to end, chiefly Maréchal Niel, Gloire de Dijon, Niphetos, and other favourite kinds. The body of the house is filled with Camellias, which are either planted out or plunged in their pots in the borders on either side the path. Many of the plants are in excellent health and many more are not in this desirable state. Brugmansias, Cytisus, and Abutilon Boule de Neige, are doing remarkably well, especially the latter, which is a specimen 10 feet high and nearly as much across, and flowering profusely.

Specimens of the old white Azalea are coming into flower in this house, which is quite cool, and will continue to supply cut flowers for months to come by working up successive batches. There are many features of horticultural skill represented in this house on a somewhat miniature scale, which lessens the effect as a whole, and might be considerably improved upon for purposes of utility, as there is hardly space enough in width to carry out so many ideas with anything like consistent effect.

The last house we come to (with the exception of a few temporary structures) is the large vinery, said to be the finest house of the kind in England. It is over 200 feet long and 40 feet wide. It is truly a gigantic hothouse, and is filled from end to end with Grape Vines from eyes this season. The young Vines, generally speaking, are splendidly grown, Mr. Cowan being determined to keep up the reputation of the Vineyard as a Vine-growing establishment; and, in order to be successful he has made the cultivation of the young Vines his own special study—indeed, I may say "hobby"—for all the Vines have been grown under his own personal direction and management. There are over one thousand of the ripest canes already turned out-of-doors, and over three thousand still remain in the

house, besides the occupants of one or two other houses.

The houses, as is well known, are heated by the limekiln system, which was so freely discussed in the horticultural press some time ago. The general working facilities of the Vineyard are elaborate, and there is no lack of energy or enterprise on the part of the management to ensure the success of the undertaking. *W. Hinds, Otterspool.*

THE PLANTING OF TREES IN TOWNS.

A MEETING of persons interested in the planting of trees in towns was recently held in Manchester, in compliance with an invitation issued by the Council of the Royal Botanical and Horticultural Society of that city. The chair was occupied by Mr. Alderman Heywood, and a paper on the subject was read by Mr. Bruce Findlay. Mr. Alderman Murray, Dr. J. Watts, Dr. Hardy, Mr. W. Scott Brown, Mr. T. Schofield, and Miss Becker were amongst those present.

The Chairman, in opening the proceedings, said the meeting had been called in consequence of a correspondence which had appeared in the newspapers during the last two or three months. Being chairman of the Highways Committee, before whom questions relative to the maintenance of trees frequently came, it appeared to him desirable that the subject of introducing trees into the town and its suburbs should be fairly considered. Occasionally the committee had done their utmost to preserve the trees which they found in the groves or streets that required paving and sewering, but under the Act of Parliament that was no part of their functions. He thought that a declaration from the meeting would probably strengthen the committee in their efforts to preserve the trees which they found growing in the streets.

Mr. Findlay, after drawing attention to the importance and beauty of trees, dwelt on the special kind of trees and the method of planting that would most likely prove successful. He pointed out some of the evils which trees in large towns have to contend with, how such evils might in some degree be mitigated, also the kind of trees to plant, the mode of planting them, and their after-management. With reference to the first point, smoke and soot, although enemies of no mean power, were by no means the only enemies to which trees planted within the circle of cities and large towns were exposed. The drainage which extended throughout the city was a severe trial to them, the moisture of the soil being thereby taken away. With the close pavement and the means at hand for quickly carrying away the rainfall, there was very little chance of water percolating through the soil and moistening the roots of the trees. As to the means by which these evils might be mitigated he thought it was pretty generally admitted that the smoke emitted was much larger in amount than it ought to be, and if the law were enforced and obeyed the evil arising from smoke would be very much lessened. With regard to the evil occasioned by the abstraction of water, the remedy consisted in the judicious artificial application of that element in such a way as to supply the deficiency, in part at least, and if this were done systematically there seemed no reason why trees should not grow in Manchester. He explained the manner in which water ought to be applied to the roots, and pointed out also the importance of frequent washings of the foliage. The trees he recommended for planting, in the first instance, were the Ash, Oriental Plane, Canadian Poplar, Birch, Weeping Elm, and Sycamore. The first thing to be done before planting was to have the soil well prepared. The folly of not attending to this was seen in the result of planting trees in the Cathedral yard on a recent occasion. In that case it was apparent to the most superficial observer that they would not live. [As was stated in our columns at the time. EDS.] The trees selected were not of the right kind, the planting was done in a slipshod manner, and the constitution of the poor trees was exceedingly weak, notwithstanding that the trees were selected and bought, he understood, by "constitutionalists." He suggested that the Corporation should first plant trees in the open spaces around All Saints' Church and the Infirmary as an experiment, remarking that if with proper attention trees would not live the inference to be drawn was that the places were not favourable for human life.

Dr. Hardie moved a vote of thanks to Mr. Findlay for his paper, and Mr. T. Peel, in seconding the motion, said the local authorities were taking active measures for the suppression of the smoke nuisance. They met, of course, with a good deal of opposition, and it was felt that the Corporation would have to ask for enlarged powers so as to bring about a better atmosphere than they had at present. The motion was passed unanimously.

Dr. J. Watts agreed that if the atmosphere would not support trees it was a sorry one for human beings to move in. The mortality of Manchester, he was glad to say, was decreasing, and he hoped it would go on decreasing. He thought they owed something to the Health Committee and to the Medical Officer of Health for this fact. If they could diminish the mortality the atmosphere would be made such as vegetable life would flourish in. He endorsed the remarks of Mr. Findlay as to the kind of trees likely to live in the town, and enumerated instances where some of the trees specified were now growing. He regarded the present movement as a healthy sign, and expressed his trust that the Corporation would do all in their power to encourage the planting and the growth of trees in various parts of the city.

Mr. T. Schofield said they had never tried trees in Manchester properly, and therefore he was most desirous that a fair trial should be made. He thought the expense ought to be borne by the ratepayers at large rather than left to private benevolence.

Miss Becker urged the importance of retaining the old trees as well as planting new ones, and complained of the ruthless manner in which many trees, once an ornament to the locality in which they grew, had been rooted up. It seemed to her that, in the formation of Alexandra Park, the committee commenced operations by grubbing up every tree they found growing. She observed a great many trees around Moss Side, but not one within the precincts of the park, and therefore it seemed that the authorities must have taken away the trees and left a green expanse decorated with a number of tablecloths in the shape of flower-beds. There were a great many beautiful trees around Greenheys, Oxford Street, and in other directions, and she earnestly hoped they would be preserved.

Mr. Alderman Murray said Miss Becker was labouring under a wrong impression in regard to Alexandra Park. Those who remember the condition in which the committee found it would, he believed, give them credit for having made a Garden of Eden out of a "Slough of Despond." The Parks Committee were disposed to render every possible assistance in carrying out the object of the meeting. A nursery had been established in connection with the new Southern Cemetery. Trees of various kinds were there being raised, and doubtless they would be put to some useful purpose.

The Chairman said he thought the Council would give the Parks Committee leave to plant trees in the vicinity of the Infirmary and All Saints' Church.

On the motion of Dr. Watts, seconded by Mr. W. Gee, the following resolution was adopted :—"That this meeting is of opinion that it is desirable to make an experiment, under proper supervision, to grow trees in such open spaces as are available within the city, and commends the subject to the consideration of the proper committees of the Corporation."

Mr. Alderman Murray promised to introduce the question at the next meeting of the Parks Committee, and elicit the opinion of the members thereon.

A vote of thanks to the Chairman was then passed.

TUBEROUS ROOTED BEGONIAS.

THE following remarks are penned in the interest of those persons who are at present comparatively unacquainted with the successful cultivation and preservation of these rapidly improving and fast becoming popular plants. To begin at the beginning, raising from seed should come first; the best time to sow is July or August, as this gives time enough to enable the young plants to form small tubers before the winter comes, and this gives so much of a start in the spring as to ensure that most of the resulting plants will come into bloom before the close of the next season, which in the case of spring-sown plants does not always occur. I find the best plan for getting the seed up to be: Prepare a sufficient number of pots (6-inch I use) with drainage, rough compost, then finer and finer still, made quite firm and smooth to within ½ or ¾ inch of rim (the soil recommended below will do), water well with scalding water, and when cooled down sow the seed; place the pots in a moderately heated house in a light position, where they may be shaded from the bright sun for a few hours during the middle of the day. Do not cover with glass or anything else, as if the seed is good it will commence to germinate in a very few days after sowing, and as these plants are very impatient of confinement or coddling, allow from the first a free circulation of air around and amongst them, keeping the pots moist by sprinkling with water. As the seed is so very small, great care in performing this operation is needed during the earlier stages. As soon as they are fairly up, and before they begin to crowd each other, they should be transferred in little groups to other pots or pans prepared as for sowing the seed (with the exception of the watering), being too small in this stage to handle singly, still keeping in the same house.

These Begonias will endure and require much more heat at this early stage than at any future period of their growth; they will now begin to grow apace, and in a few days will cease to require any shade, but a freer circulation of air, and in a short time must be singled into other pots or pans, in which they may remain (if in autumn) and grow on as long as they will continue to do so. Many will not go to rest at all, or at least not before the winter is well advanced. They must not be allowed to become dust-dry, but kept at rest until they start naturally in the spring, when they may be potted off singly, from which time their progress will be most rapid, soon requiring to be shifted into 5 or 6-inch pots and many again soon after into 8 or 9-inch, in which they will continue during the season, or they may as soon as established in their small pots be placed in cold frames to harden off and grow slowly until the weather is suitable for planting them out-of-doors. Of course, in the case of spring-sown seedlings, the growth would be continuous, but as regards potting and other attentions the same.

A good compost for them is very fibry sweet loam, with a liberal mixture of half-decayed leaf-mould and some sand. The best results I have obtained at all was with half-decayed Couch-grass and other weeds gathered from a sandy upland, and half-rotted leaves, used in a very rough state—in fact, I usually shake out a good deal of the finer portions. Soil of this nature contains a good deal of *pabulum* and keeps them going for a long time. They cannot succeed well in close fine soil, and they dislike peat, and also never do well in rotten manure under pot culture; whereas, on the contrary, planted out-of-doors, they revel in a liberal allowance of rotten manure, vegetable refuse, and anything light and rich in humus—in fact the soil for out-door culture can scarcely be too rich. No specific time can be mentioned for planting them out. Each cultivator must be guided by the temperature and climatic conditions of his own locality. I never use liquid manure of any sort, as I find that, if the soil is right, none is required. As to position in the open air, some authorities say plant in full sun. This is not my dictum. I find they will not endure the full blaze of a June or July sun, at least during the hottest part of the day. At this time I place among them a few branches just to break the hot rays. After July is out, and the nights begin to grow longer and cooler, they seem to enjoy the fullest exposure, and then growth will be most rapid; they require at all times liberal supplies of water. It is quite astonishing how hardy they are, and persons seeing them for the first time doing so well in the open air are fairly astonished. As an evidence of their cold-enduring capabilities, a large number planted out (close upon 10,000) here, were exposed to the full force of the autumn equinoctial gales accompanied with a deluge of rain. I fully expected the next morning to find my Begonias smashed to pieces, but on the contrary they remained quite uninjured beyond a few bruised flowers; the fact of their growing close together would account in some measure for this, still their rain-enjoying proclivities are immense. After a deluge they only appear fresher than before, while beds of Pelargoniums close by are quite flowerless. Again a sharp frost occurred here on the morning of October 1, succeeding a day and night's rain: Amaranths were killed, Heliotropes blackened, Vegetable Marrows done for; but after the most careful scrutiny I find the Begonias were quite uninjured, and are now (October 22) a mass of flowers and vivid green, and look as if they would go on for months.

Their propagation from cuttings is comparatively

easy, but the earlier it is done in the season after growth has commenced the better, so as to allow of their forming strong tubers before the resting period comes round again. The small stubby shoots of two or three joints are large enough: insert them after drying a little in damp sand, in moderate warmth, they strike off very quickly; pot off and grow on as required. Some of the best sorts are very slow of increase, in fact I have had some choice seedlings two years and have never got so much as a single cutting; these must ever remain scarce.

Resting.—They should be allowed to choose their own time both when grown in pots and when planted out. So soon as it becomes dangerous to leave them out longer, they should be lifted and potted and be put in the greenhouse to finish off, where they will continue to produce a very gay effect (if carefully watered) for a long time. When the stems have fallen off they should be put away (still in their pots) in some situation where they will not become dust-dry, and where they will be secure from frost only. They require nothing more than bare protection: under a greenhouse stage (taking care that they are not watered from above), or even a cellar, would be very suitable, but where room can be found the best place is a cool Peach-house or vinery. Place the pots close together on the ground, and cover over with cocoa-refuse, sawdust, or other non-conducting material. Here they may remain until they start naturally in the spring. I say "naturally" advisedly, as I believe that unless some specific object is in view nothing is gained by attempts to push them prematurely into growth. If allowed to come away slowly and in their own time they do so strongly, and afterwards quickly make up for any fancied loss of time, as their growth is astonishingly fast. Where large numbers have to be kept I find an excellent plan to be to reduce considerably the soil about them, and pack them close together in shallow boxes, putting one, two, or three layers until full, filling up level as you proceed with the finer soil; then place these boxes one over the other in a suitable situation as to moisture and temperature, thus to remain until signs of growth appear. I believe to completely denude their tubers of soil when at rest, in order to send by post or otherwise, is quite wrong, and I attribute much of the non-success attending their successful starting to the too great drying consequent on this treatment. The best time to repot is just as growth is beginning: shake them completely out of their soil, and repot in clean pots sufficiently large to hold them and no more; when they have filled these with new roots repot as required.

I am convinced that any one with a cold frame and sufficient covering to exclude frost may grow and keep these beautiful plants, in fact some of my brightest results have been obtained in cold frames with the lights tilted on their sides night and day, so as to allow the fullest possible circulation of air, and in this manner plants may be grown fit for any exhibition. It cannot be too strongly urged that they are not by any means stove or even warm greenhouse plants, but enjoy plenty of light and the freest possible circulation of air.

It should be mentioned that the light-coloured sorts, whites, yellows, buff, and orange shades, require more shade than the high-coloured sorts do, as they are liable to burn on their edges. *T. Smith, Newry.*

THE FERTILISATION OF THE SCARLET RUNNER BY HUMBLE-BEES.

The fact of humble-bees perforating corolla-tubes or calyces, in order to get the sweet secretion of a flower, instead of entering it in the legitimate way, is well known—Fuchsia, Dracocephalum, Antirrhinum, &c., being genera especially so treated. In *Nature* (Nov. 11, 1875) Mr. Belt records his observations on this habit of the commonest of the humble-bees (Bombus terrestris) which, he remarks,

"Does much more harm than good to many of our flowers. I have for several years watched the humble-bees, and I never saw this species go to the mouth of the corolla of the red Clover. As far as my experience goes, it invariably bites a hole at the base of the flower, and extracts the nectar from that opening, so that it is of no use in carrying the pollen from one flower to another. All the other species of humble-bees that I have noticed go to the mouth of the flowers, and they alone are useful in their fertilisation.

"The common Scarlet Runner or Pole-Bean is entirely dependent on the visits of bees for the fertilisation of its flowers, and I have lately seen an instance where the attentions of Bombus terrestris were mischievous and hurtful. A friend of mine living near Finchley had a late sowing of Scarlet Runners rendered barren by these operations. The smaller bees did not visit his garden, and Bombus terrestris cut holes at the base of both the expanded flowers and the unopened buds. The hive bee then seeks for these perforations as a ready means of access.

"At the beginning of the season some of the Bombus terrestris may be seen visiting the flowers of the Scarlet Runner in a legitimate manner, but they soon learn that it is easier for them to get at the nectary by cutting holes at the base."

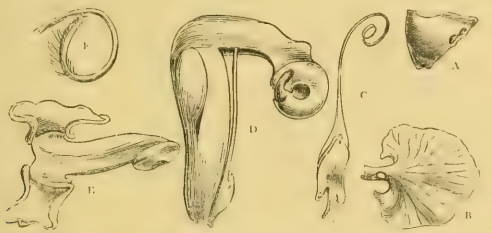


Fig. 97.—Fertilisation of the Scarlet-runner bean.

A, Calyx pierced above; B, Standard with pierced claw; C, Upper free stamen; D, Keel petals spirally coiled at apex, stigma protruding; E, Portions of keel petals "gripping" the lateral protuberances of keel; F, Apex of style, with stigma and "brush."

That late crops of Scarlet Runners often "fail" is no new discovery. In the *Gardeners' Chronicle* for August 8, 1846 (p. 533), a writer asks:—"What causes the blossoms of Scarlet Runners to fall off ere the fruit is set? Here in the neighbourhood of London I have observed for the last ten years that sometimes not one in a hundred, and this year not one in a thousand, of the blossoms have set. In the Midland Counties I never observed this evil. I have tried everything that I could think of, as manuring, watering, stopping, guano, &c., without any advantage. I should say I have lost millions of blossoms the last six weeks. *Montgomeritides.*"

Mr. E. Syme has forwarded some flowers perforated by Bombus lucorum on the upper side. On carefully examining them I find no injury has been done to the pistil or stamens whatever. The peculiar flap on the upper side of the free posterior stamen (fig. 96 C), which is almost immediately below the perforation, is not itself perforated at all.

The important question for horticulturists now arises:—Is the barrenness of the crops which is so generally the case late in season, as well as about or in London—for I have just seen one at Old Ford which was a total failure—due to the mischievous behaviour of the bees or not?

Mr. Darwin's experiments, given in his work on *Cross and Self Fertilisation* (p. 150), appear to decide it. He tells us that when the Scarlet Runner (Phaseolus multiflorus) is protected from insects it only produces from one-eighth to one-third as many pods as plants uncovered. This is corroborated by Dr. Ogle, who also covered up a large portion of a plant, and "out of a vast number of blossoms thus protected not a single one produced a pod, while the unprotected blossoms were for the most part fruitful" (*Pop. Sc. Review*, 1870, p. 168). "Mr. Belt, in his work, *The Naturalist in Nicaragua* (p. 70), gives a more curious case, for this plant grows well and flowers in Nicaragua; but as none of the native bees visit the flowers not a single pod is ever produced" (Darwin, *l.c.*, p. 151).

Here, then, is the first clue to the explanation, the failure of humble-bees to visit the flowers; and, secondarily, when they do, late in the season, they "do more harm than good."

The Scarlet Runner, however, did not prove more fertile when crossed by Mr. Darwin than when the flowers were artificially self-fertilised; so that as far as his "few observations serve," the inability to set seed is a morphological one, and therefore we may attribute it entirely to the absence or bad behaviour of the bees.

It is a remarkable fact, however, that the dwarf or Kidney Bean (such as the Canterbury or Fulmer's forcing Bean), which is the produce of a different species, P. vulgaris, is fully self-fertile, and "seemed to produce as many pods containing so many beans as some uncovered plants growing alongside" (Darwin). This species has also "running" varieties. A long list of the "dwarf" and "running" kinds will be found in the *Gardeners' Chronicle* for 1850, p. 116.

The practical deduction from the preceding paragraphs appears obvious. As long as the Scarlet Runner is grown in gardens in the country where humble bees abound, there will never be, in all probability, much or any complaint about it; but if late crops be wanted, especially in the neighbourhood of and much more within large towns, the Kidney Bean should be grown and not the Scarlet Runner.

Here then we have a case where the practical value of self-fertilisation is obvious. It has never been hinted, so far as I am aware, that the annual Kidney Bean (Phaseolus vulgaris) is in any way less healthy or less prolific than its perennial brother, P. multiflorus or Scarlet Runner; whereas we see how critical is the result, where a plant introduced from a foreign country (Mexico) is dependent upon the native insects of the country into which it has been introduced!

It may be interesting to some of the readers of the *Gardeners' Chronicle* to know how bees perform the operation of fertilising the flowers, that is to say, when they are graciously pleased to do so in the orthodox manner!

The "keel" petals (fig. 96 D) will be seen to have their upper portion spirally twisted, so that the extremity looks like a miniature snail shell or "helix." The style is coiled within it, and carries a small brush near its stigmatic extremity (fig. 96 F). The "wing" petals are more or less fastened to the keel by two processes on the latter, which they grip hold of (fig. 96 E), so that when a bee alights on the left-hand petal (the smaller of the two wings), which it must do, as the orifice of the helix is turned to that side, its weight acting on the lever-like wing depresses it. This latter, firmly grasping the projections on the keel, depresses the latter in its turn, so that the spiral tube at its extremity is dragged over the coiled style within it, which thus passes through the anthers, and sweeps out the pollen from the orifice of the "helix," and deposits it on the bee's back. The stigma, being at the same spot, receives pollen either from the same flower, or from another previously left on her back. On flying away the pressure is removed, and the stigma retires back within the orifice of the helix. By working the left-hand wing petal up and down between the finger and thumb, the stigma can be made to protrude and retire repeatedly in exact imitation of a bee. *George Henslow.* [The fact that the dwarf varieties which are forced are self-fertilising, is a very fortunate occurrence for the gardener, else he would be at a loss for humble-bees in the winter. Eds.]

SELECT TREES AND SHRUBS FOR OUTSIDE WALLS.

(*Continued from p.* 410)

The flora of North America, including that of Mexico, affords a large number of trees and shrubs of high decorative value of various degrees of hardiness, and we may reasonably expect the already long list to be enriched by the results of further explorations of the vast but comparatively little known territories of the more western parts. Those enumerated below are nearly all well-known objects of culture either in the indoor or outdoor garden; but a brief allusion to them may tend to show that this part of the New World is not far beyond the southern part of the continent in respect to its floral wealth which may be

employed for our enjoyment in the open air in this country :—

Tetranthera (*Oreodaphne*) *californica*, though by no means showy, is quite admissible in a general collection, as it is a good evergreen shrub, with deep green, lanceolate leaves, and with greenish flowers produced singly in the axils of the leaves of the upper portion of the young shoots. It is also remarkable for the aromatic fragrance of the leaves, which when bruised is so intensified as to be quite pungent. It is much hardier than is generally supposed, standing with impunity against a wall, and even away from it. A notable instance of this exists in the garden at Bitton Vicarage, where is a specimen about 20 feet high.

Ceanothus is a North American genus containing a large number of really beautiful species, many of which are old inhabitants of gardens, and these have been supplemented by the addition of many species that the results of the more recent explorations of the Far West have brought under notice, and the list has also been enriched by many garden varieties and reputed hybrids, yet they have not received the attention they richly deserve, doubtless owing to being considered too tender to stand the full rigour of our climate without additional protection to that of a wall, but the majority are quite amenable to wall treatment. The wall should have either a west or north aspect, whilst the hardiest species which inhabit the more eastern parts, and even one or two of the western, are quite hardy as standards in the southern counties, and very handsome specimens they make. Notably amongst these may be mentioned C. divaricatus, which is found on the mountains of St. Barbara, California, which forms a veritable "blue bush" for several weeks about the end of spring. A complete list of all the known species will be found at p. 687, 1875, of *Gardeners' Chronicle*, but probably this may not be accessible to some who wish to make a selection, so perhaps the following list of the best will serve as a guide. Some of the species have a wide range of distribution, therefore their exact localities cannot be very tersely defined, but for practical purposes they may be divided into those that will stand without protection, which are generally United States species, and those that need the protection of a wall, and which are natives of California and Mexico. The most desirable of the former are C. americanus and its varieties, velutinus and ovalis, all with white flowers, and the previously mentioned C. divaricatus with blue flowers. The best of those that need protection are dentatus, with very small and toothed leaves and crowded panicles ; cuneatus, also with small leaves ; serpyllifolius, a very small slender species, macrophyllus and verrucosus, all with white flowers. Those with blue flowers are papillosus, thyrsiflorus, rigidus, Veitchianus. The pale blue Mexican C. azureus and its varieties are also very desirable.

Magnolia grandiflora.—This fine old species ought not to be omitted from our list, though in some instances it has proved of sufficient hardiness as to stand quite unprotected, as the fine standard specimens at Kew and elsewhere will show ; but as a general rule it should be afforded the protection of a wall. At all times of the year it forms a noble object with its large oblong, leathery, evergreen leaves, and in the flowering season, which is from June till October, it is one of the grandest objects we have in outdoor vegetation when studded with its immense pure white and delightfully fragrant blossoms. There are several varieties, differing principally in the form of the leaves, such as elliptica, obovata, lanceolata, &c. The variety præcox is worthy of mention, and is a decided acquisition, as it begins to flower much earlier than the type. It has a wide area of distribution in the more southern parts of the United States, and there forms large trees, growing to a height of 60 to 70 feet, and forming a large pyramidal head.

Rubus.—Of this genus there are two or three very showy species from this region. The handsome R. deliciosus, which is found in North-West America, deserves to be in every collection, though it is quite hardy enough to stand without the protection of a wall it suits the purpose well, and in the flowering season, when studded with its large white blossoms, is very attractive. R. spectabilis is another fine species, with stems 6 feet to 10 feet high, but unlike the last the stems are but of biennial duration. The flowers are very showy, being large, and of a deep rose colour. It thrives best on a partially shaded wall, as it is found in shady woods near streams, in Oregon, and various parts on the north-west coast of America. R. nutkanus and R. odoratus are two species closely allied, but the former has very large white flowers, those of the latter being pink. Both are well suited, and very desirable, for wall decoration.

A few herbaceous perennials with annual stems thrive best when planted against a wall, such as Cassia marylandica, the wild Senna, with stem 5—7 feet high, and long pinnate leaves, and producing axillary racemes of bright yellow pea-like blossoms at the summit of the branches.

Desmodium canadense, which inhabits dry woods in Canada, and there only grows 2—3 feet high, under a wall attains a height of 6—7 feet, forming very handsome specimens. The racemes of small violet-purple blossoms form large panicles at the summit of the stem, and last a long time in perfection. Besides these there are several from the Mexican region which are well adapted for training to pillars in summer, but as they are too tender to stand unprotected in winter they should be cut down and the surface covered with some light material. Amongst these may be mentioned the beautiful Lophospermum scandens, with its deep rose Gloxinia-like flowers. Rhodochiton volubile, one of the finest greenhouse creepers we have, with its large pink calyx and very dark red corolla, borne in great profusion the greater part of the year. Maurandya Barclayana, semperflorens and antirrhiniflora, and many other well known garden plants, are also from this rich region. *G.*

PLANT PORTRAITS.

BEGONIA MOONLIGHT, *Floral Magazine*, t. 293.—One of Col. Clarke's hybrids, and a very beautiful one, its fine flowering habit and numerous white flowers, together with its neat foliage rendering it an unusually attractive plant for market purposes.

BIGNONIA SAMBUCINA, Kunth, *Revue Horticole*, 1878, 50, with tab.—Lovers of hardy shrubs should be on the look-out for Bignonia sambucina. All that we know of it is derived from M. Carrière's figure and description in the *Revue Horticole*, from which it appears to be a shrub (not a climber) with impari-pinnate leaves, linear-lanceolate pinnæ, and terminal panicles of large clear yellow flowers. The plant is a native of Mexico, and is stated to have stood in the open air all the winter near Paris, and to have flowered in the month of August. We shall await the arrival of this fine shrub with interest.

BILBERGIA PALLESCENS, Koch and Bouché, *Botanical Magazine*, t. 6342.—A species with leaves dark green and spotted on the upper surface, paler beneath, with transverse bars. Bracts lanceolate, of a beautiful rose-pink. Spike pendulous, flowers greenish white, ovary deeply grooved. A beautiful plant, differing from the plant figured in *Belgique Horticole*, 1865, p. 65, only in the nodding not erect spike. Native of Central Brazil, flowered at Kew.

CROSSANDRA GUINEENSIS, Nees, *Botanical Magazine*, t. 6346.—A West African Acanthad, introduced by Messrs. Veitch, and having oblong green leaves picked out with golden veins, and short dense spikes of pinkish flowers.

DENDROBIUM SUPERBIENS, Rchb. f., *Floral Magazine*, t. 294.—A beautiful species, lately figured by us at p. 49, vol. ix., from the collection of Mr. B. S. Williams.

ESCHSCHOLTZIAS, *Florist and Pomologist*, tab. 460.—Gorgeous varieties raised by Messrs. Carter from E. californica var. crocea. The variety called Mandarin is specially fine. To the rich saffron of E. crocea it adds a brilliant orange colour on the outer side.

GLADIOLI, NEW : *Floral Magazine*, t. 295-296.—Queen Mary and Sir G. Nares. Two very showy varieties raised by Messrs. Kelway, of Langport, for the description of which we must refer to the magazine in question.

IONE PALEACEA, Lindl., *Botanical Magazine*, t. 6344.—An Assam Orchid with creeping slender rhizome, egg-shaped one-leaved pseudobulbs, leaves strap-shaped, notched at the point, scape racemose, many-flowered from the side of the pseudobulb. Flowers drooping, about 1 inch long ; sepals lanceolate, greenish, from a broad base ; lip heart-shaped, purplish.

IRIS CRETENSIS, Janka, *Botanical Magazine*, t. 6343.—A Mediterranean species with creeping rhizome, linear erect leaves, and lilac-purple flowers, 2½—3 inches long ; the "falls" are veined in the lower half with bright yellow, and furnished with many oblique lines of lilac-purple on a white ground ; the standards purplish. Flowered at Cirencester with Mr. Elwes.

PICOTEES, NEW, *Florist*, Feb., 1878, t. 461.—The varieties figured are Miss Horner, with heavy rose-coloured edge ; and Alice and Zerlina, both heavy purple-edged sorts. All three are exceptionally fine varieties, raised by Mr. Lord, of Todmorden.

PANDANUS UNGUIFER, Hook., *Botanical Magazine*, t. 6347.—A dwarf species native of Sikkim, with a slender prostrate stem, and distichous linear-lanceolate leaves, spiny at the margins. Fruit as large as the fist, like that of a Pine-apple in appearance.

PLEROMA GAYANUM, Triana, *Botanical Magazine*, t. 6345.—A Peruvian Melastomad, with ovate oblong acute serrate hairy leaves, and terminal panicles of white flowers. Introduced into cultivation by Messrs. Veitch.

Notices of Books.

THE new edition of Yarrell's *British Birds*, by Professor Alfred Newton (Van Voorst), has reached its twelfth part. It is a pity that the progress of so excellent a work is so slow. The Editor's notes and additions are valuable from the care he has taken to secure accuracy. The present part is devoted to the history of the starlings, choughs, ravens, crows, rooks, jackdaws, and magpies, illustrated with excellent woodcuts and amusing vignettes. The following account of one way in which garden tallies get lost may be repeated here. Speaking of the sticks used by the daws to build their nests, it is noted that

"The collecting of these sticks is, as may be imagined, a toilsome task, and the birds are not slow to avail themselves of any they can get, as gardeners often find to their cost, for the pegs used to mark their plants are frequently carried off by daws. Denson has recounted (*Mag. Nat. Hist.*, ser. i., vi., p. 397) how, from 1815 to 1818, the old Botanic Garden at Cambridge, situated in the middle of the town, and now the site of the museums and lecture rooms, was thus regularly robbed of its labels, which were subsequently found in the towers and chimneys of the neighbouring buildings—eighteen dozens being taken out of a single chimney on one occasion. They were mostly deal laths, about 9 inches long, and an inch or more broad. A bird would grasp one edgewise in its beak, and if the soil was light it could usually draw it out with but little difficulty, but if otherwise it would pull the label first to one side then to the other ; and either by persevering thus, effect its extraction, or tire itself and leave it."

PUBLICATIONS RECEIVED. — Catalogue of the Flowering Plants and Ferns of Dublin and Wicklow, by David Moore, Ph.D., and A. G. More.—On a Supposed New Species of Ceratozamia, by D. Moore, Ph.D.—Lists of the Mosses and Hepaticæ which are found in the counties of Dublin and Wicklow, by David Moore, Ph.D. — Les Vignes Asiatiques et le Phylloxera, par Alphonse Lavallée. — Sur les Arbres et Arbustes Exotiques récemment introduites en France, par M. Alphonse Lavallée.—Uber Polyembryonie, von Dr. Eduard Strasburger.—Report of the Royal Botanical Garden, Calcutta, 1877—78. —Science Gossip.—All the Year Round.—Bulletin de la Soc. Bot. de France, n. 3, 1877.—Sempervirens —Natural History Journal.—Nuovo Giornale Botanico. — Gartenflora. — Revue Horticole. — Vick's Illustrated Monthly.—Gardener's Monthly. —Nord Deutsches Inseratenblad.—Journal des Roses.—Der Deutsche Garten.—The Herefordshire Pomona, pt. 1.—The Monthly Floral and Fruit Magazine. —American Agriculturist.—Popular Science Review. —Bulletin d'Arboriculture.—Énumération Methodique des Plantes Nouvelles, &c., par André de Vos.

Garden Operations.

KITCHEN GARDEN.

One of the most important matters which still demand attention in this department will be the preparation of the soil for the forthcoming season ; let this operation be proceeded with as speedily as possible whenever opportunities occur, and take advantage of such opportunities as are suitable for dressing those portions of the ground with such materials as they require for their amelioration. For adhesive plots a dressing of wood and coal ashes, with soot intermingled, will form a good compost not only for rendering such land more tractable, but these ingredients will be otherwise beneficial ; the parings of the sides of roads and the scrapings off them likewise make a most valuable compost for dressing almost any kind of land, and particularly that which is inclined to be stiff and unworkable, and we recommend advisedly that this kind of stuff be procured if obtainable. If not already done defer no longer the lifting of Beet and Carrots, also Lettuce, Endive, &c., which is to be removed to frames before severe weather comes. The mildness of this season is plainly indicated in the growth of many subjects in this department, as for instance at this time (October 28) French Beans still remain uninjured, and late Peas are growing on most luxuriantly, although from the want of sun the pods do not fill properly. At dry times let the hoe be run over the surface soil

between the rows of Onions, Spinach, Lettuce, Endive, &c.; and embrace such opportunities likewise for clearing away decayed leaves from the plantations of Broccoli, Brussel Sprouts, Winter Greens, &c. This is an operation which cannot be too rigidly enforced at this season as a means of exposing and inuring such subjects preparatory to more severe weather coming on. The process of laying down Broccoli at this season is commonly pursued by many practical men, and undoubtedly the check the plant sustains by it tends to make it withstand the effects of frost with less injury than otherwise, but on the other hand, it does likewise unquestionably retard and reduce the size of the heads considerably; and therefore it is doubtful, taking all things into consideration, whether sowings of such subjects which are made in the early part of May, do not produce plants which are to be preferred for soils which are very highly enriched, while at the same time this operation is avoided. By this time late Celery should be finally earthed up, as also should Leeks which are grown in trenches.

In the forcing department considerable activity will soon be necessary. Where very forward Asparagus is required a quantity of roots should be lifted. This, of course, is assuming that beds of fermenting material or other means is provided for starting them. Much more heat will be required to induce growth now than by-and-bye; this should therefore be provided. Continue to make sowings of French Beans to come in after for new crops. Sow Mustard and Cress for salading purposes every week or ten days. Attend to stopping and thinning out the leaves on Tomatos, so that the fruit can have the full benefit of sunshine.

MUSHROOM HOUSE.—Keep this place moistened regularly and the heat at about 58°. Introduce roots of Seakale and Rhubarb in quantity to meet the requirements, also Chicory and Endive for blanching. Continue to collect fresh manure for making new Mushroom beds, and make them up without subjecting it to a drying process by fermentation.

In the frame ground Cauliflower and Lettuce plants will need to be hardened as much as possible by being fully exposed every day. The mildness of the season will cause these plants to be very vigorous, particularly early-sown ones; such plants would be benefited by being lifted again and replanted. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

Owing to the exceedingly warm weather we have had of late, or to some other cause, Pears and Apples are keeping very badly, at least such is the case with ourselves, although we have done all we could by way of ventilation to lower the temperature as much as possible, but with the external air standing so high it has not been of much avail. There is therefore a prospect that all late sorts as well will come in much before their time, and the season be a short one, which is much to be regretted, seeing that crops of neither of these esteemed fruits are anywhere overplentiful. All that can be done is to look frequently over the stock and pick out any for immediate use that are showing the least sign of decay, for it is astonishing how soon they transmit the taint to others, and how rapidly it spreads through all with which they come in contact or which lie near them. Perfect dryness of the atmosphere is one of the essentials towards keeping both Apples and Pears, and next to that an equable degree of heat, and the lower this can be maintained above 35° the better and more regular will the fruit ripen. Where it is in contemplation to plant young trees or to take in hand the renovation of old Vines, it is high time to set about the latter operation and to send in orders to nurserymen to insure an early delivery of whatever sorts may be required. As many may be in doubt which to select out of the great numbers now enumerated in most catalogues, it may be well for the guidance of such to give a short descriptive list of those I know and have proved to be good and well adapted for most soils and situations. Taking Apples first in the order in which they come into use, the Keswick Codlin is one of the very best for culinary purposes, and seldom if ever fails in producing a crop. Next in merit to this is Lord Suffield, which is a great favourite with all who know it, and is highly deserving a place in any garden, however small its extent. For table or dessert purposes there are none equal to Kerry Pippin, and to succeed this the Ribston and Cox's Orange Pippin, both of which are first-class in appearance and quality and most excellent keepers. To these should be added Blenheim Orange and Waltham Abbey Seedlings, and these varieties will last in use till the end of February, when the following will come in and continue the supply as long as Apples can be kept. Court Pendu-plat, Cockle Pippin, Dutch Mignonne, and Sturmer Pippin for dessert; and Dumelow's Seedling, Herefordshire Pearmain, Alfriston, Sturmer Pippin, and Northern Greening for cooking. Among Pears the best for early ripening are Beurré Giffard, Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Superfin, Doyenné du Comice, Marie Louise, Louise Bonne, and Beurré Bachelier, which will carry the supply up to near Christmas; when Glou Morceau, Bergamotte Esperen, and Joséphine de Malines are the only real good ones for late use. To grow the above sorts, few though they be in number, will be found far more satisfactory where space is limited than to have a large collection, many of which are sure to turn out disappointing. The same may be said of Peaches and Nectarines and all other kinds of fruit that take a long time to establish, therefore I shall only enumerate those that may be entirely depended on. The best Peaches to grow are Early Louise—for the first to ripen, Royal George, Dr. Hogg, Grosse Mignonne, Alexandra, Bellegarde, Violette Hâtive, Goshawk, Barrington, and Walburton Admirable, the two latter ripening late, and both being of first-rate quality. Among Nectarines Lord Napier is a most valuable variety, it being very early, large in size, of fine colour and most exquisite flavour. Elruge succeeds this, and for late sorts Humboldt and Pitmaston Orange are the best. In Apricots none equal Moorpark in quality, but the trees of this kind are unfortunately subject to having their branches die off, which the Hemskirke and Peach, both very fine kinds, are not so liable to, and therefore should be grown in preference. The best Cherries for dessert purposes are Black Eagle, Knight's Early Black, and Tartarian; and of the white kinds Governor Wood and Elton; while for cooking purposes none surpass the May Duke and Morello. As regards dessert Plums Green Gage stands first, then come Kirke's, Jefferson, Coe's Golden Drop, Reine Claude de Bavay, and Reine Claude Violette; and for cooking Prince Engelbert, Prince of Wales, Victoria, Pond's Seedling, and Belle de Septembre. All the foregoing are good growers, free bearing, and such as will succeed in almost any garden. Bush fruit not being so important, it will be hardly worth while occupying space to give a list, or to remark on them further than to say that deep trenching should precede the planting of any of them. *J. Shepard.*

FRUIT HOUSES.

PINES.—Let the same temperatures as were indicated in a former Calendar for these plants continue in force as long as the weather is externally temperate and favourable for vegetation proceeding without having recourse to much artificial aid for the purpose. As soon, however, as a change in this respect takes place and severe conditions prevail, it will be advisable to let the existing temperatures decline gradually until they recede to the minimum state for winter work, namely, to about 57° for suckers, about 60° for successional plants, and from 65° to 70° for fruiting plants. If the nature of the weather is such as to necessitate hard firing see that more moisture in the way of sprinkling available surfaces in the houses is used, so as to prevent too much aridity in the atmosphere. Take advantage of suitable occasions for making any alterations or rearragements which may be desirable among the plants. Let all those which are fruiting be placed where plenty of heat can be given them, and where every ray of sunshine can reach them; and all other plants should likewise be so placed as to obtain the benefit which proceeds from having the full power of this almost indispensable element when it exists at this dull period of the year. The efficiency of hot water as a heating medium has in many places superseded the use of leaves for bottom-heat purposes altogether. There are, however, some places amongst others where this old practice is in some degree continued, and for suckers and successional plants where only a gentle degree of heat at the roots is required, they can be made available. When this is the case we advise their being procured in as dry a state as possible, and at the time the beds are formed they should be well trodden down and afterwards covered with about a foot or 15 inches of tan for plunging in and to give a neat appearance. If circumstances will admit, the best plan to adopt with reference to beds of this description is to allow them to remain until such time as the heat has become steady and regular before plunging the plants. If this cannot be done, be wary of having too much heat, and to avoid the consequences which naturally result from this cause merely stand the pots on the surface of the bed until its power is reduced. For the sake of economy and other considerations of equal moment, avoid the use of fire-heat as far as practicable, and in all cases where the structures will admit of its being done, cover up with mats or similar materials whenever adverse conditions prevail. *G. T. Miles, Wycombe Abbey.*

FIGS.—The early pot Figs from which fruit is to be gathered about the end of April, or early in May, will now demand immediate attention, in order that everything may be ready for a start in November. Potting, or top-dressing, having been performed in September, the lights, if movable, should be taken off the house and well washed with soap and water, the walls scalded, and washed with quick-lime and sulphur, ready for the reception of the trees; and, as the Fig is very liable to the attacks of red-spider and scale during the drying or ripening process, great care must be exercised in the thorough cleansing of the wood with strong soap-water before the trees are painted with a composition similar to that recommended for Peaches. When washing, a hard brush may be used for the old wood, but to avoid injury to the young fruit the shoots of the current year will require more careful treatment. Succession houses in which the trees are planted out may be kept dry and cool for some time to come, providing they are free from insects, but if scale has gained possession pruning and cleansing should be followed up without delay. Get all root-pruning, lifting, and rearrangement finished, always bearing in mind that Figs under artificial treatment, when confined to a limited space, are most productive and manageable under restricted root area, and few subjects are more tantalising than a gross barren tree; it is therefore well to err on the side of severe rather than light root-pruning. The fan system of training being generally adopted, branch-pruning is more a system of thinning out the shoots that have reached the extent of the trellis than shortening back to make room for the young successional growths, which should be evenly placed, with room for extension over every part of the trellis. In lean-to houses it is a good plan to plant against the back wall, to train to the highest point, and thence downwards to the front ventilators on the south side. When treated in this way the check upon the sap under the ridge, combined with downward training, produces a marked effect on strong growing kinds, and Brown Turkey, one of the best for forcing, breaks into numerous short-jointed growths that require very little stopping, and being so favourably placed for ripening they cannot, under fair treatment, fail to produce an abundance of fine Figs. *W. Coleman.*

CUCUMBERS.—An almost sudden change in the weather during the last week, from bright warm sunshine and mild nights to wet and sunless days, and a chilling north-western wind and a low temperature at night, renders the application of brisk firing absolutely necessary in order to maintain a moderately growing temperature of from 70° to 75° by day with fire, running up 5° or 10° with sun, and 60° to 65° at night, with a bottom-heat of from 75° to 80° or 85°. Air must be given cautiously—not to lower, but to prevent the temperature of the house from getting too high—admitting it moreover, progressively as the temperature of the house increases, and so as to avoid chilling draughts, which would be injurious to the foliage and health of the plants. The roots should be watered regularly and thoroughly, when they require it, with diluted liquid-manure of the same temperature as the material in which they are growing, for, as all practical gardeners know, a superabundance at one time cannot compensate for a deficiency at another. Let the application of atmospheric moisture be in accordance with the temperature and state of the house in general, not forgetting that important element—the weather, by which gardeners of all people have so much to shape their plans of operation. However, both an arid and an over-humid atmosphere must be avoided, otherwise spider or mildew will, as surely as night follows day, attack the plants; hence the desirability of adopting the "happy medium." Guard against canker by putting a little new soot and lime around but not close to the stems of the plants, unless they are affected with that disease, which will absorb any superabundance of moisture that would otherwise settle on them. *H. W. Ward, Longford Castle Gardens.*

A MONSTER PEAR TREE.—A Forres correspondent of the *Journal of Forestry* thus describes a Pear tree of enormous size to be seen in the village of Garmouth:—"It belongs to Mr. James Spence, is known to be over 100 years old, and is of the following dimensions:—Height, about 40 feet; circumference of trunk, 5 feet; diameter space underneath the branches, no less than 14 yards, which gives the enormous circumference of 126 feet. The huge branches are supported by means of planks running along the top of eleven immense wooden pillars. The Pears are not large, but are very sweet, and are known by the name of 'Golden Knot' or 'Golden Ball.' I counted a single cluster, which numbered no less than 300. The happy owner of this, perhaps the largest and most prolific tree of its kind in Great Britain, informed me that three years ago he had the curiosity to count the Pears it yielded. When gathered they then reached the enormous number of 28,600. At that time a large portion of the tree did not yield any fruit, and since then very little has grown on it. None of the Pears are, as yet, taken off this season. They hang in clusters like Grapes—a prettier sight one could not imagine, and it is confidently expected that this season they will number considerably over 50,000! Visitors to Garmouth are freely admitted to Mr. Spence's garden, where the tree is to be seen, which is well worthy of a visit. I should be curious to know if its equal is to be found anywhere?"

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 2, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 4	Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Nov. 5	Scottish Arboricultural Society's General Meeting
WEDNESDAY,	Nov. 6	Sale of Roses, Camellias, Bulbs, &c., at Stevens' Rooms.
		Meeting of the Linnean Society, at 8 P.M.
		Sale of Established Orchids at Stevens' Rooms
THURSDAY,	Nov. 7	Sale of Nursery Stock at the American Nursery, Leytonstone, by Protheroe & Morris
FRIDAY,	Nov. 8	Sale of Rare Lilies, at Stevens' Rooms
SATURDAY,	Nov 9	Sale of Roses, Shrubs, Bulbs, &c., at Stevens' Rooms

THE first number of the *Transactions of the Massachusetts Horticultural Society* for 1878 contains some interesting essays; one bearing the title "RIPENING AND MARKETING PEARS" is particularly so. The Pear stands next to the Apple in the list of the most valuable fruits in America, and its cultivation is rapidly increasing, while with many fruit-growers there is a disposition to lessen the production of Apples, owing to their uncertainty and tendency to over-production in years of plenty. The author of the essay states that the Pear on suitable soil is surer and more productive, taking one year with another, than Apples, and can be produced cheaper by the barrel. On the other hand, the proper ripening and marketing of the Pear is attended with more difficulty. A good Pear may be ripened so as to be solid, juicy, and sweet, with a good rich colour to its skin; or it may be earthy, insipid, and rotten at the core; or, again, it may be shrivelled, sour, and unattractive; and these different conditions may all be obtained in the same season, and from fruit grown on the same tree—so says our author. He assumes that nearly all Pear growers agree that all kinds of Pears should be picked while green, and ripened in the house, but at just what time they should be picked, and just how they should be handled to ripen them, are subjects on which there is much diversity of opinion.

His recommendations are briefly as follows:—Summer and early autumn Pears should be picked just before they begin to turn, and when they are nearly grown; should be handled with great care, to avoid bruising, and should be placed in barrels or boxes in a room or cellar, where the temperature may be kept at about 70° and a moderate degree of moisture maintained. A very dry air absorbs moisture and aroma from the fruit. After being kept under such conditions for a few days they will begin to turn, and some of them will mellow, and be ready for use. The barrels or heaps should not contain too large a bulk, or there will be an undue generation of internal heat and consequent fermentation. When one has the facilities, the colour, and possibly the flavour, may be improved by spreading them on shelves between old newspapers. This mode of ripening, in a room where an even temperature and the right degree of moisture can be kept, "seems to give" the most satisfactory results of any method known to the author. He adds, the manner in which early Pears thus treated will colour is truly wonderful.

To lengthen the season of the ripening of main crop summer Pears, two or more pickings are recommended, with an interval of several weeks between the first and the last pickings. The largest and ripest should be picked first; sometimes the fruit on one side of a tree is forwarder than on the other. The greener the fruit is gathered the higher the temperature, and the more humid the atmosphere required to ripen them without shrivelling. Most summer and autumn Pears may be kept best by leaving them on the trees as long as they will hang and keep green. Keeping Pears on ice checks ripening, but induces decay and destroys vitality. Late autumn and winter Pears should be left on the trees until hard frost causes them to [begin to] fall; then they should be carefully picked, sorted and packed in clean barrels, and stored where the temperature can be kept as near 40° as possible until the season of ripening has arrived, when they should be placed between woollen blankets in a room where an even temperature of as near 70° as possible can be maintained, and they will soon ripen like summer Pears. Fruit ripened at so low a temperature that the tendency to saccharine fermentation is destroyed, instead of being flavoured, are dry and tasteless.

With regard to the marketing of Pears for long distances, especially when facilities for packing are not good, they should be sent to a reliable fruit dealer while yet hard. Pears sold in this way should be carefully sorted, discarding all ripe or wormy ones, as well as those which are deformed and undersized, and they should be packed in clean barrels, with a layer of choice ones laid on their side in the bottom of the barrel; then fill in a few carefully and shake down; then more and shake again, and when full, after being thoroughly shaken, press the head in, drive the hoops, and nail the head in, and line it with pieces of old hoops or green withes; then turn the barrel over and mark the name of the person to whom it is to be shipped, as well as the kind and quality. If shipped before cold weather, or if nearly ripe, the barrel should have holes bored in it, to admit a circulation of air and prevent the fruit from heating and rotting. Nearly ripe Pears may be safely packed in boxes 8 inches deep, with the battens at the bottom three-fourths of an inch apart. Ripe Pears should be packed in boxes not more than 4 inches deep. Baskets should on no account be used.

Those who took part in the discussion which followed agreed in the main with the recommendations set forth above. One speaker observed that different varieties require different degrees of moisture and heat to ripen them according to the firmness of the skin, the texture of the flesh, and the natural activity of the juices. Thus some varieties of the Pear will ripen at a low temperature and in a comparatively dry atmosphere, while others, like the Easter Beurré, are improved by a warm and humid air. Several speakers declared that summer Pears ripened on the tree were generally inferior, "because the process of ripening on the tree, which is the natural one, seems to act upon the fruit for the benefit of the seed, as it tends to the formation of woody fibre and farina." There was considerable diversity of opinion as to the merits of the Pear Vicar of Winkfield, though the majority seemed to admit that it is first-class on favourable soils.

—— ROSA RUGOSA *.—This is a most striking and beautiful Rose, albeit it is one which would probably find but little favour at the hands of the National Rose Society. It is a Japanese shrub of moderate size, 3—4 feet in height, the branches very densely beset with straight prickles of unequal size, the leaflets elliptical obtuse, serrate, deep green, and rugose above, villous beneath. The flowers are solitary, 3½—4 inches in diameter, rose-coloured or pure white. The sepals are lanceolate acuminate, sometimes slightly dilated at the tip. When the flower has fallen the fruit ripens into subglobose berry-like haws, which are glabrous or with a few short bristles, and of a lovely coral-red colour. Out of flower this Rose is effective and striking, with its bristly stems and bold rugose foliage; in flower few Roses surpass it for beauty and continuity of bloom. In fruit it has scarcely a rival in its large glossy berries, if we may so call them familiarly. In Japan we are told it grows wild in sandy places by the coast, and we are further told that it has been cultivated in China as well as in Japan from time immemorial, and that numerous varieties occur as to colour, but no double one, on which account our rosarians, we fear, would have but a poor opinion of its merits. Our specimen (fig. 98) was procured from Mr. WARE'S nursery at Tottenham. On his rockery this Rose in its red and white varieties has been in flower all the summer, while at the present time the fruits are exceedingly striking. We believe this Rose to be so perfectly hardy that even the timid ones who dread—and not altogether unreasonably—the effects of the next severe winter may plant it and sleep in peace.

* *Rosa rugosa*, Thunberg, Fl. Japon., p. 213; Siebold and Zuccarini, Flora Japonica (1835), p. 66, t. 28; syn. *Rosa ferox*, Laur., Aiton, Bot. Reg., 420, &c. *Rosa kamtschatica*, β *ferox*, Seringe. *Rosa Regeliana*, Lind. et André, Illust. Hortic. (1871), p. 11, t. 47.

—— THE ELECTRIC LIGHT.—This most brilliant light is produced in consequence of the resistance to the passage of the electric fluid afforded by carbon or other substance. The great difficulty in its practical use hitherto has consisted in maintaining the two carbon points in sufficiently close juxtaposition, for the one is destroyed much sooner than the other, and the aid of machinery is required to keep continuously the two sufficiently near one to the other. We are not aware what are the chemical properties of this light, nor whether any experiments have been made as to its effect on plants, but we trust experiments will soon be made in this direction, for should it be proved that the electric light could be used for forcing operations what a revolution would be made in our gardens, what a saving of time effected. We require first of all a few laboratory experiments to ascertain the fact—that done satisfactorily, all the rest is a question of expense and time.

—— BERKELEY PORTRAIT. — On Thursday, November 7, at 8 P.M., at the first meeting for the session of the Linnean Society, the portrait of this most highly respected botanist and horticulturist will be presented to the Society, on behalf of the subscribers, by Sir JOSEPH HOOKER, Pres. R.S. No one in our times has deserved a similar compliment more than our revered friend, whose whole life has been spent in the promotion of scientific research and of its useful applications. Outstanding promises of subscription should be fulfilled at once. Dr. HOGG, 99, St. George's Road, Pimlico, is treasurer, and Dr. MASTERS, 41, Wellington Street, Covent Garden, secretary to the committee.

—— THE GARDEN RAILINGS, THAMES EMBANKMENT.—At a recent meeting of the Metropolitan Board of Works it was stated that the damage done to these railings had amounted, for some time past, to £200 a month, or £1200 a year! The damage is done by boys, who break off the elaborate castings by wholesale.

—— THE COMING WINTER.—There was a slight fall of snow in the environs of London on the morning of the 30th, and snow has also fallen in Scotland, at Folkstone, and elsewhere. From various quarters the warning note is struck. "Come and see my garden before it is ruined by a severe winter," is an invitation we have had from several persons of late. There seems indeed to be a general opinion that a severe winter is due, and that, should it come, it will play havoc with a number of half-hardy things which the mildness of recent winters has tempted us to plant out. On the other hand, we hear some people say that we have entered a new cycle of fine winters, and have nothing to fear for some years. Of course all this is mere fancy. The wise man will be prepared to meet the emergency, so far as he can, by such protection and shelter as he can adopt—and if, after all possible precaution has been taken, fell winter destroys some of our favourites, we are sure that all plant lovers, however great their regret, will say, "t'was better to have loved and lost than not to have loved at all." The optimist view of the situation is to remember that we have had a great deal of pleasure, and that the winter, if it is to be severe, will afford us valuable lessons of experience and resignation; besides, think of the plague of slugs and snails we have suffered from this season!

—— SCOTTISH ARBORICULTURAL SOCIETY.—The twenty-fifth annual general meeting of this Society will be held in the rooms at the Royal Botanic Garden, Inverleith Row, Edinburgh, on Tuesday, November 5, at 11 A.M., Prof. JOHN HUTTON



FIG. 98.—ROSA RUGOSA: NAT. SIZE. (SEE P. 564.)

BALFOUR, Vice-President, in the chair. In addition to the transaction of business of a routine character, a paper will be read on "The effect of the last three wet seasons on sylvan vegetation, as shown by the decay and sickly appearance of Spruce all over the country," by Mr. C. S. FRANCE, Overseer, Penicuik; and the following subjects selected at the last annual meeting will be discussed:—1. "What is the best course of study to be followed by students of forestry in this country?" Discussion to be opened by Mr. M'CORQUODALE, Forester and General Surveyor, Perth. 2. "How to ascertain accurately by measurement the annual growth of living trees." Discussion to be opened by Mr. GORRIE, of Rait Lodge, Edinburgh. The anniversary dinner of the Society will take place in Robertson's Albert Hotel, 25, Hanover Street, at 4 P.M. precisely, when Mr. HUTCHISON, of Carlowrie, will take the chair.

—— SERIOUS DEVASTATION IN RUSSIAN CORNFIELDS.—From communications that have been made to the Foreign Office by Mr. Consul CARRUTHERS, we learn that in July last immense swarms of beetles, known as Anisophia austriaca, appeared in various localities about 60 miles north of Taganrog, one of the most important Wheat producing districts in Russia, and committed great devastation among the corn crops. Writing early in September Mr. CARRUTHERS states that the beetles first appeared in those parts in 1873, but attracted little attention until within the last year or two, when their number had so vastly increased and the devastation caused became so serious, that strenuous measures will have to be adopted to exterminate them. At present very little appears to be known of the natural history of these destructive pests, which are stated to have spread with astonishing rapidity through various districts in the governments of Kharkoff, Poltava, Ekaterinoslaff, Kherson, and in Bessarabia; but the Consul was informed that they attack the green ears of growing corn, perforate each grain, and extract all the moisture; and having perpetrated their ravages they deposit their eggs underground at a depth of from 3 to 4 inches in the same locality, giving preference to a dark rich soil. The evil is a serious and a growing one, but it

does not appear that any general system has yet been adopted in the way of extermination.

—— SEAFORTHIA ELEGANS FLOWERING.—A large specimen of Seaforthia elegans, some 25 feet high, is now in flower in the cool part of the conservatory in the Royal Botanic Society's Garden, Regent's Park.

—— ANOTHER PARK FOR LONDON.—On Monday night a crowded meeting of the inhabitants of Paddington was held at the Vestry Hall for the purpose of securing an open space of ground in the north-west portion of Paddington, situated between Portsdown Road, Shirland Road, Kilburn Park Road, and Sutherland Gardens, as a place of recreation for the population of the adjacent neighbourhood, which consists of about 100,000 persons, chiefly of the working classes. The chair was taken by Sir THOMAS CHAMBERS, Q.C., M.P., and resolutions were passed declaring the necessity for open spaces, and memorialising the Metropolitan Board of Works for assistance in securing the spot referred to, which is now advertised to be let for building purposes.

—— APHELANDRA CRISTATA at Kew has lately been gorgeous. So far as we know it was the first introduced, having been in cultivation nearly 150 years, and still it is one of the best. The above plant is a reminder of the great beauty of more recent kinds, sometimes acknowledged, but far too rarely. A. Porteana, we believe, is the one grown some time ago at Gunnersbury Park with wonderfully fine effect. Several others are worth attention, as, for instance, those with variegated and coloured foliage. A. Sinitzini has ample broad leaves, the principal veins pale and nearly white. A. nitens has lustrous bronzy foliage, and in A. fascinator the veins are white and sparkling. The leaves of this separate so readily as to require care, and each one will make a plant in a short time. All have splendid flowers, and the last two look well when planted several together in a pan.

—— THE RIGHT HON. A. S. AYRTON, formerly First Commissioner of Works, is now a candidate for the representation of Northampton, and in a speech he made there lately he is reported to have said :—

"When I accepted that office I at once asserted my opinion that the duty of the Commissioner was not to embark in all sorts of fantastical ideas about art, and spend the public money as if he were a millionnaire, or as if he were disposing of it according to his own ideas, but was to spend it as a trustee for the people ; to see that the right sort of people were employed, and, when they were employed, to exact from them a full and satisfactory discharge of their duty. Of course I gave great offence, and unfortunately I found that this department had hitherto been conducted on the singular principle that the great duty of the First Commissioner of Works was never to take upon himself any responsibility, but that he should pay some eminent persons acquainted with the sciences and arts, and put the responsibility upon them ; so that the First Commissioner had nothing to do but to refer to them when any question arose. I objected to that. I said, 'No ; the responsibility rests with me, and I will perform my duty.'"

Very conscientious no doubt, but we trust that in future some one with an equal sense of duty, but of a more enlightened character, will fill the office of First Commissioner.

—— PHOSPHATES FOR TURNIPS.—The *Proceedings of the Aberdeenshire Agricultural Association* for 1877 contain a report of the experiments carried on by the Association to test the influence of various manures on the growth of Turnips. The experiments were conducted under the superintendence of Mr. THOMAS JAMIESON, who gives a general summary of the results attained. Our space will not allow us to follow Mr. JAMIESON very closely, but we may briefly indicate some of the principal results at which he has arrived. The experiments of this and of preceding seasons show that the Turnip crop is decidedly benefited by phosphates of lime, whether of mineral or of animal origin ; that there is no very great difference as regards effect between soluble and insoluble phosphates ; that nitrogenous manures alone have little effect on Turnips, but when combined with insoluble phosphates they increase the crop : that if combined with soluble phosphates the increase is not noted ; that it is immaterial whether nitrate of soda or sulphate of ammonia be used to supply the requisite nitrogen ; that fineness of division of the phosphatic manure seems nearly as effective in assisting the braird and increasing the crop as the addition of nitrogenous manures. Insoluble phosphates ground to an impalpable powder are therefore the most economical phosphatic manure for Turnips. The results of the experiments made in 1877 confirmed those of 1876. Soluble phosphates have the advantage over the insoluble ones of greater distributive powers and greater assistance to the braird. The application of nitrogenous manure to Turnips is shown to increase the proportion of water, to the detriment of the solid nourishing matter. Soluble phosphates have a tendency to decrease, insoluble phosphates to increase, the albuminoid or flesh-forming matter ; the decrease in albuminoids caused by the soluble phosphates is accompanied by an increase in sugar, usually regarded as a heat producer and fat former. As the phosphates added to the soil have not been exhausted, it is proposed to continue the experiments for a third year, adding no further phosphatic or nitrogenous manure. The following table, representing the average composition of Turnips in 1000 parts, gives in a concise form the general results of the experiments heretofore conducted :—

AVERAGE COMPOSITION OF TURNIPS.

I. Manured with Phosphates and Nitrogen.

Useless	Water	910	932
	Indigestible fibre	22	
Useful	Albuminoids	8	68
	Sugar	32	
	Starch, oil, &c.	22	
	Ash	6	
		1000	

II. Manured with Phosphates Only.

		Insoluble.			Soluble.		
		Bone ash.		Coprolite.	Bone Ash.	Coprolite.	
Useless	Water	910	922	905	910	905	915
	Fibre	12		11	10	10	
Useful	Albuminoids	10	78	10	7	8	85
	Sugar	34		38	42	46	
	Starch, oil ..	27		29	24	24	
	Ash ..	7		7	7	7	
		1000		1000	1000	1000	

—— SALVIA PATENS.—There is no flower so grand in the autumn, especially in such an autumn as this present one, as the blue Salvia. It is not merely that it blooms late and freely, so late that the frosts too often cut it down while yet in all its beauty, but it is specially glorious because of the intensity of colour, a rich brilliant blue, which has no other parallel in garden flowers. The Lithospermum and Gentian in spring, and the Delphinium and Monkshood in summer give rich tints, but none have that intense hue which marks the Salvia patens in the autumn as the most striking of outdoor plants. The flowers are highly attractive to the bees and other honey-gathering insects, and, like the Scarlet Runners mentioned in another column, are pierced, as it were, surreptitiously, for their sweets at the sides, and not entered through the mouth. To be seen in all its beauty this Salvia should be grown in a mass.

—— THE INCREASING LOVE OF FLOWERS AND PLANTS is one of the favourable signs of the times, the more so, as it is strikingly manifest among the middle and lower classes. My Lord Duke with his acres of flower-garden, his carpet-beds, and all the rest of it, often cares but little for his plants. So long as a display is made, and so long as the dinner-table is "decorated" suitably, and the dessert-table duly supplied, the lord of many acres is satisfied. As for any real fancy for, still less knowledge of, plants, they are not at all general among the class we allude to. There are exceptions, of course—not unfrequent ones either, we are glad to say—but still, as a rule, it is among the middle and lower classes that a real love of plants for their own sake is most obvious. We have opportunities of judging of this in travelling about the country, and noting the large number of nursery establishments round about our large towns—nurseries that one never hears of, but which yet obviously do a large business. Their proprietors do not exhibit, neither do they advertise, their names are not to be found in the garden Directories, they take no part in the meetings of the societies if they even attend them. The consequence is that, except among their own connection, they are unknown ; and yet when perchance one discovers them, pays them a visit, or looks over the hedge, it is clear that the trade they do is large. Many, of course, are market growers, turning their attention to certain specialities, and "doing" them in a manner which might make a duke's gardener burn with envy. It is from such establishments that proceed the van-loads of superbly-grown Pelargoniums, of Fuchsias, of Mignonette, and what-not, which find their way to that great flower market of whose very existence ninety-nine out of a hundred average Londoners are ignorant. Yet this is the source whence their balconies and windows are mainly supplied. Then there seems to be yet another grade of nursery which one sees—a sort of hybrid between a market garden and a nursery proper. Some establishments of this character near Lea Bridge may be taken as illustrations. The quarters lately were full of popular herbaceous plants, of Veronicas, of Antirrhinums, of Marvel of Peru, of Red Valerian, of "Old Man," and such-like popular plants. Hither resort the enterprising "costers" to load their barrows with these plants, all "a-blowin' and a-growin'"—plants destined to give such real pleasure and enjoyment in an otherwise dreary, comfortless home. The good that is thus effected in this quiet way is too great and too profound to be measured by any monetary standard, else we might be disposed to comment on the large capital embarked in a branch of the horticultural trade which, as we have seen, keeps aloof from those ordinary modes of publicity essential to establishments of greater pretensions.

—— ORCHIDS IN BLOOM.—The following Orchids were in bloom on October 25, in Mr. B. S. WILLIAMS' nursery at Holloway :—

Odontoglossum Warscewiczii (rare)
Phalænopsis Cornu-cervi
Dendrobium bigibbum
,, ,, album (new)
Cattleya exoniensis, superb variety
Dendrobium formosum gigan-teum, from three to six blooms on a spike
,, superbiens (new)
,, chrysanthum
Oncidium tigrinum
,, flexuosum
,, crispum
,, Rogersii (true)
,, vernicosum (var.)
Lælia Schilleriana
Lycaste Skinneri
Pleione lagenaria
,, maculata
,, Wallichiana
Maxillaria nigrescens
Maxil'aria picta
Cyrtochilum maculatum
Odontoglossum Lindleyanum
Pleione concolor
Sophronitis cernua
,, grandiflora
Odontoglossum Rossii majus
Saccolabium Blumei
Maxillaria venusta
Odontoglossum grande
Cypripedium Harrisianum
,, Crossianum
,, barbatum
,, ,, purpureum
,, niveum
Cymbidium Mastersii
Calanthe Veitchii
Cypripedium insigne
Vanda tricolor irsignis
,, ,, superba
Restrepia antennifera
Cypripedium venustum

—— JACARANDA MIMOSÆFOLIA we noticed in use at Battersea Park this year with good effect in a mixed bed. It has the most graceful Fern-like leaves, and though known to the majority of people only as an inmate of the stove, it grows freely out-of-doors. Cuttings will strike, though no doubt it is best obtained from seed, which we noticed were offered in a Continental catalogue last year. Galactites tomentosa is another plant worthy of more extended culture. It is much like a small edition of the Virgin's Thistle (Silybum marianum), and came up self-sown from plants of last year received from Mr. BARR. Several plants are about the bases of the "mountains" covered with perpetual snow, in the shape of Antennaria.

—— THE EATON ROAD AND QUEEN'S PARK NURSERIES, CHESTER.—We are informed that the stock of trees, plants, &c., in the Eaton Road and Queen's Park Nurseries, Chester, formerly belonging to Mr. GEORGE CHIVAS and Messrs. CHIVAS & WEAVER, and latterly to Messrs. RUSH & YEATS, has passed into the hands of Messrs. JAMES DICKSON & SONS, Newton Nurseries, Chester.

—— ARBUTUS UNEDO VAR. CROOMII is now so beautiful at Kew that we cannot refrain from making a special note. It is so distinct in general appearance that, without examination, little doubt would be entertained of its being a distinct species. The branches are very stout, of conspicuous red colour, and with larger leaves than in the species, and different also in form, having greatest breadth towards the apex. The flowers are quite half as large again, and perhaps more profuse ; the deep crimson blush with which each bell is suffused on the exposed side makes them very beautiful. Cut branches are extremely elegant, and last a long time. A. Unedo —the Strawberry tree—so fine on the Lakes of Kil-

larney, is this year more heavily laden with fruit than usual.

—— Influence of Light on Growth.—The little heart-shaped leafy scales or "prothallia," which are the first products in the germination of Ferns, produce, as is well known, their roots and the true reproductive organs on their under-surface; and that this position is connected with the absence of light has been recently shown by M. Leitgeb, who by causing the prothallium to grow vertically, and by causing the light to fall now on one side, now on another, established the fact that the roots and reproductive organs are always formed on the side least illuminated.

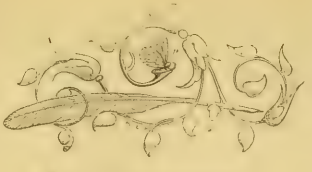
—— The Chrysanthemum Shows. — The Temple Chrysanthemums are opening very rapidly, and visitors will find them in excellent condition next week. Mr. Newton has grown a fine lot of plants, and the display promises to do him great credit. At Slough Mr. Turner has made preparations for an even finer show than usual, and next week will see his flowers also opening in capital form.

—— The Liverpool Chrysanthemum and Fruit Show will be held in George's Hall, Liverpool, on Wednesday, November 20, when the "Liverpool Gardeners'" prize of ten guineas (open to all England), for the best twenty-four incurved cut blooms, will be duly contested for. Exhibitors in this class are not eligible to compete for any of the society's prizes.

—— Injurious Insects.—The Report for 1878 of Observations of Injurious Insects is in course of preparation for the press, and we are requested to state that intending contributors will oblige by sending any observations relative to this subject before the end of November to the Rev. T. A. Preston, Marlborough; E. A. Fitch, Esq., Maldon, Essex; or Miss E. Ormerod, Spring Grove, Isleworth.

—— Public Parks and Gardens.—At a meeting of the Social Science Congress at Cheltenham on Tuesday last, a long discussion ensued on a paper on "Public Parks and Gardens," read by Miss Vernon. The writer, as quoted in the *Times*, dwelt upon the importance in large towns of having adequate public parks and gardens, not only as a method of controlling the effects arising from density of population, but as providing places of health-giving recreation. The Legislature, she remarked, had already granted every facility to urban authorities to acquire land for such purposes. A similar power was vested in the Metropolitan Board of Works, and she recommended that an Act should be passed enabling owners of open spaces—such as squares in towns—to give them into the hands of the local authorities for certain periods, such as the months of August and September. In addition to parks, Miss Vernon held that great good would result from towns possessing small open spaces planted with hardy trees and flowers, and laid out with grass and gravel. Such places would enable the poor to enjoy the fresh air denied them in their squalid homes, and would enable children to indulge in healthful play apart from the contamination of the streets. These suggestions were cordially accepted with some modifications by the different speakers who followed. Paris, it was generally admitted, was better off than London, but that was due mainly to the difference of climate and of Government. The conclusion arrived at was that vast benefits might easily be conferred on London were more trees planted along the broad streets, were spaces such as Lincoln's Inn Fields utilised instead of being enclosed, and the old, unused churchyards planted and thrown open. The following resolution was adopted:—"That the Council of the Association be asked to consider what should be done for the better administration and care of the gardens and public places of the metropolis and large towns, so as to bring their administration and condition up that displayed in the metropolis of France."

—— The Education of Gardeners.—We are informed that a Mutual Improvement Society has been established in the under-gardener's lodge, at Lambton Castle, Durham, with Mr. J. A. Balmer as honorary secretary.



Home Correspondence.

Hardiness of Plants.—The warning note your correspondent, the Rev. C. W. Dod, has sounded with regard to trusting out certain plants in winter is well timed, but there can be no question that many which are now taken up and housed would be much better left in the ground. Even in very severe winters it is surprising what a slight mulching of leaf soil will do in rendering things safe although the tops may be exposed to the inclemency of the weather. It is with them as with us, keep the body warm and the extremities will take care of themselves. Rather than take up bulbs and tubers such as Ixias, Gladiolus, Tritonia aurea, and Salvia patens, it is far better to protect where they stand, unless in cases as where the soil is wet and heavy and the circumstances particularly unfavourable. Nature's way of keeping the roots of plants secure is by scattering leaves and other *debris* over them, and we can hardly expect that in a clean raked border, with the bare earth fully exposed, but what we shall lose them if we do not adopt similar means. I have seen so much injury resulting to bulbs and tubers from loss of sap and the consequent shrivelling they undergo, that in planting I always make provision for leaving them out by placing a mixture of fine leaf-mould and sand immediately around them. This not only helps to ward off frost, but keeps them in a comparatively dry comfortable state during the winter to what they otherwise would be in, and all that is then required is some slight covering of some light non-conducting material laid on the top of the soil. Bulbs and tubers, although they appear at rest at this season are not in reality so, as the decay of the leaf and stem is only the beginning of a new life as it were, for they immediately commence forming fresh rootlets to feed and support the embryo flowers contained within. Laid upon dry shelves or stored in drawers or any other way, they must of necessity daily become weaker from lack of food, as is evidenced by the sluggish way they start and the difference there is in their growth in the spring compared with others that have not been disturbed. *J. S.*

An Elm Tree in Kensington Gardens.—At the end of the Long Water in Kensington Gardens, on the west bank, close to the fountains, and surrounded by a seat, stands a noble and beautiful Elm. There is one of the same sort on the opposite slope, and a few years ago there stood higher up on the same slope a still finer specimen. It was blown off, and the stump which remains has sprouted with vigour. The habit of the tree is not fastigiate, but branching, as the Wych Elm. The trunk, instead of being level in surface, as is the case both with the Wych and field Elm, is broken into grand buttresses by the roots, leaving great hollows between. The twigs feather nearly as lightly as the Birch, and the leaves, which are long-shaped and of a vivid green, clothe the massive limbs as thickly as the delicate twigs, giving the tree the appearance of a vast Fern. What is this tree? By the descriptions in Loudon it might be either Ulmus effusa or Ulmus viminalis. Ulmus effusa I have been unable to get—nobody cultivates Elms now; Ulmus viminalis I have only seen in nursery gardens in the shape of a miserable, chilly twig, grafted on a long naked pole of field Elm, a thing neither of use nor beauty. To obtain suckers from the trampled ground of Kensington Gardens is impossible. Can any of your readers tell me, not only what the tree is, but where I can get good specimens, not grafts, for ornamental planting? The tree evidently revels in London climate, and in Kensington Gardens they grow trees for planting out, but I have not seen among them one specimen of this glorious tree. *Bernard Coleridge, Heath's Court, Ottery St. Mary.* [It is truly a noble tree: we believe it to be one of the varieties of U. compestris. Eds.]

Cockroaches.—Having been much annoyed by these pests, and having used all the common remedies without much effect, I was advised to try "Hardiman's London Beetle Powder." About three weeks ago I scattered some on the kitchen floor and blew it into holes and corners with the little bellows. Next morning the dead and stupified blackbeetles were scattered as thickly over the floor as the tea-leaves are over a carpet before it is swept. The next night there were not quite so many, and I continued to use the powder for three or four nights till scarcely any were found in the morning. After some days it was scattered again, and a good many were found, but by repeating the treatment from time to time only a few young ones make their appearance, and for the present we are nearly free from these disgusting visitors. I always have the cockroaches burnt when they are swept up in the mornings for fear they should recover and walk about again. *G. E. O.*

Hardiness of Berberis Darwinii.—Mr. Dixon inquires about this at p. 473. We have no hedge of it, but have had plants in the shrubberies for many years. It seems quite hardy—quite as much so as the Holly-leaved Berberry. By the way the common one of the hedges seems more tender than either, and some of our plants of the latter are often much crippled by hard winters and ungenial springs. It is surprising that this plant is not more generally grown. Hardly any plant is more ornamental in leaf, flower and fruit, the latter resembling small pieces of coral suspended in the most graceful bunches. They are also valuable for garnishing, and make a first-rate preserve. There is a purple, and a white-fruited variety of the common Berberry, both of which seem to have dropped out of cultivation. Though the flowers of the common Berberry cannot vie for a moment with the very chaste and showy blossoms of B. Darwinii, yet the fruit of the former is equally or more beautiful than the flowers of the latter. The common plant is the stronger grower, and better adapted for a serviceable hedge plant. It seems that the notion that it invites or spreads mildew has almost banished the common Berberry from whole districts and counties. One hardly ever meets with it in a wild state, unless in the North or in Scotland. *D. T. Fish.*

Plumbago capensis in the Open Air.—This plant is bedded out in France pretty extensively, but it must be borne in mind that the French do not finish bedding-out such plants till the middle of June, and that they put out fine large plants. Treated in the same time and manner, the Plumbago capensis will flower equally well in the open air in many parts of England. I have no doubt Mr. Payne will find it stand very well on a wall at Taunton with the small measure of protection he proposes. It is also among the very finest plants we possess for furnishing a pillar or wall in a cool conservatory or greenhouse. The colour and form of the flowers are unique among plants, and every one seems to like the Plumbago capensis. *D. T. Fish.*

—— I am pleased to see this old-fashioned climber coming once more to the front; twenty years ago, when living under Mr. O'Brien at Bromly Hill Gardens, I was much taken up with it as grown there in the conservatory, and since then I have always found a place for it. I have grown it as an exhibition plant and as a stove plant, I have grown it in 5-inch pots, and I have grown it out-of-doors in the summer months, and all with good success. Last year I grew it in the stove for blooming in the winter, and trained it up the pillars; it was a mass of bloom all the winter. This year I intend to do the same. I pruned the plants in the summer, and I have just shifted them into 16-inch pots and placed them in the stove, and I expect more bloom than last year. It is a great acquisition to winter blooming plants on account of its colour. *John Cleeve, Headfort Gardens, Kells, Co. Meath.*

The Weather in Oxfordshire.—We had quite a snowstorm this morning between 4 and 5 o'clock, and a further slight fall about 11 o'clock. The wind was in the south-west and very cold, the thermometer standing at about 36°. At the present time (5 o'clock) the wind is changeable, and it is raining heavily. It is rather early for snow: have you heard of any before this season. *W. Dixon, The Temple, Goring, October* 30. [A snowstorm occurred in London between 7 and 8 o'clock on Wednesday morning, and the weather throughout the day was very cold. There were heavy falls of snow also at Rochester, Folkeston, Witham, Harwich, Cambridge, Rugby, and other places. Eds.]

Rare Stapelias.—Thinking you perhaps would like to see rather a rare flower, I have forwarded you per post a bloom of Stapelia atropurpurea (true), Salm-Dyck, also Duvalia Corderoyii, Hooker. They are, I believe, both rare in collections, especially the former. The latter is now in several collections, and is I believe one of the most distinct known. *Justus L. Corderoy.*

Maréchal Niel Rose.—It may interest your readers to hear of the success we have met with in budding a Maréchal Niel Rose on an old Banksian Rose tree? About fourteen months since (August, 1877), my gardener budded a Maréchal Niel on a young new branch starting from the roots about 5 feet from the ground, and the shoot from this is now 7 yards long; besides this the said shoot has thrown out eleven more, each from 6 inches to 1 yard long. It is in a warm corner, well sheltered from the north and east winds, so that

we hope for many flowers from this queen of Roses next spring. *W. W., Anstey Pastures, Leicester, Oct.* 21.

Aloysia citriodora.—I think this sweet-scented plant is not sufficiently known with regard to its hardiness to make it as popular as it otherwise would be. There is in this neighbourhood a plant of it trained to the end of an orchard-house which has withstood many winters unscathed, the only precaution taken having been a little long litter to protect the roots. I am also informed on good authority that there is on the estate of Sir Harry Verney, Claydon Park, Bucks, a hedge of this plant some 3 feet high and 18 inches through, which is kept annually clipped, and which well repays for any trouble it may require by its neat appearance, and especially its fragrant properties in summer. *E. Morgan, The Butts, Harrow-on-the-Hill.*

Packing Cut Flowers.—In reply to "Enquirer," p. 540, as to the best means of packing cut flowers for transmission to London, it may, perhaps, be of some service to mention that they will travel excellently if simply placed in moderate-sized tin boxes with close-fitting lids. A common tin biscuit-box of about 9 inches long, by 4½ inches in height and breadth, is what I find most convenient. During the hottest part of last summer I forwarded a collection of wild flowers packed in this manner for exhibition at a horticultural show, at a considerable distance, and I was told they arrived in excellent condition; and in days before present speed of travelling the weekly consignment of flowers sent up to the family during their spring stay in London from the home garden, about 140 miles off, travelled thoroughly satisfactorily in this manner. I usually wrap a little fine soft paper round each bunch of flowers as I place them in the box, which keeps them from being bruised, and sucks up loose drops of water that might injure them; and always endeavour to let the stem be well filled with moisture, by letting them stand in a bowl of water before packing. *O.*

—— I know of two ways that answer very well: the first is to pack the flowers in a box with fine grass. It should be the lawn-mowings cut by machine, and neither too dry nor too moist, or it will injure the bloom and not shake out well from the leaves and sprays which are packed in it. The flowers that travel best in short grass are Rose buds and small compact or half-expanded blossoms. Another plan is to get a moderately large box made of light wood, with a division or two in it, and in this division let holes be cut so as to allow the stems of different bouquets to pass through. The side of the box must slide open, so that after the flowers are cut, tied together in bundles, and their stems are put into the holes, the lower compartment of the box may be filled with moist moss or grass. The upper part of the bouquets rests of course on the dividing shelf or perforated board, over which before the lid is put on a little more moss or grass should be lightly placed. Flowers so packed will travel long distances by rail, and when very choice blossoms are sent I have seen a perforated division used with holes in it, in which only one single stem could be inserted. Such a box would simply convey sufficient flowers for a couple of bouquets, or such sprays as would be worn in the hair, when the ladies of the house, being young and beautiful, need no other more artificial adornment. Boxes such as I have described can be very easily made by any country carpenter; the chief art lies in packing the stems well with damp moss, so that the flowers may not, even if the box be turned upside down at the railway station, get displaced; but I always wrote —"With care, this side up," on the lid. *Mrs. Alfred Watney.*

—— I have had some years' experience in packing, and for many years have used boxes made of zinc, 1 foot wide, from 6 to 7 inches deep, and 2 feet long, and trays 3 inches deep are made to fit the box. For small flowers or small fruit I have four shallow trays 1½ inch deep. Gather the flowers and pack them in the cool, let the trays be packed full, and all will go safe and fresh. Flowers allowed to flag by being exposed to sun or wind before being packed seldom recover satisfactorily after being packed. If the box is to be sent by passenger train separately there should be a handle on the top of the box, to facilitate the moving of it; but if to be packed in a garden hamper it does not much matter. *J. Batters.*

Cauliflowers. — Some of your correspondents having experienced disappointment and inconvenience from the tardy way in which their autumn Cauliflowers have turned in, an impression may have gone abroad that this useful vegetable is deteriorating, or that our enterprising seedsmen have been less careful than usual in their selection of stocks. To remove this groundless opinion, successful cultivators are in justice bound to give the horticultural public the satisfaction of knowing it is the season and not the seedsmen to whom we are indebted for this irregularity. I have just read in *The Garden* a very sensible and interesting article by Mr. Hobday, and I have great pleasure in bearing testimony to all he has said upon the subject, especially with regard to the system of autumn and early spring sowing. To have Cauliflowers and Broccoli good the seeds should be sown very thin, pricked out in light rich soil as soon as the rough leaf is seen pushing, and planted out on deeply worked ground when about 4 inches high. In high and dry situations a deep furrow as for Peas should be drawn for the reception of the summer crops, and as a ready means of giving one or two heavy soakings of water prior to earthing up. If this system were adopted generally, we should hear less of Cauliflowers bolting or refusing to turn in. Before the Messrs. Veitch sent out their Autumn Giant they favoured me with a few seeds for trial, and I need not say I have grown it extensively ever since. This year I am pleased to say the stock is as pure as it was when first sent out, and when a member of the firm was here a short time ago he seemed quite satisfied with the magnificent heads I was then cutting, and shall continue to cut until long after their Protecting Broccoli comes into use. Owing to the cold ungenial weather we had in May vegetation made but little progress; this, as a matter of course, threw successional crops out of order, but with this exception we have nothing to complain of, indeed I can safely say my crops of Cauliflower and Broccoli have never been more satisfactory or selected from better stocks. *W. Coleman, Eastnor.*

—— Mr. Fish has drawn attention to the failure of two very important—I may say indispensable—crops, and he has done good service in so doing, particularly if it should turn out that some of your numerous correspondents should be able to suggest a remedy that would prevent a similar disaster in future. The failure of the Cauliflower crops has not been the result of bad seed, nor is it in my opinion a bad omen for future crops. The past season has been one of sudden transitions, and I am disposed to attribute the failure of these crops to "checks" to the growth of the plants during the hot summer months. Take, for example, the autumn-sown Cauliflowers, which, unless the time is nicely gauged for sowing, frequently bolt or run to seed the following spring; but the phenomena so graphically described by Mr. Fish is certainly rather difficult to account for, except it was caused by the intense heat. I was puzzled for a time with the appearance of the flowers, and at first I blamed our light soil, till I discovered that my neighbours were no better off than myself. Mr. Fish's description of the disease (if it can be called one) is a true picture of my experience here, and in this neighbourhood, and I am also told on high authority that the failure of the Cauliflower crops has not been confined to certain districts in England, but has extended to the extreme North of Scotland, which is, I think, some proof in favour of the assumption that the disease has been purely consequent on the state of the weather and nothing else. Be this as it may there can be no question that the hot weather proved fatal to the Carrot crops. In giving my experience of the Carrot crops in this garden and in this neighbourhood generally, I may state for the benefit of your readers that this is not a Carrot growing district, although there is a large tract of country between Liverpool and Southport (as may be seen by any one travelling to or from the latter place *viâ* Ormskirk) where little else is grown save Carrots and Potatos. The land is principally composed of a porous peat and sand, chiefly the latter, and the Carrot crops are always exceedingly clean and handsome in appearance. What better therefore could one do than try to imitate conditions which yield such grand results. Such was my thought last spring, and accordingly I set to work and had a plot of ground for Carrots specially prepared that would defy all weathers. This was done by making a mixed preparation of artificial soils to a depth of 3 feet; the operation entailed a considerable amount of labour, and of course we anticipated results in proportion, but alas! we might as well have scattered our seeds by the wayside; for about the beginning of July the yellow leaf indicative of the grub being at work made its appearance, and a month afterwards the crop was lost. I have had two good crops of Carrots here in four seasons, that of 1877 being the best I ever saw in this district. There was a spell of dry weather during the summer of that year, and the grub made its appearance; but happily the weather changed in a few days, and the remainder of the season being favourable the ravages of the grub were stopped in time to save the crop, with the result above-mentioned. I may further add that Parsley seeds merely germinated and disappeared in a few days, as if it had been set fire to and systematically burned. *W. Hinds, Otterspool.*

—— Last year my experience with the Carrot was identical with that of Mr. Fish (p. 539), although I took great care to have the seedlings frequently sprinkled with a mixture of soot and lime. This year, however, I have made seven different sowings, and each crop has grown to my entire satisfaction. My mode of culture is as follows:—As last year's Celery crop was cleared off the ground received a good dressing of lime from our gas-house, and was thrown up in a rough state. Immediately before the plot was required for sowing it was forked over, the drills drawn, the seed deposited, and covered with sifted wood-ashes. Beetroot and Parsnips received similar treatment, and the results are equally good. *Thos. Lloyd, Gr., Mongewell Park, Oct.* 29.

—— Allow me to say that Mr. Fish is not the only one who has experienced a partial failure with the Carrot crop this year; I, too, have suffered, but not to so great an extent as Mr. Fish. My first sowing of James' Intermediate and Long Surrey came up as thick as possible, but after a few weeks they were nearly all gone. I sowed again in another plot, and have some very fine Carrots. My autumn sown ones are also very good. Last year I sowed time after time, but could not get any Carrots, and I cannot account for it, as I always trench deeply so as to have fresh soil for them. I think it must have been owing to the very mild winters we have had and so much rain; yet again the gardener at Virginia had a fine crop last year, and this year he has none. *John Clews, Headfort Gardens, Kells, Co. Meath.*

—— I don't remember ever having a worse plant. Our seed was obtained from a trustworty firm, and sown tolerably thick. The seeds came up well, but suddenly disappeared. The soil was of a light gravelly nature, and the locality something like 200 miles south of where I now write from. Many growers in that district had the same misfortune, and the general opinion was that the black slug had destroyed them. I also found that many other crops came up wonderfully slow, and amongst them Parsnip. *J. Batters, Gr., Gillingham Hall, Norfolk.*]

Raising Tropæolum Seed.—I once raised from seed a plant of T. tricolorum thus:—A seed fell on some sand in a vinery just under a leak in the roof; it was rainy weather, water dropped on it constantly, and it grew. I have never raised another, although I have sown them several times. *C. W. Strickland, Hildenley, Malton.*

Delphiniums.—To prevent slugs and snails from destroying these plants in winter, slake some fresh lime, give the plants a watering, and then cover the roots with fine-sifted coal-ashes, which must be removed in the spring just as the plants begin to appear above-ground. Cover the roots about 6 inches deep. *Philip Frost, Dropmore.*

Odour of Currant Leaves.—In answer to inquiry in last week's *Gardeners' Chronicle*, the "white fruited" black Currant leaves and wood are scented like the "black fruited." Piece of the "white fruited" enclosed. *David Syme, Manager, The Lawson Seed and Nursery Company, Edinburgh.*

—— The leaves of the white fruiting variety of Black Currant are scented like the black, and the fruit is much the same in flavour, but not so transparent as the true white Currant. It is a worthless variety, good for little except as a curiosity. *T. Capers.*

Autumnal Blooming Roses.—I have been greatly interested in the notes on this subject by W. D. Prior, "Rosa," and others. I desire also to express my sincere thanks to the latter courteous writer for his prompt answer to my enquiries about the locality of his long list of autumnal blooming Roses. My experience, however, is more in accordance with Mr. Prior's experience than "Rosa's," and with the former writer I consider it high time that the lists of the so-called Hybrid Perpetuals should be vigorously cut down by the removal of all Roses from such as flower but once a year. Under average treatment it would almost seem as if the rage for size, form, substance in these Roses had robbed many of our flowers of fragrance, and more of the capacity of blooming twice a year. The latter is all that is meant by Hybrid Perpetual, unless in the case of Teas. It would be well in the forthcoming number of the *Rose Annual*, or in your pages, to discuss the questions of age and culture on the second blooming of Roses. Under the latter the question of how far an autumnal bloom would be secured by sacrificing the first or summer blossoms might be carefully considered. Our great rosarians might have much to say on the matter. There can hardly be a doubt, too, that such a long list as "Rosa" gave is hardly ever possible except in Rose nurseries, such as at Waltham, Cheshunt, Sawbridgeworth, Slough, &c. The abundance of autumnal bloom in such localities originates largely in the number of Roses grown, the various forms and ages of the plants, and the specialities of cultivation adopted. Hence, interesting as it is to have full and long lists from our great rosarians, it is far more useful for the average grower to have lists of autumnal bloomers from small gardens. I venture to offer another suggestion to the raisers of

new Roses: that they might do well to cease striving for size and hie back to Tea, China, or Noisette blood, with the object of increasing the number of perpetual or double blooming Roses of more elegant form of bud and sweeter fragrance; Roses, in a word, of the Devoniensis type are far more desiderated in the garden and for bouquet and vase work than those of the style and character of the Baroness Rothschild. Niphetos deserves a wall for autumnal flowering, and so also does Homer. The latter has been magnificent here this autumn on a south wall, covered with flowers of the most perfect form and exquisitely marbled shades. It was also a mass of bloom during the summer, nearly every flower coming perfect, though when on a north-west wall almost every flower was deformed. Homer is obviously one of the warmest blooded Tea Roses, and likes heat. *D. T. Fish.*

The Woodstock Kidney Potato.—I can give Mr. McDonald an answer to his inquiry as to this Potato having been grown at Chiswick. I sent a few of it there with several other kinds two years since, and as it was grown again during the past summer Mr. Barron had two seasons' experience of it to enable him to pronounce upon its merits. That the committee did in granting a certificate at South Kensington to this Potato depart from their regulation that all certificates to Potatos should be only awarded at Chiswick, is perhaps rather creditable than otherwise, as it must be admitted that the rule, however good it might have been a few years since, is absurd now. When the Potato and Pea trials were I believe simultaneously instituted a few years since at Chiswick, it was agreed that all kinds of such intended to be submitted to the committee should pass through the Chiswick ordeal, but after a couple of years Peas and Potatos were put aside for Cabbages, Turnips, Beans, &c., and therefore the rule ought, in relation to the former vegetables, to have been abrogated. Why it should not be persevered in I am unable to comprehend, because if it is absolutely necessary that Peas and Potatos should be first grown at Chiswick it is equally necessary that all other vegetables—Melons, Apples, Grapes, and other fruits—should undergo the same test. Either the rule should be universally applied or regarded as no longer in force. As it is, it has not prevented lots of mistakes from being made in the certificates of Peas, whilst its lack at South Kensington have not prevented some blunders. The Potato is now a vegetable of such popularity and importance that growers may well ask for a wider representation for it upon the Fruit Committee. As it is, one at least of the best Potato authorities in the kingdom is not upon it, and under the present state of things is not likely to be. Yet it ought to be the object of the Council in constituting the committees to make them as effective and representative as possible rather than as preserves for particular friends or incompetent novices. The decisions of the committees are valuable just as they represent the best horticultural knowledge or otherwise. I can but add that the very late period at which a certificate has been granted to Woodstock Kidney, got now mainly through the persistence of Mr. McKinlay, inflicts negatively a great hardship upon the raiser, Mr. Robert Fenn. A certificate invariably adds to the popularity and market value of the subject receiving the award, but in this case Mr. Fenn had parted with the stock before the certificate was awarded, and as a consequence he profits neither by the enhanced value of the Potato nor by the popularity acquired, as even his name as the raiser is not mentioned, and his honours as such are barren. This is an undoubted hardship, which now it is too late to mitigate. It ought to be the object of the committee in all cases of granting certificates to see that the raiser gets his fair portion of the honour attached to the awards. *Alexander Dean.* [The committee have only to deal with the exhibitor and contributor. They might indeed require to be furnished with the raiser's name, but no such regulation is now in force. The natural inference is that raisers should take care to exhibit, and exhibit in good form. Eds.]

Goold's Concentrated Chemical Compounds.—As Mr. Culverwell has associated my name with these compounds at p. 538, I have great pleasure in stating my experience. I have used these compounds for the last two years. I first tried the hothouse compound on a variety of plants in pots; the effect was most marked on Azaleas, Cinerarias, Spiræas, and Roses, all of which seemed to be greatly improved in the brilliancy of their flowers and clean beautiful foliage. It had also a marked effect on some pot Vines. This was early in the spring of 1877, and during the autumn I tried the compound on Fuchsias, Bouvardias, Pelargoniums, Solanums, and various other autumn-flowering plants, and found them all greatly improved by it. In the open ground I tried the garden compound on Carrots, Turnips, Beet and other roots with good results, obtaining free growth and clean good roots. This year I selected some old pot Vines that had fruited in the previous year, and without repotting them I put them into the house about the beginning of the year, and used the Vine compound on them at various intervals during the growing season, and obtained some very nice Grapes from them, the leaves having a thick leathery substance, and the result is I retain some of them for forcing next year. I also used a special fruit compound on some Peaches and Plums in pots, with a very marked improvement on their growth and fruit; also on trees planted in the open borders, all of which I thought greatly improved by it. The Rose compound I used on about 150 pot Roses, obtaining good growth and splendid flowers, and I intend to use it for potting Roses in this autumn. I have again used the hothouse compound this year on Fuchsias, Pelargoniums, Bouvardias, Begonias, Azaleas, and Camellias, with good results. Some Azaleas especially that have not been potted for several years have been of great substance, and are well set with bloom, through using this compound. I obtained truly marvellous results from some small pots of Strawberries by using this compound on them after they had set their fruit, watering them with the mixture twice. I used it on nearly all my pot Strawberries once after the fruit was set, and the effect was most marked upon them. *John Clark, Studley Royal, Ripon, October* 28.

Catalogue Names of Plants.—If judges would disqualify wrongly-named plants we should not have such illiterate catalogues as even some of the first nurseries send out; but then *quis custodiet custodes. East Somerset.*

The Gros Colmar Grape.—I think, with Mr. Knight, there is little doubt the proper name of this Grape is Gros Colmar, and M. Leroy's opinion goes a long way to settle the matter. Some half-dozen years ago I expressed the same opinion in the *Gardeners' Chronicle*, and I remember the late Mr. Rivers took part in the correspondence at the time. It is generally conceded that this Grape is of Continental origin, and on the authority of M. Leroy we have it, that it originated in the neighbourhood of Colmar, in France. As the Grape is undoubtedly large and handsome, nothing is more likely than it would become locally known by the name of Gros Colmar, or the large Grape of Colmar. Colman is an English surname, and is I believe almost unknown as such among Frenchmen. *D. M., Dunrobin.*

A Word of Praise for an Old Orchid: Zygopetalum Mackayi.—This is one of the most easily cultivated, beautiful, and sweet of Orchids. Under the common treatment of stove plants it seldom fails to throw up fresh growths annually, and these push vigorous flower-stems that go on flowering in the stove or warm conservatory from September to Christmas. The flowers are of good size and substance, and the odour has been compared to Hyacinths with a dash of Valley Lilies added thereto. There is a larger beauty, called superba, which has a much finer flower and a more robust habit than the normal type. *D. T. Fish.*

Tomatos.—I firmly believe that the only way of making certain of securing a crop of good Tomatos is to grow them under glass. I have frequently seen them destroyed by the disease, and as recently as the early part of August this year in a sheltered spot in a first-class garden in the South, a heavy crop, was completely destroyed. I grow Hathaway's Excelsior from cuttings, and to those who have not grown this variety I can honestly recommend it. *J. Batters.*

Primula Auricula var. marginata.—A few weeks ago I had occasion to call at a small village in Northamptonshire, and I was delighted to see this alpine Auricula in a garden attached to a farmhouse, where it was doing remarkably well. It had formed fine rosettes of leaves 6 to 9 inches in diameter. The soil in which it was growing was somewhat heavy, but rich. The border where the Primula was planted was elevated about 15 inches above the ordinary level. Three years ago I had the pleasure of seeing this handsome plant in its native habitat. It was truly remarkable to see it overhanging the ledges of rock, with its immense leathery leaves, which are covered with a kind of farinose powder, giving the plant a very singular and quaint appearance. The flowers are very handsome, being of a deep orange-yellow, slightly nodding. Wild this Primula always grows on the south side of the Alps, but down here on our level plains I believe it is benefited by slight, but only slight, shade. *R. P.*

Lapageria rosea Flowering Outdoors.—It may interest many of the readers of the *Gardeners' Chronicle* to know that this plant is not only perfectly hardy here but has also flowered outside. I enclose a flower gathered from a plant growing through a standard Rhododendron in a sheltered part of the garden about 400 feet above the level of the sea. Planted about four years ago it is by far the healthiest plant we have, making as much as 5 feet of growth in a season. It bids fair to entirely overrun the plant under which it is planted. Our temperature seldom falls below 25° Fahr. *F. Fowler, Ravensdale Park Gardens, Co. Louth.* [At Cliveden it is flowering freely against a wall outside. Eds.]

Cranberry Culture.—Allusion has been made in the *Gardeners' Chronicle* for October 26, relating to the growth of the American Cranberry in the gardens of Petworth House. Would you kindly inform me whether, in your opinion, it might be successfully cultivated in a garden of considerable size on the Harrow Road? A small tank I apprehend could easily be made, and rubble with sandy peat be readily obtained: the only question to my mind arises as to whether the fogs of London would injure the fruit. I am not aware that I have partaken of Cranberry tart for a lengthened period, but I remember its sub-acid taste was most agreeable, and if I were sure it would grow and produce fruit in this large garden I would soon construct the tank and have the proper soil prepared. *John Colebrooke.*



Fig. 99.—Boscobel House.

BOSCOBEL.*

The notice that we published, together with an illustration of the so-called "Royal Oak" in a late issue, was so far incomplete that we made but passing reference to Boscobel House and the interesting account published of it by the Rev. Henry G. de Bunsen (Shifnal: Lowe). Thanks to the courtesy of Mr. Richard Lowe we are now enabled to repair the omission, and to add a view of Boscobel House

* *Boscobel; an Account of the Royal Oak, Boscobel House, and the Whiteladies.* By H. G. de Bunsen, M.A., Rector of Donington. (Shifnal: Lowe).

as it now stands, and which is evidently much more likely to have been contemporary with Charles II. than the tree designated as "royal" figured at p. 501 of our issue for Oct. 19. Boscobel House and Whiteladies, a neighbouring mansion, owe their fame to the fact that after the Battle of Worcester in 1651 Charles II. took refuge first in one and then in the other. Both houses are now in the possession of Miss Evans, who has contributed a good deal of interesting information to Mr. de Bunsen's modest little pamphlet. In it the story of Charles' concealment is briefly told, and a description of the houses given. We cite the following passage, so that the reader may, if he think fit, compare the illustration on p. 501, and see how far such a tree as that represented was likely to have served the purpose of concealing a King and a Colonel so long ago as 1651. For our own parts we agree with our correspondent, in spite of the testimony of the Earl of Bradford and others :—

"Being thus a little refreshed, the Colonel persuaded his Majesty to go back into the wood (supposing it safer than the house) where the Colonel made choice of a thick-leaved Oak, into which William and Richard (Penderell) helped them both up, and brought them such provision as they could get, with a cushion for his Majesty to sit on; the Colonel humbly desired his Majesty (who had taken little or no rest the two preceding nights) to seat himself as easily as he could in the tree, and rest his head in the Colonel's lap, who was watchful that his Majesty might not fall. In this Oak they continued most of the day, and in that posture his Majesty slumbered away some part of the time and bore all these hardships with incomparable patience. In the evening they returned to the house, where William Penderell acquainted his Majesty with the secret place wherein the Earl of Derby had been secured, which his Majesty liked so well that he resolved while he stayed there to trust only to that, and go no more into the Royal Oak, as from hence it must be called, where he could not so much as sit at ease." *

"Close to the house (Boscobel)," continues Mr. de Bunsen, "in the garden, there is a mound with a wooden box or summer-house on the top of it, very much as it was in the days of King Charles, and where it was said his Majesty spent Sunday, September 7, 1651." Blount says, "His Majesty spent some part of the Lord's day in reading, in a pretty arbour in Boscobel gardens, which grew upon a mount, and wherein there was a stone table and seats about it, and commended the place for its retiredness. Portions of the stone table may still be seen at Boscobel."

Foreign Correspondence.

LEBANON, SYRIA: *In Camp, under the Cedars, Jebel el Arz (i.e., Cedar Mountain).*—Here I am at last, realising one of the dreams of my boyhood, under the trees that I have always resolved to visit whenever an opportunity should occur. I had made up my mind to be disappointed, but, on the contrary, am agreeably surprised with the Cedar grove. Certainly there is no forest, and amidst lofty mountains, rising around in a magnificent amphitheatre, the grove from a short distance appears but a small plantation, a mere patch in the valley of bare mountain sides; but on nearer approach the grove rapidly assumes larger proportions, and on actually entering the wood and passing under the huge trunks and limbs of these ancient timber trees one realises that it is the remains of a vast forest, and can quite imagine oneself in the depths of widely extended woods.

Thousands of seeds from the fallen cones are germinating after the equinoctial thunderstorms, but as fast as they appear above the ground the young plants are devoured by goats and destroyed, otherwise the whole valley might speedily be covered with Cedar trees.

I enclose specimen of a young Cedar. I have written an appeal for aid to enclose a space around the Cedars fort he propagation of young plants. (*From a private letter.*)

MASKELUJA, CEYLON: *September* 14.—I shall feel obliged if you can give a corner in your paper for the enclosed speech and resolution that was given by the Chairman of the Ceylon Chamber of Commerce, as I wish it laid before the numerous readers ot your paper in contradiction to statements published by the Rev. Mr. Abbay and Mr. Thiselton Dyer, regarding Hemileia vastatrix killing the Coffee in Ceylon and stating that we have ceased to cultivate Coffee. Never has the state of cultivation been in greater perfection than at present, and manuring carried out in proper system. No doubt it does a great deal of harm to the trees, robbing them of their leaves at the time they are most wanted to bring on the crop, still we fight bravely against it and work our estates in a sound method of high cultivation. *J. Alexander.*

"LEAF DISEASE.—Mr. G. Wall, in moving the first resolution, said they had frequently heard during the last few years statements of a very damaging character, made by eminent scientists at home, but as these statements had not reached Ceylon until some weeks after they were made, it had not been deemed advisable to refute them. He had no doubt his hearers, like himself, had wished they had been on the spot to contradict or to correct them at the time. Latterly, however, it had been stated by a very high scientific authority that leaf disease had practically put an end to Coffee planting in Ceylon; and as this was opposed to the facts of our knowledge and experience, it became the duty of the Chamber in the interests of the large body of capitalists who were concerned in the Coffee enterprise to give it some authoritative refutation. The time had come, in fact, when the truth must be made known, but it must be the whole truth, and nothing but the truth. The truth, then, was that leaf disease had undoubtedly done, and was still doing, very serious mischief; but in making this admission they were bound to remember that the pest had been in full force for over seven years; and during that time most estates had suffered repeated attacks of the most malignant form of the disease. It had had full scope and had done its worst, and what was the consequence? That although the plantations had suffered some reduction in the amount of their crops, they had in every case fully recovered, and become as vigorous and as luxuriant as they were ever known to be. They had successfully resisted these repeated attacks, and had subsequently produced good crops of unimpaired quality. Here, then, was the whole truth;" and the statement that the leaf-disease had extinguished, or brought to a practical end, the cultivation of Coffee in Ceylon, formed no part of the truth, but was directly opposed to the facts. Associated with the statement in question, and in support of it, the eminent scientist who had given it publicity had made another statement which, although not mentioned in the resolution, could not be passed over. It was to the effect that the Coffee destroyed by leaf-disease was being replaced by other products, such as Cinchona, Tea, &c. In this supposed substitution of other products was an apparent confirmation of the other allegation as to the extinction of Coffee. It therefore behoved us to consider what was the truth as regards the introduction of the new products in question. The fact, well known to all then present, was that Tea, Cacao, and Cinchona were introduced long before the appearance of leaf-disease, but as they were only on an experimental scale they did not attract attention till a later date. The success of these experiments showed that a mistake had been made in the planting of vast areas of land of various soils and aspects indiscriminately with one single product; and it became evident that in some situations the new products succeeded much better than Coffee. Hence the gradual introduction of a systematic cultivation, not of Coffee only, but of such other tropical products as best suited the soil. It was not because Coffee was extinguished, but because more suitable use was found for portions of our estates, that new products were being introduced; moreover, the high price land had lately maintained had caused people to consider whether it would not be better to utilise the lands they had rather than buy new land at a high price, and probably in remote districts. The tendency of leaf-disease had, no doubt, been to give additional encouragement to the introduction of new products, but it would not be true to say that the planters had been driven to them in consequence, as alleged, of the destruction of their Coffee by leaf-disease. He (the Chairman) considered that Coffee suffered only the common lot of every other produce of the soil, in having its particular enemy. It was not remarkable that Coffee should suffer from leaf-disease, any more than that Wheat should be subject to smut, Rye to ergot, the Vine to oidium, or Potato to rot; but it was matter of congratulation that, whereas some of these diseases injured the fruit, leaf-disease affected only the tree, and left the fruit unimpaired in quality. He spoke from an experience of over thirty years as a Coffee curer and estate visitor, and could confidently affirm that the quality of Ceylon Coffee was now as good as it had ever been. There were perhaps instances where young managers had not given quite so much attention as the older hands used to do to the treatment of their crops on the estates; but the produce, on the whole, maintained its high character. They had very strong proof of this in the high prices commanded by Ceylon plantation Coffee as compared with the Coffee of other countries not affected by leaf-disease. Never, he affirmed, was the superior character of Ceylon Coffee more clearly marked than it is now by the wide difference in the market values. So far, therefore, as that part of his motion was concerned, which referred to the quality of our plantation Coffee, he considered his case was established. It was marvellous to him that men in the high position occupied by those scientists who had pronounced the doom of Coffee, should have ventured on such statements in face of the fact that any other agricultural product was subject to the like, or to worse diseases. As truly might they have declared of the Potato or of the Vine that its cultivation was practically at an end, as of Coffee in Ceylon. He was aware that gentlemen present could adduce instances in proof of the power of Coffee to withstand leaf-disease, but he would cite just one instance, not remarkable in itself, but which was then very fresh in his memory. In February, 1876, in company with a friend from London, he visited a group of fine estates in Matale. On arriving there, to his dismay he found them suffering from one of the worst attacks of leaf-disease he had ever witnessed. They were, in fact, almost leafless from end to end, a picture of desolation. The prospect of a crop seemed to be wholly gone. Yet, in March and April good blossoms came, and good crops followed. The mark of these estates was one well-known in the market, and was in high favour, and the quality of the crop produced immediately after that virulent attack of leaf-disease maintained its high character unimpaired, and commanded the highest prices of the day. That was not an isolated case, but it was one of many proofs that might be adduced to demonstrate the ability of Ceylon estates to resist attacks of Hemileia, and produce crops of the best quality immediately afterwards. He moved the resolution in what he believed was the discharge of a duty the Chamber owed, not to itself only, but to a very large number of persons who had invested capital, and were largely interested in the Coffee enterprise of the island. The resolution was as follows :—

"'The attention of the Chamber having been called to certain statements which have been lately published in England by distinguished scientists, to the effect that leaf disease has practically brought the cultivation of Coffee in Ceylon to an end, the Chamber regards it as a duty to deprecate such statements, as being opposed to the facts of our knowledge and experience, and calculated to excite undue alarm in the minds of especially absentees interested in the Coffee cultivation.'

"'The Chamber can vouch for the fact that Coffee plantations which suffered repeated virulent attacks of Hemileia have recovered completely, and have since produced large crops of unimpaired quality. The Chamber has not been able to verify a single instance of Coffee trees having been killed by the agency of this pest. It is fully admitted that serious injury has been inflicted on Ceylon Coffee plantations by the attacks of Hemileia, but the rise in the market value of the produce has almost counterbalanced the deficiency of the yield, and the Chamber feel assured by the experience of the last seven years that the Coffee enterprise in Ceylon still rests on a sound basis, and is in no danger of being "brought to an end" by the agency of the Hemileia.'

"Mr. Duncan, in seconding the motion, thought that it was unnecessary for him to make any addition to the exhaustive remarks of the Chairman, but he might be permitted to place before them a few facts with reference to the results of leaf disease on certain estates that had come under his own notice. He had been looking through the records of those estates for some years past, and he was glad to be able to say that the largest crops were produced in 1876-77—five years after leaf-disease commenced in Ceylon. He purposely turned his attention to the estates that had not been in any way extended, and he might say that leaf-disease had not prevented any of them from bearing large crops; indeed, in favourable seasons, some of them had borne more than before. A great deal of attention had been devoted to this subject of leaf-disease, and he was afraid that they had almost forgotten the extraordinary changes of the season that had occurred of late years. It was a most singular fact that for the last seven or eight years they had had, comparatively speaking, very dry crop months. In one district no crop was cured at one time without the hot-air apparatus, but they could now go through that district and not see one of them in use. Then they were aware that during the years when they had had very short crops they had been either troubled with abnormal rains or excessive drought, and in a great measure short crops could be attributed to those causes more than to leaf-disease. At the same time, he did not mean to say that damage had not been done by leaf-disease; still he thought that ample proof was afforded by the records of the different estates that they were able to stand against it, and that there was no danger at present of estates being snuffed out by it."—The motion was unanimously carried.

* "Boscobel Tracts," Blackwood, 1857, p. 229.

Florists' Flowers.

Seasonable Notes : Auriculas.—These should now be watered very cautiously, and no water should be applied to a plant unless that plant is dry. We are getting close to the resting-period, when water will be almost withheld for ten or twelve weeks, but it is very undesirable that the plants should be subjected to the drying-off regimen all at once. The leaves should not become flaccid for lack of water at the roots at any time. If there is still any green-fly on the plants, the frames must be fumigated with tobacco-smoke on successive evenings until the pest is quite destroyed. The leaves will not be so easily injured now as they are when the plants are in full growth. The position which Auriculas occupy during the summer months is one in which slugs feel quite at home, and they breed quite freely in their cool, moist quarters. They do most mischief amongst seedlings and baby offsets. Watch for them at night with a good lamp, and it is a good plan to remove all the plants from the frames, then throw in a quantity of quicklime, and drench the lime with water ; this will kill all in the frame, and the pots may be again replaced after looking carefully over them. The frames should now be in their winter quarters—an open space in the garden, where they are fully exposed.

Carnations and Picotees.—These should now be all safe under cover in the cold frames. In some districts plants will stand out all the winter in beds, but these are the exception, and the more delicate growers, which also produce flowers of the finest quality, will not stand the wet and cold : a dry frost does not injure them. The leaves are frequently injured even in frames by what is termed "spot," and seldom recover from a severe attack of it. The treatment is this. When the plants are placed first in the frames the lights must be kept close for a few days, and mats should be placed on the glass if the sun shines brightly. In a week, air may be admitted freely and shading should be dispensed with. Remove the lights altogether by day when the weather is fine ; water the soil in the pots when it is dry, but avoid wetting the leaves as much as possible.

Polyanthuses.—If these are intended to be flowered in beds in the open garden, it will be necessary to look over them frequently. Slugs are very partial to the young leaves, and do much damage if they are permitted. Another pest, exceedingly active at this time of the year in mild weather, is the leather-coated grub. It burrows in the ground by day, committing its depredations at night, it eats voraciously—one of them will soon eat up the leaves of a plant, leaving only the stumps. It will be found feeding at the same time as the slugs.

Hollyhocks.—The plants that have been planted out in cold frames for the winter, or that have been potted and placed in cold frames, must be looked over ; many of the larger leaves will be dead or decaying, and they must be removed, else they generate decay and mould in the frame, which spreads to the healthy portions of the plants. Air must be admitted freely even in wet and cold weather by tilting the lights ; when it is fine they must be entirely removed. Seedlings raised late in the autumn should be pricked out of the seed-pans into boxes, the boxes to be placed in frames. Earlier raised plants, if they are not yet planted out where they are to flower, may be put out at once if the weather is mild. Plants propagated in the autumn should be placed in small pots, the pots to be plunged in a frame. The treatment during the winter will be the same for these as for old plants.

Pansies and Pinks.—Beds of these may yet be planted. The soil should be rich, especially for the Pansy ; and if the surface of the bed can be covered to the depth of 2 or 3 inches with good turfy loam the plants will succeed all the better. It is quite necessary to dress the bed with loam if the ground has grown the same plants the previous years. Trenching to a good depth and placing manure freely in the trenches will enable the plants to stand the drought of the ensuing summer much better. If it is intended to grow either in pots next season the plants should now be potted in large 60's, two plants in a pot.

Phloxes and Pentstemons.—Phloxes may be planted now. The plants grow vigorously in fresh rich soil, and must not be too close to each other. If unable to obtain fresh loam to surface-dress the whole of the bed, it is very desirable to place some in the hole dug for the roots. It is uncertain as to the height each variety will grow, but a little experience will enable the cultivator to come pretty nearly right in this respect. The shortest growers should be planted near the margins of the beds, and the taller in the centre or in the background, as the case may be. If it is intended to repot the plants propagated early in the spring, this may either be done now or any time up to the middle of March. If there is plenty of room in the frames pot them at once ; if not, let the pots be placed closely together in the frames and be plunged. Cuttings of Pentstemons that are now well rooted should also be potted singly, or if the plants are very strong they may be planted out. *J. Douglas.*



Planting Fruit Trees.—Planting time has come round again—so rapidly do the seasons succeed each other. Especially rapid appears the flight of time to the gardener ; his duties are so multifarious and his daily occupations so varied, and withal so interesting, that days slip into weeks and weeks into months with an almost overwhelming quickness.

> "Oh ! remorseless Time :
> If prayer could stay thee, or entreaty bind,
> What worship would be thine."

The gardener may be said to live a great deal in the future ; his hopes centre on the what will be, as he looks on his unbloomed seedlings, and his novelties and vegetables and fruits that have yet to reveal themselves to him.

While the dry weather lasts preparations may be made for planting what fruit trees are necessary. If it is intended to make a plantation of fruit trees, so as to have a compact fruit garden with the specimens near to each other, the ground should be deeply trenched and laid up rough till the trees can be had. Some adopt the practice of digging out the holes when the ground is trenched ; but this is objectionable in cases when the trees cannot be planted at once, as rain-water will get into and transform these holes into mimic ponds, and leave a deposit of something akin to mud at the bottom. The best plan is to dig out the holes when ready to plant the trees, and execute the planting when the weather is drying, and the soil works comfortably.

We may lay it down as a general rule for the Villa gardener that he should plant Apples and Pears in such soil only as admits of heavy rains passing away pretty freely. When first planted the soil should be fairly good ; and if it be poor, some well-decayed manure may either be trenched into the ground when prepared for planting, or mixed with the soil when the latter operation is performed. If it be a good rich loam manure is not necessary, but in dry, hot summer weather, or if it prove dry for a time in the spring after planting, a mulching of manure will be found very beneficial.

If possible, the Villa gardener should go to the nurseries and select his trees, taking care that they have been transplanted a year or two previously, and have plenty of root-fibres. This last is an inestimable advantage, and nurserymen who make a speciality of fruit trees are invariably very careful to transplant frequently enough for the trees to be well furnished with fibry roots. When the trees are received from the nursery they should on no account be allowed to have their roots dried in the wind and sun, and if they cannot be planted at once, they should be laid in by sprinkling some soil over their roots till they can be placed in permanent positions. These appear to be small matters, but they exercise a great influence on the well-being of the trees when planted. Another matter of importance is, in the art of planting, to spread out the fibrous roots on the soil in a regular manner and spread some fine soil over them, after shortening back a little way the coarse roots and completely cutting away all injured roots.

The pyramid-shaped tree is the best for small gardens, as other crops can be grown among them, for a time at least, and the trees can be got at for pruning and fruit gathering. Having then decided on the shape of the tree to be planted, the question of sorts to plant requires consideration. Here follows a selection of dessert and culinary Apples that have been made of varieties suitable for Villa Gardens and small places as producing fruit freely, and growing naturally into shapeable pyramidal trees, viz., dessert Apples, Worcester Pearmain, ripening in August and September, and handsome for exhibition as well as useful for the dessert-table ; Margil and Cox's Orange Pippin as mid-season varieties, and Scarlet Nonpareil and Sturmer Pippin as the latest. If it were desired to add half-a-dozen varieties further to make up a collection they would be found in Red Astrachan, Summer Golden Pippin, Summer Nonpareil, King of Pippins, Gipsy King, and Redleaf Russett, a new variety that is very late.

Culinary Apples must form a part of the fruit plantation of the Villa Garden. If we make a selection of the six best varieties they will be found in Keswick Codlin, Wellington, Cellini Pippin, Lord Suffield, Small's Admirable, and Queen Caroline, something in the way of Alfriston, a great bearer, and very useful for small gardens. A further half dozen will be had in Old Hawthornden, Blenheim Orange, Golden Noble, Warner's King, Manx Codlin, and Calville Malingre, very handsome and a fine late variety.

Coming now to Pears, our selection of six fine useful varieties will be found in Doyenné d'Ete, Williams' Bon Chrétien, Colmar d'Ete, Beurré d'Amanlis, Beurré Superfin, and Louise Bonne of Jersey. If it were desired to make the selection into a round dozen, there should be added to the foregoing the following sorts :—Madame Treyve, Fondante d'Automne, Pitmaston Duchesse d'Angoulême, Emilie d'Heyst, and Doyenné du Comice. All the foregoing form fine fruiting pyramids on the Quince stock, and bear freely.

The absence of some of the fine late Pears from the foregoing list may probably be noted. Our excuse for the omission is that late Pears, or those that require keeping for a time, and should have a proper fruit-room, are of little real service to most amateur cultivators of fruit in a small way and Villa gardeners, because of the want of convenience for keeping them.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week ending Wednesday, Oct. 30, 1878.

Month and Day.	Barometer: Mean Reading Reduced to Sea-level	Barometer: Departure from Average of 28 Years	Temperature of the Air: Highest	Lowest	Range	Mean for the Day	Departure of Mean from Average of 60 Years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Degree of Humidity Sat. = 100	Wind: Average Direction	Rainfall.
Oct.	In.	In.									In.
24	29.61	—0.01	57.0	41.5	15.5	49.2	+ 1.3	42.3	95	{ S.S.W. W.S.W. W.	0.28
25	29.06	—0.58	55.1	45.0	11.4	48.0	+ 0.5	40.0	74	{ W.S.W. W.N.W.	0.00
26	28.95	—0.77	53.2	42.0	11.2	47.3	+ 0.1	43.3	87	{ W.S.W. S.W.	0.47
27	29.39	—0.34	49.2	39.0	10.2	43.0	— 4.0	38.8	92	E.	0.00
28	29.53	—0.29	47.8	36.7	11.1	42.1	— 4.8	38.7	87	{ W. W.S.W.	0.07
29	29.69	—0.13	46.1	38.1	8.0	41.7	— 4.9	34.8	78	N.W.	0.00
30	29.53	—0.21	42.0	30.0	12.0	36.7	— 9.8	31.0	93	{ W.S.W. W.	0.10
Mean	29.31	—0.42	50.2	39.3	10.1	41.0	— 3.0	40.1	87	W.	sum 0.92

Oct. 24.—Overcast and wet till 11.30 A.M., fine after. Stormy day. Cloudless at night.
— 25.—A fine day, partially cloudy. Cool.
— 26.—Very dull in morning. Cloudy day, but fine at intervals. Cool. Cloudless at night. Dashing showers.
— 27.—Fine, but occasionally dull. Cold. Fog at 6 P.M.
— 28.—Fine, cold. Cloudy and showery at times. Overcast at night.
— 29.—Fine, but cloudy and dull till evening. Then cloudless. Cold.
— 30.—A dull, bitterly cold day. Snow and hail in early morning. Occasional rain till evening.

London : *Barometer.*—During the week ending Saturday, October 26, in the suburbs of London the reading of the barometer at the level of the sea increased from 29.82 inches at the beginning of the week to 29.84 inches by the morning of the 20th, decreased to 29.27 inches by the morning of the

22d, increased to 29.65 inches by the evening of the 23d, decreased to 29.13 inches by noon on the 24th, increased to 29.38 inches by the evening of the same day, decreased to 29.23 inches by noon on the 25th, increased to 29.29 inches by the night of the same day, decreased to 29.04 inches by the morning of the 26th, and was 29.32 inches at the end of the week. The mean reading for the week at sea level was 29.49 inches, being 0.63 inch below that of the preceding week, and 0.51 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 66° on the 21st to 53½° on the 26th; the mean value for the week was 57½°. The lowest temperatures of the air observed by night varied from 39⅜° on the 23d to 50⅜° on the 20th; the mean for the week was 45°. The mean daily range of temperature in the week was 12½°, the greatest range in the day being 16° on the 21st, and the least, 11½°, on the 26th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—20th, 53°.5, + 4°.2; 21st, 57°.2, + 8°.2; 22d, 48°.8, + 0°.1; 23d, 46°.3, − 2°; 24th, 49°.2, + 1°.3; 25th, 48°, + 0°.5; 26th, 47°.3, + 0°.1. The mean temperature of the air for the week was 50°, being 1°.8 above the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 125° on the 23d, 112½° on the 25th, and 112° on the 21st; on the 20th the reading did not rise above 72°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 33⅛° on the 26th, 36½° on the 23d, and 38° on the 22d. The mean of the seven lowest readings was 39½°.

Wind.—The direction of the wind was S.W., and its strength strong.

The weather during the week was generally dull (though at times fine) and showery; the sky was cloudy.

Lightning was seen frequently during the evening of the 22d, and *fog* prevailed on the 20th.

Rain fell on four days during the week; the amount collected was 0.97 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, October 26, the highest temperatures of the air observed by day were 66° at Blackheath, 64½ at Cambridge, 64° at Truro, and 63⅞° at Brighton; the highest temperature of the air at Bradford was 55⅞°, and at Sunderland was 56°; the mean value from all places was 60°. The lowest temperatures of the air observed by night were 36½° at Eccles, 37° at Nottingham, and 38° both at Leeds and Sunderland; the lowest temperature of the air at Truro was 45°, and at Plymouth was 44°; the mean value from all stations was 40°. The range of temperature in the week was the greatest at Blackheath, 26½°, and the least at Bradford, 16⅜°; the mean range of temperature from all stations was 20°.

The mean of the seven high day temperatures was the highest at Plymouth, 58½°, Truro, 58°, Brighton, 57½°, and Blackheath, 57½°; and the lowest at Bradford, 51⅛°, and Leicester, 52½°; the mean from all places was 54⅜°. The mean of the seven low night temperatures was the lowest at Eccles, 41°, Wolverhampton and Nottingham, both 42⅛°, and Hull, 43½°, and the highest at Truro, 48°, and Plymouth, 47°; the mean value from all stations was 44½°. The mean daily range of temperature was the least at Bradford, 7⅜°, and the greatest at Cambridge and Eccles, both 12°; the mean daily range from all places was 10½°.

The mean temperature of the air for the week from all stations was 48½°, being ⅓° lower than the value for the corresponding week in 1877. The highest were 52° at Truro, 51⅞° at Plymouth, and 51° at Brighton; and the lowest were 46½° at Eccles, and 46⅜° at Wolverhampton,

Rain.—Rain fell on every day in the week at Nottingham, Sheffield, and Hull, and on five or six days at most other places. At Sunderland it fell on two days only. The heaviest falls in the week were at Truro, 2.67 inches, Bristol 2.47 inches, Brighton 1.96 inch, and Plymouth 1.85 inch; and the least falls were at Liverpool, 0.45 inch, and Sunderland 0.13 inch. The average fall over the country was 1.41 inch.

The weather during the week was dull and wet; the sky was very cloudy.

A *thunderstorm* occurred at Cambridge on the 24th inst.

SCOTLAND: *Temperature.*—During the week ending Saturday, October 26, the highest temperatures of the air varied from 61° at Dundee to 54½° at Aberdeen; the mean value from all stations was 57¼°. The lowest temperatures of the air varied from 34° at Edinburgh to 40° at Glasgow; the mean from all places was 36⅞°. The range of temperature in the week from all stations was 20¾°.

The mean temperature of the air for the week from all stations was 46°, being 1° lower than the value for the corresponding week in 1877. The highest were 47° at Dundee and 46⅞° at Glasgow, and the lowest were 44½° at Edinburgh and 45⅜° at Greenock.

Rain.—The heaviest falls of rain were 4 inches at Greenock and 2½ inches at Glasgow, and the least fall was half an inch at both Dundee and Aberdeen. The average fall over the country was 1.34 inch.

DUBLIN. — The highest temperature of the air was 63½°, the lowest 34°, the range 29½°, the mean 46¾°, and the fall of rain 0.62 inch.

JAMES GLAISHER.

WEATHER FORECAST.—The following cable message has been received at the London office of the *New York Herald* from the *Herald* Weather Bureau, New York:—"Depression moving eastward, will probably arrive with considerable energy at British, Norwegian, and affecting French coasts, about the night of November 1, preceded and attended by rains, strong winds, and gales from south to northwest, followed by falling temperature and snows in the northern districts."



Law Notes.

TENANT *v.* RAWLINGS.—At the Bloomsbury County Court on Monday last, before Mr. Judge Russell and a jury, the plaintiff, a horticultural builder, of Willesden, sued the defendant, a well-known mineral-water manufacturer, residing at Chalk Hill House, near Kingsbury, to recover the balance alleged to be due (£26 odd) on a contract account of £174 for the erection of a greenhouse attached to his establishment.

The plaintiff, for whom Mr. Moreton appeared as counsel, stated that so far back as 1873 he contracted to do the work for the defendant, and that the price agreed upon was £174 odd. He had completed the work in question, and had received several payments on account, but when he applied for a settlement of his account in full, he received a cheque from the defendant's architect for £76 3*s.* 1*d.*, and was informed that £26 would be deducted from the entire amount, in consequence of a drain being required to carry off the water from the stokehole, which he had not contracted to do; and in consequence, not getting a settlement in full, the present action was brought.

In cross-examination by Mr. M'Coll, who with Mr. Jones was counsel for the defence, the plaintiff said he had been for many years employed in the erection of greenhouses, conservatories, and horticultural appliances. He did not contract to supply a drain from the stokehole of the greenhouse; he only put 3½-inch bricks in the stokehole, but they could not be expected to resist water. He considered, if the defendant required a drain, it ought to be constructed at his own expense.

In reply to the learned Judge, the plaintiff said he did not know why he did not return the cheque when he found the charge for drainage was deducted from his account; he merely sent a receipt for it, unaccompanied by any letter.

This being the case for the plaintiff, the counsel for the defence urged that the acceptance of the cheque virtually put an end to the present action, and was a tacit understanding that all mutual accounts were settled.

His Honour said he would reserve his opinion on this as a point of law, but would allow the case to go to a jury on the facts of it.

The defendant being called, said he had entered into the contract produced by the other side on the condition that the work was to be done in a workmanlike manner, which, from the evidence of gardeners, architects, and others, proved not to be the case. Had the plaintiff properly constructed his greenhouse the drain in question was not needed; but he left his work in such a state that the boilers were flooded and the greenhouse itself quite useless unless a drain was made to carry the water away.

After skilled evidence had been adduced to show that the plaintiff had not properly executed his work, the learned Judge addressed the jury on the entire facts of the case, and the jury found in favour of the plaintiff for the full amount claimed.

The counsel for the defence applied to the Court to move for a new trial on the point of law reserved, which his Honour at once granted.

Apiary.

FROM the official list of awards made to British exhibitors at the Paris Exhibition, we learn that Mr. C. N. Abbott, Fairlawn, Southwell, has received a silver medal for "Bee-hives and Observatory Bee-hives;" Messrs. George Neighbour & Sons, 127, High Holborn, a silver medal for "Bee-hives;" and Mr. Brice Wilson, Newbury, Berks, a bronze medal for "Observatory Bee-hive."

Enquiries.

He that questioneth much shall learn much.—BACON.

ANGELICA.—I find in my garden an umbelliferous plant which has puzzled me for some time. I now believe it to be Angelica. Is not this used for preserving, and how is it prepared? *H. A. B.* [The stalks and midribs of the leaves are used in confectionary candied with sugar. EDS.]

ARUM, OR AFRICAN LILY.—*A Lady* asks when to put Arum Lilies in heat, to have them ready for Christmas?

Answers to Correspondents.

ABUTILONS: *S. K. B.* The pink one, No. 19, is much the best, being large, of a bright rosy pink, and very distinctly veined with crimson-lake. It should be compared with one named Louis Van Houtte, which we have not at hand. The yellows are not equal to Lemoinei.

APPLES: *U. P.* "Cockpit" and "Hunthouse" are both names of Apples grown somewhat largely in Yorkshire; but, so far as we know, not much known outside of that county. They are both culinary varieties of considerable merit.

ARALIA SIEBOLDII: *W. S.* There is nothing unusual in this plant flowering in the open air. We believe it is perfectly hardy.

BEE-KEEPING: *J. G.* Cheshire's *Practical Bee-Keeping* (*Bazaar* Office, Strand).

BEGONIA DIVERSIFOLIA: *J. Laing & Co.* Your seedlings are very great improvements on the fine old Begonia diversifolia, much larger in size, and richer in the colour of the flowers.

EUCALYPTUS GLOBULUS: *John Steele.* Your plant is correctly named E. globulus. It will assume the character illustrated in the publication you name as it gets older. The Messmate of New South Wales is Eucalyptus obliqua, and E. amygdalina is the Peppermint tree.

FERN SORIFEROUS ON UPPER SURFACE: *W. Hannaford.* The Fern sent is Scolopendrium vulgare marginatum, which not unfrequently bears sori on the upper surface of its fronds.

GLOXINIA: *Ivy Bank.* Your seedling is not altogether a novelty, as similar forms were raised so long ago as 1865—6. In the latter year one named Lady Cremorne was certificated at South Kensington. This was a purple-tinted flower, but we have also met with others with rosy tinting, as in yours. It is one of the best examples we have seen of this peculiar hose-in-hose formation, from the number of exterior tongue-shaped lobes—eight, most of which are deeply divided so that they form quite a frill around the normal corolla.

GRAPES AND PINES: *R. S. T.* Yes, very much superior in both cases, and especially so as regards the former.

GRASSES: *A. H.* The smaller plant is Festuca ovina, but we cannot identify the other without flowers.

MEALY-BUG ON VINES: *T. Baron.* Paraffin has been vouched for as a safe and sure remedy if carefully applied, by so many practical men, that we may safely advise you to use it. As soon as the Vine leaves fall, clear the house not only of them, but also of all other plants that may happen to be therein, and give the stems of the Vines a good washing with the paraffin mixture, following this immediately by a thorough cleansing with pure water. To a wineglassfull of the ordinary paraffin oil of the shops add four gallons of soft-water; mix thoroughly and keep in constant agitation while being used; this may be done by allowing one person to draw and discharge again into the vessel, employing a second syringe for this, while another person draws while the liquid is thus agitated, and discharges it on the Vine stems and over all the woodwork of the house. Wherever it touches the mealy-bug, it is certain death. If on pruning you find any have been left behind, give a similar washing later on, and afterwards paint with Gishurst Compound as a check upon other vermin.

NAMES OF FRUITS: *S. B.* Fearn's Pippin.—*James Cocker & Sons.* 1, Hacon's Incomparable; 2, Marie Louise; 3, Beurré de Capiaumont.—*R. P.* 1, Hughes' Golden Pippin; 2, Doyenné du Comice; 3, not recognised; 4, Knight's Monarch; 5, Bergamotte d'Esperen.—*A. Macintosh.* Your Apples were so much bruised and rubbed as to be quite unrecognisable.

NAMES OF PLANTS: *Enquirer.* We cannot pretend to say if the Coleuses are true to name. The other plant is probably Senebiera didyma, the small Wart-cress.—*E. Wilson.* Nerine undulata.—*P. K.* Epidendrum cochleatum, a very old species, from Jamaica.—*G. Hubbard.* No. 2 is Quercus Cerris (the Turkey Oak); we do not recognise the others.—*R. D. O. P.* Your specimen appears to be a young frond of Goniophle-

bium subauriculatum, and if so will produce drooping fronds 5 or 6 feet long. It is a Goniophlebium certainly.—*T. Baron.* You have not paid any attention to our repeated notice to correspondents not to send more than six plants for naming. 1, Athyrium Filix-fœmina Fieldiæ; 2, Polystichum angulare proliferum; 3, A. F.-f. Frizelliæ; 4 and 5, forms of A. F.-f. multifidum; 6, Scolopendrium vulgare digitatum or flabellatum; 7, S. v. macrosorum; 8, Asplenium præmorsum; 9, A. Fabianum.—*William Sharpe.* 1, Rudbeckia pinnata; 2, Rudbeckia speciosa; 3, Aster Novæ-Angliæ; 4, Achillea decolorans.—*B. & S.* Ourisia coccinea, and Phygelius capensis.—*Harry Bluff.* Chrysanthemum sp.; specimen insufficient.—*J. M., Dublin.* Lavandula dentata. The other is indeterminable without flowers.—*W. P.* Lonicera Ledebourii.—*A. B.* 1, Capsicum annuum; 2, Cotoneaster frigida.—*T. H. N.* Tropæolum tuberosum.—*S. C. Pearson.* Gilia coronopifolia.—*R. P.* Fuchsia microphylla and Anthemis tinctoria.—*A Reader.* Too imperfect, and with incomplete information. It is possibly a pale sulphur-coloured variety of Chrysanthemum coronarium.—*J. McI.* 4, Astrantia minor; 5, Sedum nicæense *alias* altissima. The Asters next week.—*J. Bunn, Hanger Hill.* Hedychium coronarium.

National Rose Society.—The date for the exhibition at Manchester should be Saturday, July 12, not July 14, as we were at first informed.

Packing Grapes: *Adela.* For general purposes we have found no better plan than that of putting the bunches into paper, much in the same way as grocers make up brown sugar, and then packing them in boxes in either bran, cork-dust, or clean chopped straw. A somewhat stiff paper—say ordinary sugar-paper—should be used in preference to that of a more pliable texture, and the fruit must be packed firmly in the box, or under no circumstances will it travel well.

Paraffin: *Jersey Sub.* See reply to T. Baron, given above. We doubt if you could mix it with whitewash or Vine-dressing with advantage, but these are just matters you could at once settle by experiment. It is not necessary to use such a remedy for red-spider, or the ordinary insect pests; but it evidently is useful for killing mealy-bug and scale, and safe if properly used.

Pears: *J. Jones.* The black spots, and cracking of the fruit, are derived from an unhealthy condition of the roots—probably want of drainage.

Slugs: *Limaçon.* Dust the surface of the ground all about, and of the brick floors, with fresh-slaked lime, in fine powder, renewing it frequently, especially after rain. Also scatter finely-sifted coal-ashes in the same way. They do not like to come in contact with either. If they are so troublesome as you say, you must persevere in the means used if you would have any hope of destroying them. Bag all you can besides, and when caught throw them into a vessel containing brine.

Willows: *A. Thomson.* We should think Salix molisima would suit you best; but you had far better write to Mr. Scaling, Basford, Notts, for a catalogue, and then select one or more sorts that would be calculated to do best in the particular position you want to plant.

Errata.—In character of Group 3 of Colchicum (p. 527) for "flowers *large*" read "flowers *small*."—P. 540, under Ferns, read, "is one of the dwarf crested varieties of Nephrodium molle." Under Flower-beds, read, "roots of trees . . . you should cut them well back, &c."

Catalogues Received:—Hippolyte Duval (à Montmorency, Seine-et-Oise, France), Catalogue of Roses.—Messrs. Eug. Verdier & Son (37, Rue Cisson, Paris), Price List of Bulbs, &c.—Maurice Young (Milford Nurseries, Godalming, Surrey), Catalogue of New and Rare Plants, Coniferæ, Hardy Ornamental Trees and Shrubs, Evergreen and Deciduous Trees, Rhododendrons and other American Plants, Roses, Fruit and Forest Trees, &c.—Martin Grashoff (Quedlinburg, Prussia), General List of Seeds, &c.—J. Margottin fils. (Bourg-la-Reine, near Paris), List of New Roses.—William Drummond & Sons (Stirling), Catalogue of Forest and Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

Communications Received.—W. J. C.—A. D.—G. H. V.—T. E.—D. T. F.—H. E. W.—W. T.—Tydia.—P. Simpson.—F. C. H.—R. D.—J. Treseder (received with thanks).—G. G. G.—C. W. C.—B. F.—J. D. G.—South Hants.—W. S.—W. P.—W. E.—A. H.—R. R.—R. G.—D. M.—H. E. (we never saw this particular species fasciated before, but we presume any species might become so).—J. Backhouse & Sons.—J. T. B.—W. S.—W. H. F.

Markets.

COVENT GARDEN, October 31.

Our market has been very quiet during the past week, with business almost at a standstill, the American competition adding considerably to the depression in the Apple trade. Large consignments of St. Michael Pines are reaching us, and we may now expect a steady supply throughout the winter. Kent Cobs remain the same. *James Webber, Wholesale Apple Market.*

Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1	6– 4 0	Melons, each	1	0– 3 0
Cobs and Filberts, lb.	0	9– 1 0	Pears, per doz.	2	0– 6 0
Grapes, per lb.	1	0– 6 0	Pine-apples, per lb.	4	0– 8 0
Lemons, per 100	6	0–12 0			

Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English, each			Garlic, per lb.	0	6– ..
Globe, doz.	2	0– 4 0	Herbs, per bunch	0	2– 0 4
— Jerusalem, bush.	4	0– ..	Horse Radish, p. bun.	4	0– ..
Asparagus, Fr. sprue, per bundle	1	6– ..	Lettuces, Cos, Eng., per score	1	6– 2 6
Beans, French, lb.	0	4– 0 6	Mint, green bunch	0	4– 0 6
— runners, p. bush.	4	0– 6 0	Onions, young, bun.	0	4– 0 6
Beet, per doz.	1	0– 2 0	Parsley, per bunch	0	4– ..
Brus. sprouts, bush.	7	0– ..	Radishes, per bunch	0	1– 0 3
Cabbages, per doz.	1	0– 2 0	— Spanish, doz.	1	0– ..
Carrots, per bunch	0	4– 0 6	— New Jersey, doz.	2	0– ..
Cauliflowers, per doz.	2	0– 3 0	Shallots, per lb.	0	6– ..
Celery, per bundle	1	6– 2 0	Seakale, per punnet	2	6– ..
Chilis, per 100	2	0– ..	Spinach, per bushel	2	0– ..
Cucumbers, each	0	4– 1 6	Sweet Potatos, per lb.	0	6– ..
Custard Mar., doz.	3	0– ..	Tomatos, per dozen	2	6– 3 0
Endive, Batav. dozen	1	6– ..	Turnips, p. p bunch.	3	0– ..

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6– 1 0	Mignonette, 12 bun.	2	0– 6 0
Asters, 12 bunches	4	0–12 0	Myosotis, 12 bun.	1	0– 6 0
Bouvardias, per bun.	1	0– 4 0	Narcissus, paper-white, 12 sprays	2	0– 6 0
Calceolaria, 12 bun.	6	0–12 0	Pelargoniums, 12 spr.	0	9– 1 6
Camellias, per dozen	4	0–12 0	— zonal, 12 sprays	0	3– 1 0
Carnations, per dozen	1	0– 2 0	Phlox, 12 bunches	6	0–12 0
Cornflower, 12 bun.	2	0– 6 0	Primula, double, per bunch	1	0– 2 0
Chrysanth., per doz.	1	0– 6 0	Pyrethrum, 12 bun.	3	0– 6 0
— per 12 bunches	3	0– 9 0	Roses (indoor), doz.	1	6–12 0
Dahlias, 12 bunch	3	0– 9 0	— (outdoor), 12 bun.	3	0–12 0
Eucharis, per doz.	4	0–12 0	Spiræa, 12 sprays	1	6– 4 0
Gardenias, 12 blms.	4	0–12 0	Stephanotis, 12 sp.	3	0–12 0
Gladioli, various, 12 spikes	1	0– 4 0	Sweet Peas, 12 bun.	2	0– 6 0
Heliotropes, 12 sp.	0	6– 1 0	Sweet Sultan, 12 bun.	6	0– 9 0
Hyacinths, Roman, 12 spikes	2	0– 6 0	Tropæolum, 12 bun.	1	0– 3 0
Jasmine, 12 bunches	6	0–12 0	Tuberoses, per dozen	1	0– 3 0

Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	4	0–12 0	Ficus elastica, each	2	6–15 0
Bouvardias, do.	9	0–24 0	Foliage Plants, various	2	0–10 6
Chrysanths, per doz.	6	0–30 0	Fuchsias, per dozen	3	0–12 0
Coleus, per dozen	3	0– 9 0	Hyacin., Rom., doz.	12	0–24 0
Cyperus, do.	6	0–12 0	Mignonette, per doz.	3	0– 9 0
Dracæna terminalis	30	0–60 0	Myrtles, per doz.	4	0–12 0
— viridis, per doz.	18	0–24 0	Palms in variety, each	2	6–21 0
Erica Caffra, p. doz.	6	0– 9 0	Pelargoniums, scarlets, zonal, doz	2	6– 9 0
— gracilis, p. dozen	6	0–12 0	Primulas, per dozen	5	0– 9 0
— hyemalis, p. doz.	21	0–42 0	Roses, Fairy, per doz.	0	9–12 0
Euonymus, various, per dozen	4	0–18 0	Vallota, per doz.	18	0–24 0
Ferns, in variety, per dozen	4	0–18 0			

SEEDS.

London: *Oct.* 30.—Extreme quietness, as might be expected, continues to characterise the market for farm seeds. Samples of home-grown red Clover seed come forward more freely, and are obtainable at a considerable reduction from the prices recently asked—the total fall in value duting the last fortnight being fully 8*s.* to 10*s.* per cwt. As regards American seed there is this week no quotable variation. Current rates received by cable are at a low level; nevertheless buyers here still hold off. In contrast to the stagnation ruling on this side, it is worth noting that the Clover movements in the Western States have thus far been in excess of those of last season. Down to the middle of the present month over 1000 bags of Clover had been shipped from Toledo, Ohio, and nearly 5000 bags from Chicago, Illinois. Advices from New York, Philadelphia, and Baltimore, all speak of short crops in these respective districts. In Alsike and white Clover the business passing on Mark Lane is in very narrow compass. Grasses of all kinds are also for the moment neglected. There is no change in the price of Rape and Mustard seeds; Canary meets a slow inquiry. Owing to the colder weather boiling Peas are in improved request. For feeding Linseed the tone is steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

HAY.

Tuesday's Whitechapel report states that there was a moderate supply of fodder, the demand for which was dull, and prices tending in buyer's favour:—Prime Clover, 100*s.* to 112*s.*; inferior, 80*s.* to 90*s.*: prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; straw, 30*s.* to 38*s.* per load.—Thursday's supply was not very large. The trade was dull, at the following prices:—Prime Clover, 110*s.* to 112*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 38*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 88*s.* to 92*s.*; inferior, 63*s.* to 72*s.*; superior Clover, 112*s.* to 120*s.*; inferior, 88*s.* to 95*s.*; and straw, 40*s.* to 45*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that there were limited supplies of Potatos, and trade, without being lively, was firmer at enhanced rates:—Kent Regents, 100*s.* to 120*s.*; Essex ditto, 80*s.* to 120*s.*; rocks, 65*s.* to 80*s.*; Champion, 70*s.* to 80*s.*; flukes, 120*s.* to 140*s.*; Scotch Regents, 90*s.* to 110*s.* per ton.

COALS.

At previous quotations a steady business was done in house coals on Monday, and owing to the cold weather prices advanced 6*d.* per ton at market on Wednesday. Quotations:—Bower's West Hartley, 14*s.* 9*d.*; East Wylam, 17*s.*; Walls End—Harton, 17*s.* 3*d.*; Lambton, 18*s.* 6*d.*; Original Hartlepool, 19*s.*; Wear, 17*s.* 3*d.*; Vanes, 17*s.* 3*d.*; East Hartlepool, 18*s.* 9*d.*; Salvin's Hutton, 17*s.* 9*d.*; Thornley, 18*s.* 6*d.*

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ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.
Descriptive and Priced Catalogues for 1878 *now ready.*
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FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phyllovera, oidium, and all disease; Planting Canes, 3*s.* 6*d.* to 5*s.* each; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*," and Richard Smith & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6*d.* each. Maiden Trees, 1*s.* 6*d.* each; Bushes, 3*s.* each; Standards, Pyramids, and Dwarf-trained Trees, 3*s.* 6*d.* and 5*s.* each.

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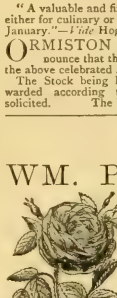
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2,000,000 LARCH, 1 to 3 feet.
2,000,000 SCOTCH, 1 to 2½ feet.
1,000,000 AUSTRIANS, 1½ to 2 feet.
500,000 SPRUCE, ½ to 2½ feet.
Other Trees in smaller lots, all beyond two years twice removed, robust, and finely rooted.
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Grand Specimens, 7 feet, £5 5s.; splendid plants, 5 feet, £3 3s.; very fine, 3 feet, £2 2s.; stout plants, 2 feet, £1 1s.; nice little plants, 1 foot, 10s. 6d.; 13 for 12; 55 for 50; 115 for 100.
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40,000 LARCH, strong transplanted, 3 to 5 feet.
20,000 PRIVET, extra strong transplanted.
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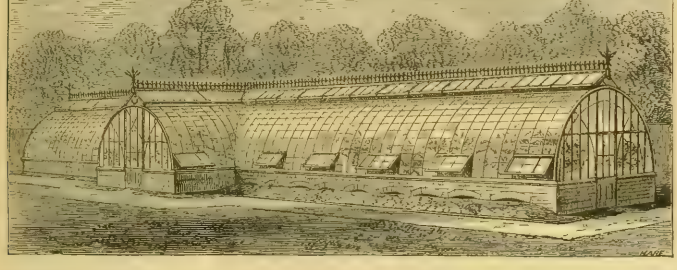
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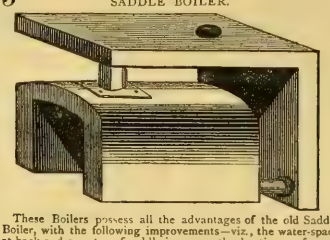
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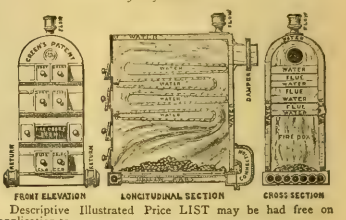
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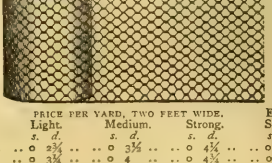
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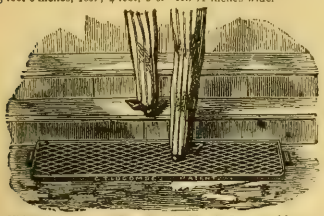


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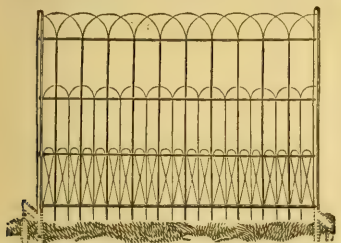
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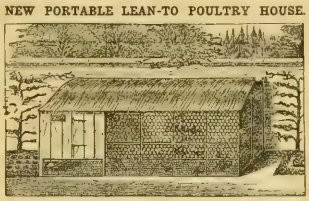
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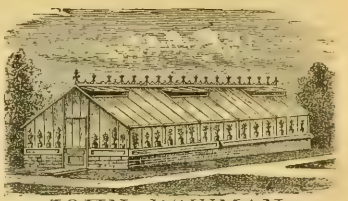
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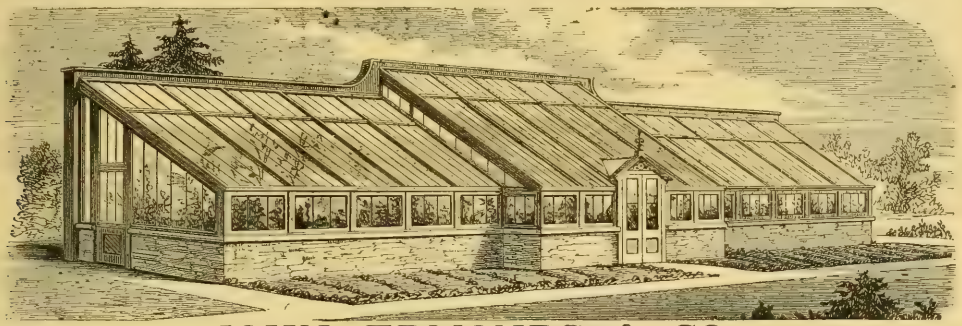




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7	,,	..	..	0	4	6	18 ,,	..	..	0	10	0
8	,,	..	..	0	5	0	19 ,,	..	..	0	10	6
9	,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10	,,	..	..	0	6	0	21 ,,	..	..	0	11	6
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12	,,	..	..	0	7	0	23 ,,	..	..	0	12	6
13	,,	..	..	0	7	6	24 ,,	..	..	0	13	0
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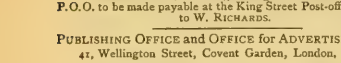
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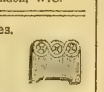
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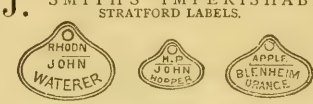


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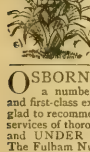
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MANAGER, TRAVELLER, or SHOPMAN.—A thoroughly practical and competent Person of extensive experience will be shortly disengaged from the position of Manager for an extensive Seed Firm, and offers his services in either of the above capacities. Would travel on part salary and commission.—C. M. F., Hurst & Sons, 6, Leadenhall Street, London, E.C.

SHOPMAN (SECOND OR ASSISTANT).—Nine years' experience in London and Provincial houses.—A. E. J., Messrs. Harrison & Sons, Seed Merchants, Leicester.

SHOPMAN (ASSISTANT), or WAREHOUSEMAN.—Ten years' experience in good houses. First-class references. Disengaged.—A. B. C., Stodrig, Kelso, N.B.

SHOPMAN (ASSISTANT).—Age 23; good experience in large Provincial Houses.—A. V., Handsworth, Sheffield.

TO NURSERYMEN and LANDSCAPE GARDENERS.—A German, thoroughly experienced in Drawing Garden Plans, undertakes to Draw them at his Home. Has no objection to a Draughtsman's or a Soft-wooded Propagator's place.—A. M., 6, Orchard Street, Kensington, W.

CLERK.—Well up in Book-keeping, Correspondence, and Accounts.—M., care of Mr. Ottway, 3, Upper Barnsbury Street, Islington, London, N.

TO SEEDSMEN, FLORISTS, and FRUITERERS.—Situation wanted (by seaside preferred). Highest references. Experienced. Salary secondary consideration if progressive.—MITCHEL, 7, Brownlow Street, Haggerstone, E.

KINAHAN'S LL WHISKY.
The cream of old Irish Whiskies. Pure, mild, mellow, delicious, and most wholesome. Universally recommended by the Medical Profession. Dr. Hassal says, "The Whisky is soft, mellow, and pure, well matured, and of very excellent quality."—20, Great Titchfield Street, London, W.

EPPS'S
GRATEFUL
(*James Epps & Co., Homœopathic Chemists.*)
COMFORTING
COCOA.

E. LAZENBY AND SON'S PICKLES, SAUCES, and CONDIMENTS.—E. LAZENBY AND SON, sole proprietors of the celebrated recipes, and manufacturers of the pickles, sauces, and condiments so long and favourably distinguished by the name, beg to remind the public that every article prepared by them is guaranteed as entirely unadulterated.—92, Wigmore Street, Cavendish Square (late 6, Edward Street, Portman Square), and 18, Trinity Street, London, S.E.

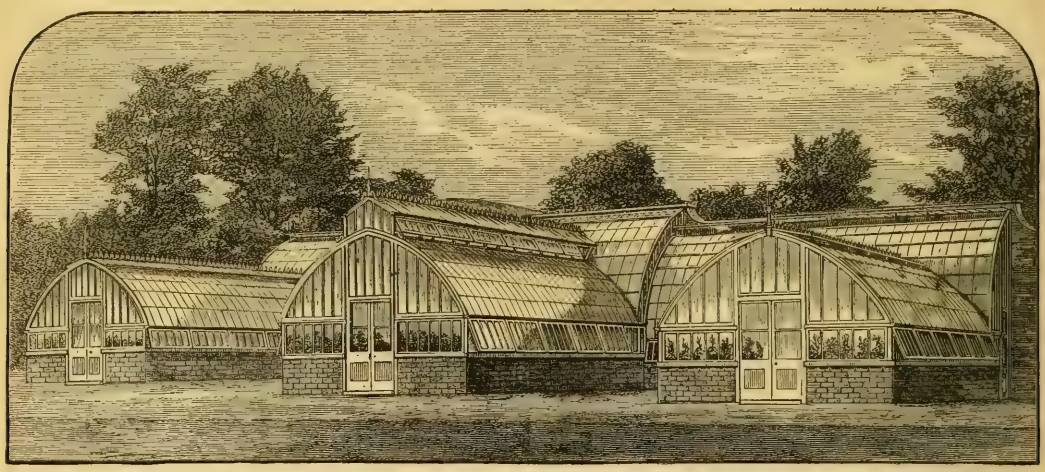
HARVEY'S SAUCE.—CAUTION.—The admirers of this celebrated sauce are particularly requested to observe that each bottle prepared by E. LAZENBY AND SON bears the label, used so many years, signed "*Elizabeth Lazenby.*"

Coughs, Colds, Asthma, Bronchitis, and Consumption are immediately relieved and rapidly cured by DR. LOCOCK'S PULMONIC WAFERS.—From Mr. Cooper, Surgeon, 22, Slaney Street, Enniscorthy: "I have used them myself, and ordered them with marked benefit." To singers and public speakers they are invaluable for clearing and strengthening the voice. They taste pleasantly. Sold at 1s. 1½*d.* and 2s. 9*d.* per box.

DINNEFORD'S MAGNESIA.
The Medical Profession for over Forty Years have approved of this pure solution as the Best Remedy for
ACIDITY OF THE STOMACH, HEARTBURN, HEADACHE, GOUT, AND INDIGESTION,
and as the safest Aperient for Delicate Constitutions, Ladies, Children, and Infants.

DINNEFORD'S MAGNESIA.

HOLLOWAY'S OINTMENT and PILLS.—Outward Infirmities—Before the discovery of these remedies many cases of sores, ulcers, &c., were pronounced to be hopelessly incurable, because the treatment pursued tended to destroy the strength it was incompent to preserve, and to exasperate the symptoms it was inadequate to remove. Holloway's Pills exert the most wholesome powers over the unhealthy flesh or skin, without debarring the patient from fresh air and exercise; and thus the constitutional vigour is husbanded while the most malignant ulcers, abscesses, and skin diseases are in process of cure. Both Ointment and Pills make the blood richer and purer, instead of permitting it to fall into that poor and watery state so fatal to many labouring under chronic ulcerations.



FROM A PHOTOGRAPH.

PLANT and FORCING HOUSES lately erected for F. C. ARKWRIGHT, Esq., WILLERSLEY CASTLE, near DERBY.

See Notice in the "Gardeners' Chronicle," October 19, 1878, page 496.

PETER JAMES PERRY,

HORTICULTURAL BUILDER, &c.,

BANBURY,

Prepares Plans for

CONSERVATORIES,
GREENHOUSES,
PLANT HOUSES,
CUCUMBER and
MELON HOUSES,

VINERIES,
PEACH HOUSES,
PINERIES,
PROPAGATING PITS,
MUSHROOM HOUSES,

AND ALL KINDS OF HORTICULTURAL BUILDINGS,

ALSO FOR THE

HEATING THEREOF BY HOT WATER,

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With the aid of a full and efficient Staff and Improved Machinery he is enabled to supply Horticultural Buildings of the best Material and Design, at Moderate Prices.

THE NURSERIES AND HORTICULTURAL BUILDING WORKS,

BANBURY.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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THE PUBLISHER begs to inform his numerous Correspondents that he has now as many Copies of the Back Numbers, advertised for last week, as he requires

"Gardeners' Chronicle" Office, 41, Wellington Street, W.C.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.

The above Society will hold its ANNUAL EXHIBITION of CHRYSANTHEMUMS and FINE-FOLIAGE PLANTS at the Assembly Rooms, Church Street, Stoke Newington, on TUESDAY and WEDNESDAY, November 12 and 13, when TWO SILVER CUPS and valuable MONEY PRIZES will be competed for. For Schedules and all particulars apply to

JNO. HICKS, Secretary.

Grove Road, Stamford Hill, N.

THE THIRTY-THIRD ANNUAL EXHIBITION (open to all England) of the BOROUGH of HACKNEY CHRYSANTHEMUM SOCIETY will be held at the Royal Aquarium, Westminster, S.W., on TUESDAY and WEDNESDAY, November 19 and 20, when, in addition to a liberal scale of Prizes, FIVE SILVER CUPS (value Five Guineas each), will be awarded.

SCHEDULES may be had on application. Entries will be received up to and including Friday, November 15, by

WILLIAM HOWES, Honorary Secretary,
Frampton Park Nursery, Hackney, E.

KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

The SECOND ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on THURSDAY and FRIDAY, November 21 and 22, when TWO SILVER CUPS (value Ten Guineas) and £53 in money will be offered in prizes. Schedules and List of Special Prizes on application to

T. JACKSON, Hon. Sec.

Fife Road, Kingston, Surrey.

WINTER GARDENS, SOUTHPORT.—The FIRST CHRYSANTHEMUM and FRUIT SHOW will be held on THURSDAY and FRIDAY, November 21 and 22. ENTRIES CLOSE November 18.

Notice.

THE ROYAL MIDLAND ROOT SHOW will be held at Leicester, on November 20 and 23, when SILVER CUPS and other valuable Prizes will be given for FARM ROOTS. All entries free. Forms on application to HARRISON AND SONS, Leicester.

Planting Season.

JAMES DICKSON AND SONS beg to draw attention to their very superior and very extensive Stock of hardily-grown and well-rooted TREES and PLANTS of every description. Priced CATALOGUES post-free

"Newton" Nurseries, Chester.

DESCRIPTIVE CATALOGUE of ROSES, FRUIT TREES, DECIDUOUS and EVERGREEN TREES and SHRUBS, RHODODENDRONS, VINES, CLIMBERS, &c. Free by post on application.

H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

To the Trade.

SEAKALE.—Extra strong, for forcing. Largest Roots in the Trade.
GLOBE ARTICHOKES, TARRAGON, &c., strong roots. Prices on application to

C. PAGE (late Henry Page), St. John's Nursery, Walham Green, Fulham, S.W.

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FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.

CATALOGUES on application.
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English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8-12 per 100; 4 to 4½ feet, 18s per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.

JOHN PERKINS AND SON, 52, Market Square, Northampton.

To Builders and Others.

LIMES—LIMES—LIMES. Some thousands of fine red-twigged Limes of uniform growth, well adapted for Street Planting, Avenues, &c., 8 feet to 14 feet, 75s., 100s., and 120s. per 100. Apply to
OSBORN AND SONS, The Fulham Nurseries, London, S.W.

SCOTCH FIR—8000, 4 to 8 feet; SILVER FIR, 4 to 8 feet.
At a low price.
Price on application.
JAMES OSBORNE, Stars Green, Battle, Sussex.

AZALEAS and CAMELLIAS.—well budded and good forcing plants, now offered for Sale.
JULES DE COCK, Nurseryman, Ghent, Belgium.

CAMELLIAS.—Six large good sorts for Sale, cheap, well set with bloom-buds and healthy. For particulars apply to
S. WOOLLEY, Nurseryman, Cheshunt, Herts.

For every Description of Fine

NURSERY STOCK, apply to W. H. ROGERS, Red Lodge Nursery, Southampton.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).

THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

STRAWBERRY PLANTS, extra strong and true to name, twelve leading sorts. Price List and Sample Box of Twenty Plants (four sorts), post-free for twelve stamps. C. POCOCK, Nursery, Wincanton.

Roses.

CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready. The Trees are very fine this season.

Fruit Trees.

CHARLES TURNER'S select LIST of the above is also now ready. Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.

CHARLES TURNER'S CATALOGUE can be had on application. The Royal Nurseries, Slough.

WANTED to EXCHANGE for or PURCHASE:—Achimenes (corms), Begonia bulbs, Achillea umbellata, Christmas Roses, Auriculas, Polyanthus, Carnations, Primroses. Send Lists and Prices.

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DICKSONS AND CO., 1, Waterloo Place, Edinburgh.

WANTED, CUTTINGS of EUONYMUS JAPONICA AUREA, EUONYMUS AUREA MARGINATA, and OVATA AUREA.
Price per 100 to
W. F. BOFF, 203, Upper Street, Islington, N.

QUICKS.—TENDERS wanted for the SUPPLY and PLANTING of the above, on about 20 miles of Railway.—For particulars apply to
J. NELSON, 89a, Micklegate, York.

WANTED, a quantity of HAWTHORN HAWS.—Send price per bushel and sample to
JOSEPH GREEN, Nurseries, Garforth, near Leeds.

WANTED, two extra strong PEACH TREES (Noblesse and Royal George), dwarf trained, in fruiting state, about 6 feet across.—Address, with price
J. ROWLAND, Rowleigh, Prestwich.

WANTED, extra strong Standard APPLES—Lord Suffield, and other sorts.
E. COOLING, Mile Ash Nurseries, Derby.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

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J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

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Vines—Vines.

B. S. WILLIAMS begs to announce that his stock of GRAPE VINES is unusually fine, and now ready for seeding out. Particulars and price on application.
The Victoria and Paradise Nursery, Upper Holloway, London, N.

PELARGONIUM VOLUNTE NATIONAL.—The most beautiful large-flowered Geranium ever introduced. Good Plants, 3s. 6d. each; free by post, 3s. 9d.
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JULES DE COCK, NURSERYMAN, Ghent, Belgium, offers DRACÆNA INDIVISA, 16 to 18 inches high, 30s. per 100; D. INDIVISA LINEATA, 12 to 16 inches high, 30s per 100; 100 FERNS, of ten sorts, 25s.

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W. H. ROGERS, Red Lodge Nursery, Southampton, can offer the above, from 3 to 10 feet, at the low price of 10s. to 60s. per 100.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES JACKSON & SONS, "NEWTON" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

CHOICE NAMED RHODODENDRONS.—Fifty Thousand strong bushy plants are offered at £5 per 100, and AZALEAS at 50s. per 100, by
W. H. ROGERS, Red Lodge Nursery, Southampton.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

CHRISTMAS ROSES.—Large consignment of the above just received in splendid condition, and ready for Sale. Price, post-free, on application to
JULES DE COCK, Nurseryman, Ghent, Belgium.

To the Trade

EDWARD HOLMES, Whittington Nursery, Lichfield, offers very fine MANETTI ROSE STOCKS at 21s per 1000, and ROSE DE LA GRIFFERAIE, at 25s. per 1000.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

HOME GROWN LILIUM AURATUM.—Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."

CHARLES NOBLE has just harvested this year's crop, and will give prices on application.
Bagshot.—October 12.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

The Lily Nursery, Ghent, Belgium.

J. VANDER SWAELMEN'S English CATALOGUES of Ornamental Plants, Winter and Spring Flowering Plants, Lilies, and other Bulbs and Roots, can still be had free on application.

Mistleto—Mistleto—Mistleto.

APPLE TREES with MISTLETO, 3s. 6d. and 5s. each for cash with order.
JOHN STEVENS, The Nurseries, Coventry.

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING

GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

SALES BY AUCTION.

Dutch Flower Roots, for Present Planting and Spring Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY and WEDNESDAY, and SATURDAY during NOVEMBER, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Orchids recently Imported.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 12, 50 strong plants of GRAMMATOPHYLLUM ELLISI, growing freely, with strong breaks; 50 OUVIRANDRA FENESTRALIS, with from 10 to 15 leaves each, and 50 strong young plants of RAVENALIA MADAGASCARIENSIS.

On view morning of Sale, and Catalogues had.

Odontoglossum crispum, Cattleya gigas, &c.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company, of Colchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 12, extra fine plants of ODONTOGLOSSUM CRISPUM, collected by Mr. William Wallace; also CATTLEYA GIGAS, &c., all in splendid health. N.B. The Odontoglossum crispum are unusually fine, and are the result of careful selection on the part of the Collector.

On view morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 12, a Collection of ESTABLISHED ORCHIDS, comprising many extremely rare and choice kinds, and including the following:—

Trichopilia crispa	Odontoglossum Rossi majus
Lælia anceps Dawsoni	Dendrobium Ainsworthii
Arundina bambusæfolia	Cirrhopetalum Thouarsii
Oncidium sessile	Cattleya Exoniensis
Dendrobium MacCarthiæ	Pescatorea Dayana splendens
Aerides crassifolium	Masdevallia tovarensis
Cypripedium Druryi	Dendrobium superbiens
Aerides japonicum	Oncidium Balderramæ

On view morning of Sale, and Catalogues had.

Established Orchids, mostly in Flower.

MR. J. C. STEVENS has received instructions from Messrs. Backhouse & Son, of York, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 12, at half-past 12 o'Clock precisely, a Collection of Flowering and Imported ORCHIDS, including some grand examples of the rare Batemannia Burtii, Pescatorea Roezlii, Bollea cœlestis, Cattleya maxima, Odontoglossum nebulosum, O. madrense, Vanda Cathcartii, Lælia superbiens, &c.; likewise fine specimens of the rare Masdevallias bella, coniculata, and radiosa. Also some fine recently imported tufts and masses of the true Epidendrum vitellinum majus (the broad-petalled, large-flowered one), and of the beautiful Odontoglossum Rossi majus, in the finest health. A large number of plants are in bloom or showing flower-sheaths.

On view morning of Sale, and Catalogues had.

Bulbs and Plants from Holland, Roses, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 13, at half-past 12 o'Clock precisely, a consignment of rare SHRUBS and TREES from Holland, specimen CAMELLIAS and AZALEAS, 500 standard and half-standard ROSES, and an importation of HYACINTHS, TULIPS, CROCUSES, IRIS, NARCISSUS, LILIUM, RANUNCULUS, JAPONICA, and other BULBS, just arrived from well-known Farms in Holland, lotted to suit Trade and private buyers.

On view morning of Sale, and Catalogues had.

Lilium auratum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 14, at half-past 12 o'Clock precisely, 5000 fine bulbs of LILIUM AURATUM, just received from Japan in the best possible condition, and lotted to suit the Trade and private buyers; an importation of ALSOPHILA ASPERA, and 700 CRINUM AMERICANUM; a consignment from the Continent of tuberous-rooted BEGONIAS and GLOXINIAS: 200 AMARYLLIS VITTATA; and an importation of BULBS from Holland.

On view morning of Sale, and Catalogues had.

Unreserved Sale of Dutch Bulbs of superior quality, comprising the finest HYACINTHS, TULIPS, CROCUS, NARCISSUS, JONQUILS, SNOWDROPS, LILIES, &c., together with ten magnificent trunks of CYATHEA DEALBATA, 4 to 6 feet, just breaking.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next, at the Mart, opposite the Bank of England, City, E.C., at half-past 11 o'Clock precisely.

F. AND M. will buy for gentlemen who cannot attend.

Catalogues at 98, Gracechurch Street, E.C.

Loughton, in Epping Forest.

One mile from the Railway Station.

Extensive Five Days' Sale of well-cultivated NURSERY STOCK, in fine condition for removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Wm. Paul to SELL by AUCTION, on the Premises, Sale Nurseries, Loughton, on TUESDAY, November 12, and four following days, at 11 for 12 o'Clock precisely each day, several acres of first-class well-rooted NURSERY STOCK, which is in fine condition, having been kept constantly removed. The Evergreens include 5000 Gold and Silver, Queen, Hodginsii and other Hollies, 3 to 10 feet; 500 Golden and other Yews, 3 to 6 feet; 2000 Cedrus Deodara, 2 to 8 feet; 2000 Thujas of sorts, 2 to 10 feet; 5000 Green and Variegated Box; 3000 Aucubas, 2 to 4 feet; 4000 Laurustinus; 5000 Laurels of sorts, and large quantities of other Coniferæ; a variety of Deciduous Trees and Shrubs, including 8000 Limes, 7 to 12 feet; Planes, Maples, Poplars, &c.; Standard, Dwarf, and Climbing Roses; 65,000 Manetti Stocks, &c.

May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Upper Tooting Park, S.W.

Clearance Sale, the Land being required immediately for Building.

IMPORTANT SALE of extra thriving young NURSERY STOCK, remarkably well grown, consisting of thousands of Ornamental Shrubs and Trees, many very fine Fruit Trees in bearing condition, including Standard and Dwarf-trained Apples, Pears, Plums, Peaches and Nectarines; Hardy Climbers in pots, Standard and Dwarf Roses, large Camellias and Azaleas, Ferns, Palms, and other Stock.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Upper Tooting Park Nursery, S.W., on TUESDAY, November 12, at 11 for 12 o'Clock punctually, by order of Mr. C. Young.

Now on view. Catalogues obtained on the Premises, and at the Auctioneers' Offices, 98, Gracechurch Street, E.C.

Prospect Hill Park, Tilehurst, near Reading.

CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, consisting of large specimen plants of double red and white Camellias, 2 to 8 feet; very fine Azaleas, 6 feet; Euchasis, Begonias in variety; Poinsettias pulcherrima and albida, Gardenias, Crotons, Dendrobiums, 400 store pots of Bedding Geraniums, Fuchsias, Primula chinensis fimbriata (red and white); 300 Adiantum cuneatum, good plants; Roses, Cyclamens, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises as noted, on THURSDAY, November 14, at 1 o'Clock precisely.

On view the day prior. Catalogues of Mr. MOLE, the Gardener, on the Premises; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Exeter.

GREAT SALE of beautifully grown NURSERY STOCK, in fine condition for removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co. to SELL by AUCTION, on the Premises, The Nurseries, Exeter, on TUESDAY, November 19, and three successive days, at 11 o'Clock each day, a considerable quantity of small and medium-sized NURSERY STOCK, comprising several hundreds of unrivalled specimen Coniferæ and Evergreen trees in great variety; also large quanties of Common, Portugal, and other Laurels, Laurustinus, Biotas, Aucubas, Thujas, Pines, English and Irish Yews, Green and Variegated Hollies, Rhododendrons, choice Border Shrubs, Ornamental Trees, a fine assortment of selected Fruit Trees, all root-pruned and carefully prepared for removal, comprising a grand collection of Standard and Pyramid Apples, Standard Pears, also Peaches, Nectarines, Cherries and Plums, in pots, Standard Roses, and other Stock.

The Stock may be viewed at any time. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B.—Messrs. P. & M. beg to call special attention to this extensive Sale, and to the rare opportunity offered thereby to Gentlemen and Noblemen improving their Estates, and to the Trade, and others largely engaged in planting.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Station on the South-Western Railway.

IMPORTANT SALE OF 3 DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

In Liquidation.—Long Cross Nursery.

1½ Mile from the Virginia Water and Sunningdale Stations on the Staines and Wokingham Railway.

MESSRS. R. AND J. WATERER AND SON have been instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 11, and following day, at 12 o'Clock punctually without reserve, the whole of the well-grown NURSERY STOCK on the above Nursery, comprising 11,000 excellent Fruit Trees; standard, pyramid and trained Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, all of the best sorts; 28,000 Mussel Plum, Crab and Pear stocks; 1200 Gooseberries; 23,000 Larch, Spruce, and Scotch Firs, from 2 to 3 feet; Cupressus Lawsoniana, Cedrus Deodara, from 2 to 4 feet; 16,000 Hollies, from 2 to 3 feet; 500 variegated ditto, 14,000 Rhododendron ponticum, 5500 named Rhododendrons, 300 Paul's Double Scarlet Thorn, 8000 Laurels, from 12 to 15 inches; 5000 Yews, from 2 to 3 feet 6 inches; 5600 Aucubas and layers, 9500 Poplars, from 5 to 9 feet; 10,300 Chestnut, from 3 to 4 feet; 1900 Beech and Birch, from 2 to 5 feet; 7000 Manetti Stocks, 500 Climbing Roses, 1000 Deutzia gracilis, quantity of Ornamental Shrubs, and other plants. The whole of the Stock is in excellent condition for removal, and particularly worthy the attention of the Trade and others.

May be viewed any day previous to the Sale, and Catalogues had seven days prior, on the Premises; of D. M. STEVENS, Esq., Solicitor, The Mount, Guildford, Surrey; and of Messrs. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

In Liquidation.—Wellington College Nursery, BAGSHOT, SURREY.

Near the Wellington Station on the Reading and Wokingham Railway.

MESSRS. R. AND J. WATERER AND SON are instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 18, at 12 o'Clock precisely, the valuable Stock upon the above Nursery, comprising about 3000 mixed Border SHRUBS, 1000 Spanish CHESTNUTS, from 2 to 3 feet; 4000 RHODODENDRONS to name, 1 foot 6 inches to 3 feet; 3400 R. PONTICUM, ditto; 800 AZALEA PONTICA, 3000 MANETTI STOCKS, 500 AUCUBAS, 100 Golden YEWS, 1000 Green and Variegated HOLLIES, from 1 to 2 feet; 150 Pyramid APPLES, 700 CURRANTS, 1500 Scotch FIRS, from 12 to 15 inches; and a large variety of other Plants, including CEDRUS DEODARA, PINUS INSIGNIS, THUJA LOBBII, LARICIO, SPIRÆA, LAURELS, &c.

May be viewed and Catalogues had seven days prior to the day of Sale, on the Premises; of D. M. STEVENS, Esq., Solicitor, The Mount Guldford, Surrey; and of Messrs. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

Fairlawn, Acton Green, W.

A few paces from the "Old Pack Horse," Turnham Green.

SECOND PORTION.—Metropolitan District Railway, Extension from Hammersmith to Ealing.—To Noblemen, Gentlemen, English Timber Dealers, Builders, Contractors, Pianoforte Manufacturers, Owners of Ornamental Gardens, Nurserymen and others.

Sound Timber TREES, Standard ROSES, and Ornamental SHRUBS, beautifully worked; Turf on 2 acres of Lawn and nearly 3 acres beyond (unequalled for ordinary lawn purposes—most of the Specimen Shrubs were supplied by Messrs. Veitch & Co. to the order of R. Attenborough, Esq.); and other attractions of the Kitchen Garden and Orchard; the sound Stock BRICKS forming the nearly new brick wall 530 feet long, Stone Piers, with handsome carriage and entrance gates, lamps complete, for removal and re-erection.—CLEARANCE SALE for the formation of the new roads and extensive Building Estate, being at and adjoining the new Railway Station now in course of erection.

MR. J. A. SMITH has been favoured with instructions to SELL by AUCTION, on the extensive grounds as above, on THURSDAY, November 14, at 11 for 12 o'Clock precisely, in consequence of the number of lots, the whole of the very sound TIMBER TREES, 7000 exquisitely worked and very rare flowering and other SHRUBS and PLANTS, close to the road, and the whole easy and safe for removal, comprising 18 capital Elm Trees, 12 Limes, 26 Chestnuts, 6 Acacias, 7 Sycamores, 5 Oaks, and 8 Walnut Trees: also the fine old Cedars and Yew Trees, about 700 Shrubs and Plants (splendidly grown and many specimens), 200 FRUIT TREES of finest sorts, 500 Currant and Gooseberry Trees, 500 Strawberry Plants, &c.; also 4 tons of Mangel Wurzel, Seakale, Rhubarb, Asparagus, and very fine specimen WATER LILIES, including Victoria Regina and others. The whole are strong and healthy, and can be removed and replanted with the certainty of future growth, giving effect and value to an estate which time and exquisite taste alone can produce

May be viewed two days prior and morning of Sale. Catalogues may be obtained at the Lodge; at the "Old Pack Horse," Turnham Green; "Star and Garter," Kew Bridge; and at Mr. J. A. SMITH'S Auction, Land and Estate Offices, 58, King Street East, Hammersmith, W.

The Nurseries, Warminster, Wilts.

IMPORTANT NOTICE of an EXTENSIVE SALE of SUPERIOR NURSERY STOCK.

MR. W. ABRAHAM is instructed to SELL by AUCTION, at the above Nurseries, by order of the Executors of the late Mr. George Wheeler, without reserve, on MONDAY, November 18, and four following days, at 12 o'Clock each day punctually, a large quantity of superior NURSERY STOCK, consisting of Rhododendrons, Azaleas and other American Plants, Standard, Bush, Pyramid and Espalier Fruit Trees; Standard and Dwarf Roses, Standard Ornamental Thorns in variety; Purple, Crested and other Beech, Cedrus Deodara, Spruce and Silver Firs, English, Irish and other Yews; Arbor-vitæs, Cupressus Lawsoniana, Cryptomeria elegans, Picea Nordmanniana and other Coniferæ; Limes, Chestnuts, Laurels, Aucubas, Tree Box, Laurustinus, Privet, Clematis, Hardy Border Plants, Bulbs, Rhubarb, Strawberry Plants, and a variety of other Nursery Stock.

Catalogues to be obtained at the Nurseries, Warminster, or of the Auctioneer, Goldworth House, Woking, Surrey.

The Stock, which is in good, healthy condition, fit for immediate planting, may be viewed seven days prior to the Sale, and will be found worthy the attention of gentlemen intending to plant.

The Shawe Nurseries, Melbourne, near Derby.

To PLANTERS, NURSERYMEN, and OTHERS.

MESSRS. OLIVER, NEWBOLD AND OLIVER, respectfully give notice that they are instructed to SELL by AUCTION, on the Premises, the Shawe Nurseries, Melbourne, near Derby, on WEDNESDAY, November 27, at 11 o'Clock, the whole of the superior and extensive NURSERY STOCK, consisting of 1,190,000 Quick, 87,000 Larch, 15,000 Hollies, 1000 Irish and English Yews, 5000 Scotch Firs, 600 Aucuba japonica, 18,000 Gooseberry and Currants, 88,000 Privet, 18,000 Spruce. The whole of the Stock is young, well-grown, clean, and in excellent condition.

Descriptive Catalogues ten days previously to the Sale, may be had on application at the Nurseries, Melbourne; or at the Offices of the Auctioneers, Wardwick, Derby.

TO LET, with Immediate Possession, a thoroughly genuine FLOWER, SEED, BULB, and FRUIT BUSINESS, with small Nursery, &c. The whole very compact and in full working order. Incoming by valuation. Address for particulars

B., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

CHRYSANTHEMUMS.—Our Collection (which includes all the new varieties of the past season) is now in full bloom. An inspection invited.

T. JACKSON AND SON, Nurserymen, Kingston, Surrey. Nursery adjoining the Kingston Station, L. & S. W. Railway.

Three of the Most Beautiful Lilies.

CHARLES NOBLE will send by post, on receipt of 5s. in stamps, three dozen Seeds of LILIUM GIGANTEUM AURATUM and CZOVITSIANUM, with directions to raise your own Lilies instead of importing.

Bagshot.

RASPBERRY CANES for SALE.—About 20,000 to be had cheap.

For further particulars apply to

H. THORNTON, 1, Maxwell Road, Fulham, S.W.

STANDARD ROSES.—Clean, straight stems, with good heads and well rooted, of leading varieties only. List of sorts and price on application.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

Islington, N.—There are a few lots of ORCHIDS and OTHER PLANTS remaining uncleared from the Sale held on October 30 at the Northampton Park Nursery, Douglas Road North, Islington, N., opposite Canonbury Railway Station, North London Railway. They may be SEEN and PURCHASED on application to the

FOREMAN, on the Premises.

Amateur Exhibitors' Collection of Roses.

PAUL AND SON have the above, consisting of 1500 Standards of the leading show varieties. List of sorts and price for the whole on application to

PAUL AND SON, The Old Nurseries, Cheshunt.

To the Trade Only.

SNOWDROPS of extra quality, clumps of CHRISTMAS ROSES well set with buds, SPIRÆA JAPONICA, GLADIOLUS BRENCHLEYENSIS; BEGONIAS, choice, named, and hybrid seedlings; HYACINTHS, TULIPS, CROCUS, fine home-grown LILIUM AURATUM, LILY OF THE VALLEY clumps, &c., of finest quality only, at low prices.

F. SANDER AND CO., Seed Growers, St. Albans.

The Oxford Roses.

GEORGE PRINCE'S descriptive CATALOGUE of Dwarf Roses on the Cultivated Seedling Brier, now ready, post-free on application.

A choice collection of HARDY PERENNIALS and TEAS in 7-inch pots, well established, at 36s. per dozen.

This is the only establishment in England where the Rose is grown exclusively on the above stock.

14, Market Street, Oxford.

We have about Five Hundred

POT VINES, 2-yr. old, grown without bottom-heat. For strength, vigour, ripeness, and prominence of eyes we believe they cannot be surpassed. The Trade supplied. We shall be glad to send samples to any address: 5s. each.

THE MANAGER, St. George's Gardens, St. Anne's-on-the-Sea, Lancashire.

DUTCH BULBS for BEDDING.
SPECIAL OFFER.

HYACINTHS, assorted in several distinct shades, 25s. per 100
CROCUS, splendid roots, in four colours, 14s. per 1000
TULIPS, in four fine named varieties, 8s. per 100
TULIPS, single, early, mixed, 5s. per 100
No charge for package.
JAMES TYNAN, 68, Great George Street, Liverpool.

EWING AND COMPANY offer to the Trade and large buyers:—

APRICOTS, dwarf maiden and dwarf trained, in quantity, extra fine.
TEA and NOISETTE ROSES, in pots, very fine, of nearly all the best kinds, in quantity.
GOOSEBERRIES, of best kinds, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted.
CURRANTS, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted, of Black Naples, Red Dutch, and other best sorts.
LIMES, large-leaved red-wigged variety, with straight stems, good pyramidal heads, and (most important of all) good fibrous roots.
The Royal Norfolk Nurseries, Eaton, near Norwich.

Cabbage and Lettuce Plants.

H. J. HARDY, Stour Valley Seed Grounds, Bures, Suffolk, begs to offer a quantity of strong, healthy, autumn-sown plants:—

ENFIELD MARKET and CARTER'S HEARTWELL, 3s. per 1000.
RED DUTCH, 5s. per 1000.
LETTUCE.—Brown Cos, Siberian, and Champion, 5s. per 1000.

Package and carriage free for 5000 upwards (or plants equivalent), to any Railway Station in England.

Reference required from unknown Correspondents.

Roses, Primulas, Vines, &c.

EDWIN HILLIER offers as below, all well-grown stuff:—ROSES, Tea, on Brier, 48-pots, 50s. and 60s. per 100; Dwarf Hybrid Perpetuals, from ground, 25s. and 30s. per 100; Queen of Bedders, 75s. per 100. 1000 PRIMULAS, Double White, 48-pots, 75s. per 100. POT VINES, very fine, 30s. and 60s. per dozen. CLEMATIS, best kinds, 8s. per dozen. MANETTI STOCKS, very good, 21s. per 1000. Cash required from unknown persons.—Nurseries, Winchester.

SPECIAL OFFER.—A quantity of Oak, Elm, Chestnut, Poplar, Birch, Lime, Ash, Sycamore, &c., 12 to 20 feet, straight stems and good heads; Standard Portugal Laurels, 4 to 6 feet stems, fine splendid heads; Pinus austriaca, Cembra, excelsa, and Strobus, Cedrus Deodara and atlantica, Wellingtonia, &c., 5 to 9 feet, splendid specimens. Put on Midland or G. W. Railway. Prices and Catalogue on application.

J. PRICE, Stanley Nursery, Stonehouse, Gloucestershire.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.

CATALOGUES on application.

To the Trade.

ROSES.—Standard and Half-Standard, extra fine. Low quotation with Purchaser's selection.

MARECHAL NIEL, in pots, very fine, 75s. per 100; second size, 65s. per 100.

LIST of varieties on application.

GEORGE COOLING, Nurseryman, Bath.

FOR FORCING.

SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.

By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.

CHARLES NOBLE, Bagshot.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.

Hale Farm Nurseries, Tottenham, London.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.

VINES—VINES—VINES.

Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d.; Planting, 2s. 6d. to 5s.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.

Seed Growing Establishment, Wisbech.

Planting Season.

R. AND A. MORRISON'S Stock of LARCH and SCOTCH FIR (true native), and other FOREST TREES, being this year very large and fine, they are enabled to make low quotations for large quantities.

CATALOGUES on application.

The Nurseries, Elgin.

Offer to the Trade.

FORCING ASPARAGUS.—The Subscribers have to offer the produce of half an acre extra strong Asparagus with splendid crowns, suitable for forcing. Samples and price on application to

DICKSON, BROWN AND TAIT, Seed Merchants, 43 and 45, Corporation Street, Manchester.

A. RATHKE AND SON, The Nurseries, Praust, near Danzig, Germany, have to offer, for cash:—

EUONYMUS EUROPÆUS, 1 yr. seedlings, 9s. per 1000, £4 per 10,000; 2-yr. seedlings, 13s. 6d. per 1000, £6 per 10,000; 3-yr. seedlings, 18s. per 1000, £8 per 10,000.

For Winter and Spring Flowering.

TWELVE SPLENDID LARGE PLANTS in 48-pots, comprising HEATHS, AZALEAS, CYCLAMENS, PRIMULAS, SOLANUMS, BOUVARDIAS, and others sent to any address for 12s.; twenty-five do., 24s.

MORLE, Market Grower, 50, Kennington Park Road, S.E.

LAURUSTINUS.—Common and Large-flowering (Viburnum hirtum), average 1½ foot, 7s. 6d. per 100, 60s. per 1000.

WILLIAM ABRAHAM, Nurseryman, Limerick.

To the Trade.

SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.

H. AND F. SHARPE, Seed Growers, Wisbech.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

Planting Season.

E. BURGESS begs to offer the following strong Standard APPLES, PEARS, ROSES, Standard and Dwarf Trained APRICOTS, Turkey and English OAK, English and Scotch ELMS, LIMES up to 12 feet, BEECH up to 7 feet, SWEET BAYS, APPLE STOCKS, and a general NURSERY STOCK.

Prices on application.

The Nurseries, London Road, Cheltenham.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.

HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown: 14s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
" double white, 12s. to 18s. per 100.
" ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.
DIELYTRA SPECTABILIS, 20s. to 25s. per 100.
LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
" " ROSEUM, 20s. to 26s. per 100.
" " RUBRUM, 20s. to 26s. per 100.
CHINENSE TIGRINUM, 15s. to 8s. per 100.
CHRISTMAS ROSES, (Helleborus niger), fine, 40s. to 160s. per 100.

Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.

BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

TO LARGE PLANTERS, CEMETERY CONTRACTORS, &c.

YEWS, English, 2 to 3, 3 to 4, and 4 to 5 feet.
LAURELS, common, 2 to 3, 3 to 4, and 4 to 5 feet.
LIMES, fine grown, 3 to 4, 5 to 6, and 8 to 10 feet.
CHESTNUT, Horse, 8 to 10 feet.

Special quotations on application, and sample dozen sent to any part of Great Britain.

GODWIN and SON, Ashbourne, Derby.

ROSES, fine standard, from 15s. to 18s. per dozen, £5 per 100.
" fine dwarf, for beds, 9s. to 12s. per dozen, 60s. per 100.
" fine Tea, in pots, 12s. to 18s. per dozen.
" fine specimens, in 8-inch pots, for forcing, &c., 30s. per doz.
" fine dwarf, Gloire de Dijon, 9s. to 12s. per dozen, 75s. per 100.

The above Roses cannot be surpassed, and the stock consists of upwards of 20,000.

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

LILY OF THE VALLEY, extra strong imported 3-yr. old clumps, warranted full of flowering crowns, 12. each, 10s. 6d. per dozen.
SPIRÆA JAPONICA, strong imported clumps for forcing, 4s. per dozen, 30s. per 100.
CYCLAMEN PERSICUM, strong growing 2-yr. old bulbs, in pots, showing flower, 4s. and 6s. per dozen. Price per 100 on application.
MAIDENHAIR FERNS, large and handsome plants in 32's, 2s. each, or 20s. per dozen.
SOLANUMS, handsome plants, full of berries, 6s. per dozen.

N.B.—Wanted to Purchase (or Exchange for any of the above), Large Plants of EUCHARIS AMAZONICA in pots.

GEO. POULTON, Fountain Nurseries, Angel Road, Edmonton, London.

SPECIAL NOTICE.—MESSRS. RUSH & YEATS, of the Eaton Road and Queen's Park Nurseries, Chester, beg to announce that they have this day DISPOSED OF the whole of their NURSERY BUSINESS, including the Trees, Plants, Stock in Trade, and all other effects belonging thereto, to Messrs. JAMES DICKSON AND SONS, of the Newton Nurseries and 108, Eastgate Street, Chester, to whom Messrs. Rush & Yeats beg to refer all CUSTOMERS for NURSERY GOODS.—October 23, 1878.

Planting Season.

To NOBLEMEN, GENTLEMEN, and the TRADE.

THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to

J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

Fruit Trees.

SCOTT'S ORCHARDIST, the most useful work on Fruit Trees in the English language, free for 3s. 6d.

The Merriott Nurseries contain all the best varieties of APPLES, PEARS, PLUMS, CHERRIES, CURRANTS, GOOSEBERRIES, APRICOTS, PEACHES, NECTARINES, NUTS, FILBERTS, WALNUTS, &c. Trees of all sizes and shapes. Priced LIST free on application to.

J. GEORGE HILL, (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to

LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Conifers.

The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.

Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to

THE MANAGER, Calcot Gardens, Reading.

CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.

Early orders are solicited for the above choice plants. Apply to

THE MANAGER, Calcot Gardens, Reading.

To the Trade.

HURST AND SON have a fine stock of the following:—

DIELYTRA SPECTABILIS
HELLEBORUS NIGER
SPIRÆA JAPONICA
LILY OF THE VALLEY
LILY OF THE VALLEY, crowns.

} strong clumps.

GLADIOLUS BRENCHLEYENSIS, HYACINTHS, TULIPS, CROCUS, and all other Bulbs and Roots.

Special Prices on application.

6, Leadenhall Street, London, E.C.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.

CATALOGUES free by post on application.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.

Hale Farm Nurseries, Tottenham, London.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates:—3s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

BUDDED CAMELLIAS and AZALEAS.—Ghent Azaleas, Azalea mollis, Spiræa japonica, Lily of the Valley, Palms and Ferns for decoration, Ficus elastica, Begonias, &c. Also over one hundred large specimen Camellias, choicest varieties, splendid pyramids, 3, 4 to 5 feet high, grown in tubs, and nearly all covered with large swollen buds ready to flower, are offered at the usual moderate charges.

The new illustrated general CATALOGUE forwarded free on application.

A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

For Early Spring Display plant

BACCHUS, darkest and best Red DAISY for Bedding or Edging, 6s. per 100, 40s. per 1000, or sample dozen 12 stamps, post, package, and carriage free for cash to

W. HORLEY, Florist, Toddington, near Dunstable, Beds

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9-inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

CRANSTON & CO.,
NURSERIES, KING'S ACRE HEREFORD.



WM. PAUL & SON,
(Successors to the late A. Paul & Son, Established 1806,)
ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
HERTS,
Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

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FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea-scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease: Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

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LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

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ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

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TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
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CHESTNUT SEED, 60 bushels of New Spanish. Good sample, 3s. per bushel, cash only.
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TRANSPLANTED FOREST TREES.—
2,000,000 LARCH, 1 to 3 feet.
2,000,000 SCOTCH, 1 to 2½ feet.
1,000,000 AUSTRIANS, ½ to 2 feet.
500,000 SPRUCE, ½ to 2½ feet.
Other Trees in smaller lots, all beyoud two years twice removed, robust, and finely rooted.
CATALOGUES, with special offer for large quantities delivered free at any Railway Station south of Dublin.
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LARGE TREES for Immediate Effect, frequently transplanted, and will remove safely.
LIMES, 7 to 8 feet, clean stems, good heads, 8s. per dozen, 50s. per 100; 9 to 10 feet, 12s. per dozen, 75s. per 100.
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ELMS, English, 7 to 8 feet, 8s. per dozen, 40s. per 100.
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THORN, Paul's Double Crimson, 5 to 6 feet, bushy, 12s. per dozen, 75s. per 100.
BEECH, fine, 5 to 6 feet, fine roots, 12s. per dozen, 75s. per 100.
H. M. holds a stock of many thousands of the above.
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Hyacinths, Tulips, Crocuses, &c.

WM. CUTBUSH AND SON beg to announce that they have received their first consignment of the above, in splendid condition. WM. CUTBUSH & SON having again obtained all the First Prizes for Hyacinths, &c., proves that their selection is superior in quality to those offered by many other houses. Catalogues post-free on application.
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October, 1878.

LAND SOLD for BUILDING.
40,000 LARCH, strong transplanted, 3 to 5 feet.
20,000 PRIVET, extra strong transplanted.
10,000 APPLE and PEAR TREES, Standard.
300 000 QUICKS, Seedling, 2 and 3-yr. old.
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2,000 RASPBERRY ROOTS, Myatt's Victoria (very cheap).
Apply to GEO. WINFIELD, Sandhurst Road, Gloucester.

EVERGREENS, fine, large, finely cultivated, standing singly, well furnished to bottom, and certain to remove well:—
PINES, Austrian, 4 to 5 feet, 6s. per dozen, 40s. per 100; 6 to 7 feet, 12s per dozen, 75s. per 100.
YEWS, English, 5 to 6 feet, and 5 to 6 feet through, 7s. 6d. each, 60s. per dozen; 7 to 8 feet, and 6 feet through, 10s. 6d. each.
CEDRUS DEODARA, 3 to 4 feet, fine, 3s. 6d. each, 30s. per dozen; 4 to 5 feet, 5s. each, 45s. per dozen.
SPRUCE, English, 5 to 6 feet and 5 feet through, 3s. 6d. each, 35s per dozen.
CUPRESSUS LAWSONIANA, 4 to 5 feet, 4s. per dozen, 35s. per 100.
YEWS, English, 2 to 3 feet, 4s. per dozen, 20s. per 100.
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TO THE TRADE.
MANETTI STOCKS, strong, clean grown, and well-rooted, 25s. per 1000.
LIMES, 10 to 12 feet, magnificent trees, 8 to 9 inches round a foot from the ground, 25s. per dozen.
ELMS, English, 7 to 8 feet, 20s. per 100; 10 feet, 50s. per 100; 12 feet, extra stout, 12s. per dozen.
HORSE CHESTNUT, 9 to 10 feet, extra strong and straight, 9s. per dozen.
OAK, English, 10 to 12 feet, fine trees, 30s. per 100.
CHERRIES, Morello, extra fine, dwarf-trained, 20s. per doz.
H. BLANDFORD, The Dorset Nurseries, Blandford.

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurel of many varieties, variegated and green Hollies, nearly every variety of Coniferæ, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree; also a fine and select assortment of pyramid and bush Fruit Trees, Apples, Pears, Plums, and Cherries, 12-yr. and 15-yr. old, well transplanted and in full bearing.
Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable. Address
PROPRIETOR, Whitchurch Gardens, Edgware, London.

PAUL'S Hybridised POLYANTHUS, strong blooming clumps in all shades and colours. The above are a beautiful strain, and will make a great display in early spring, price 2s. per dozen, 10s. per 100, 70s. per 1000.
HARDY HERBACEOUS and ALPINE PLANTS at 30s. per 100; a stock of 700 species and varieties.
CYCLAMEN PERSICUM, in pots, blooming plants, 9s. per dozen.
CHRYSANTHEMUMS, covered with flower-buds, in 7-inch pots, 24s. per dozen.
EPIPHYLLUM TRUNCATUM, in six kinds, winter flowering, 18s. per dozen.
CINERARIAS, extra fine plants, in 5-inch pots, 9s. per dozen.
PELARGONIUMS, early flowering, strong cut-down plants, in 5-inch pots, will force into flower by March. These are very fine plants and the new Covent Garden strain in twenty five kinds, such as Acme of Perfection, Duchess of Edinburgh, Mrs. John Wood, &c. Price 12s. per dozen, 75s. per 100.
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CUCUMBER—EMPRESS of INDIA.
J. C. WHEELER & SON
Introduced this fine variety last spring. It has proved itself to be one of the best flavoured and handsomest in cultivation, and good for winter work.
Price 2s. 6d. per packet.

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SEED GROWERS, GLOUCESTER.

NOVELTY!—NOVELTY!
SPIRÆA PALMATA ELEGANS.
Strong Plants, 5s. each; Six Plants, £1; Twelve Plants, £1 12s.

A beautiful hybrid between Hoteia japonica and Spiræa palmata. It produces a large quantity of white flowers with red stamens.

STRONG CLUMPS FOR FORCING.

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HOTEIA (Spiræa) JAPONICA.. ..	0 14	5 17
SPIRÆA PALMATA	4 4	..

ROSE STOCKS for BUDDING and GRAFTING.
ROSA MANETTI, 25s. per 100; £10 per 10,000.
ROSA MULTIFLORA DE LA GRIFFERAIE, 25s. per 100; £10 per 10,000.

HYDRANGEA PANICULATA GRANDIFLORA.
Strong plants, 31s. per 100; £12 10s. per 1000.

TRADE LISTS of HARDY PERENNIALS, NARCISSUS, CONIFERÆ, FRUIT TREES, &c., gratis and free on application.

Orders to the amount of £2 delivered free throughout Great Britain.

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THE GOLDEN VARIEGATED WELLINGTONIA received Four First-class Certificates, Four First Prizes, and One Large Silver Medal. Planted by the following Royal and Noble hands:—



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The Ladies Langdale, Russell, Pollen, Rolle, and Tennison, &c.
Grand Specimens, 7 feet, £5 5s.; splendid plants, 5 feet, £3 3s.; very fine, 3 feet, £2 2s.; stout plants, 2 feet, £1 1s.; nice little plants, 1 foot, 10s. 6d.; 13 for 12; 55 for 50; 115 for 100.
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ROYAL NURSERIES, GHENT,
BELGIUM,
Can make a Special Offer of
CAMELLIA ALBA PLENA, very nice bushy plants, with from our to seven buds, at £7 per 100; with from seven to ten buds, at £8 per 100.

Also the Best Two White varieties of
AZALEA INDICA — Flag of Truce and A. Borsig—1 foot to 1 foot 4 inches high, and 1 foot head diameter, at 2s. 6d each—well-grown plants.

The Camellias and Azaleas above offered are very suitable for either Table Decoration or Forcing Purposes to cut flowers from.

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(ESTABLISHED 1810.)



Cultivators of
FRUIT and FOREST TREES
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

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A SPECIALITY.

Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

SEAKALE, ASPARAGUS AND RHUBARB. —Roots for forcing, exceptionally fine. For special quotations apply to H. THORNTON, 1, Maxwell Road, Fulham, S.W.

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THOMAS S. WARE having just received a fine consignment of the above, begs to offer the same to the Trade. Prices (and Samples if desired) on application. Hale Farm Nurseries, Tottenham, London.

ACHIMENES and GLOXINIAS for SALE very cheap. For names and prices per 100 and per dozen, apply to W. MOXHAM, Wilton, Salisbury.

FOR SALE, a very fine Plant of ALSOPHYLLA EXCELSA, the fronds 5 feet long; and a pair of Specimen LATANIA BORBONICA.—To be seen at Clapham Road Nursery, S.W.

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PANSIES, best varieties, named, including Prince of Wales, Duchess of Edinburgh, Countess of Dudley, Sportsman, Black Gem, 4s. per dozen, 30s. per 100, by post 6d. per dozen extra.
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SPECIAL OFFERS TO THE TRADE.

MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF-TRAINED PEARS.
STANDARD-TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

NEW GIANT CYCLAMEN
(CYCLAMEN PERSICUM GIGANTEUM RUBRUM).



This is a decided aquisition to this now popular Florist Flower, and is sure to become a general favourite. The flowers are equal in size and substance to my well-known strain of giganteum, and are well thrown up above the foliage. The colour is a delicate rose, changing to a bright crimson at the base, being a tint unrivalled, and never before acquired in this giant strain.

It has been awarded two First-class Certificates.

Retail Packets 3s. 6d. and 5s. each.

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VICTORIA and PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

MESSRS. PAUL & SON,
THE OLD NURSERIES, CHESHUNT, HERTS,

Invite Orders for their Carefully Cultivated

STANDARD, HALF-STANDARD, and DWARF ROSES,

On Several Select Stocks.

For Prices see ROSE CATALOGUE, post-free.

Some 1100 First Prizes, gained since 1860, place them undoubtedly at the head of English Rose Growers.

FRUIT TREES.

PAUL & SON have to offer, as grown here, the

FINEST STANDARD ORCHARD TREES in ENGLAND.

PYRAMIDS of APPLES, PEARS and PLUMS, splendidly shaped.

DWARF-TRAINED TREES FOR WALLS,

From three to ten tiers of branches.

For intending Planting of Orchards, or of New Fruit Gardens, these Trees are of greatest service, and require only to be seen to be secured.

SHRUBS.

Specially fine Stocks of

CEDRUS DEODARA, ARAUCARIAS, and the newer CONIFERS.

HOLLIES, both GREEN and VARIEGATED,

3 to 10 feet, in large numbers and of extra fine quality.

CATALOGUES of the above, post-free, on application to

PAUL & SON, THE OLD NURSERIES, CHESHUNT.

AT
SUTTON'S
ROOT SHOW,
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WILL BE GIVEN, IN ADDITION TO NEARLY

£300 for ROOTS,

Special Prizes for Vegetables, Value nearly .. Guineas. 15

Special Prizes for Potatos Value nearly .. 15

SCHEDULE and ENTRY FORM ON APPLICATION.
NO CHARGE FOR ENTRY.

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THE QUEEN'S SEEDSMEN,
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GENERAL NURSERY STOCK.

WOOD & INGRAM'S
GENERAL DESCRIPTIVE
CATALOGUE of NURSERY STOCK,
INCLUDING
FRUIT TREES, FOREST TREES,
HARDY CONIFEROUS and TAXACEOUS PLANTS, EVERGREENS,
DECIDUOUS ORNAMENTAL TREES and SHRUBS,
HARDY CLIMBERS,
ROSES, &c.,
Is now ready, and will be sent free on application.

The Nurseries, Huntingdon.

Come and See.

MY CHRYSANTHEMUMS.—Never was there such a collection in such order and correctness, such a display out-of-doors (430 named varieties flowering), such a stock, such health, such facilities in executing orders as you will find at Swanley. Send for H. C.'s ILLUSTRATED CATALOGUE of the above, and you will find it the most correct, best classified, and contains the best and briefest Treatise on their cultivation ever published. Post-free, six stamps. H. C. is again and has been engaged as Judge every season now for nearly twenty years.

Chrysanthemums.

ALL those preparing Plants for Exhibition or even Decoration, should see H. CANNELL'S FLORAL GUIDE, as it shows you a perfect cut bloom, and how dwarf incurved specimens and standard plants should be to carry off the first prize, together with other invaluable information. Post-free for six stamps.

"*Naseby Woolleys, Rugby.*

"Dear Sir,—At the Northampton Chrysanthemum Show I exhibited very fine blooms, and gained the following prizes:—
Special Prize for 12 Cut Blooms .. .. First.
12 Cut Blooms, incurved.. .. .. First.
6 Cut Blooms, incurved.. .. .. First.
6 Cut Blooms, Japanese, Anemones, and Reflexed First.
6 varieties, 3 in a bunch, large flowers .. .. .. Second.
The above were all cut from plants that I got from you.
"Yours respectfully, H. HARRIS.
"*Gardener to* Capt. G. Ashby Ashby."

Now is the time to see the Zonals in grandest Form AND COLOUR.

NONE without seeing can form the slightest idea of the splendour of my 100-feet house, blazing from end to end with WINTER-FLOWERING ZONAL PELARGONIUMS. Such a display of colour was never before seen. White Vesuvius, Striped Vesuvius, Salmon Vesuvius, Guinea, and Dr. Denny, all grand new colours, &c., almost beyond description. One plant of each sent post-free for 10s. 6d.; twenty-four for winter flowering sent in strong plants for 20s.

H. CANNELL, The Home for Flowers, adjoining the Station, Swanley, Kent.

BY SPECIAL APPOINTMENT TO HER MAJESTY

AND HIS ROYAL HIGHNESS THE PRINCE OF WALES.

PARIS UNIVERSAL EXHIBITION, 1878.

THE GRAND PRIZE, A GOLD MEDAL, AND THE LEGION OF HONOUR

HAVE BEEN AWARDED TO

JOHN WILLS, F.R.H.S.,

FOR HIS SPLENDID COLLECTIONS OF

STOVE and GREENHOUSE and NEW and RARE PLANTS

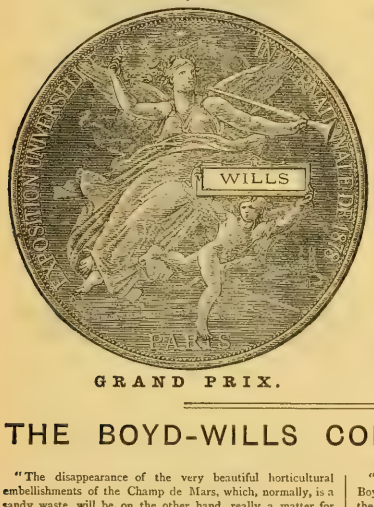
At the PARIS EXHIBITION of 1878.

Upwards of Seventy First Prizes have been awarded to J. Wills in France, during the present year, and also Five First Prizes (Gold Medals) at the Ghent International Horticultural Exhibition, on April 29, 1878.

It will readily be seen from the above facts that J. WILLS has the largest, handsomest, and **most important Collection** of Palms, Orchids, Ferns, and general Decorative Plants in Europe.

Noblemen and Gentlemen wishing to furnish their Conservatories, Winter Gardens, and Fruit Houses should visit J. WILLS' Establishments at Onslow Crescent, Fulham, and Anerley.

PARIS, 1878.



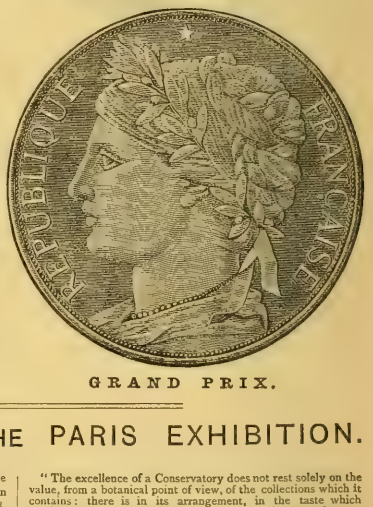
GRAND PRIX.

J. WILLS has the honour to announce that he has received instructions from His Majesty the King of the Belgians to arrange and decorate the interior of His Majesty's magnificent Conservatory, Winter Garden, and Arcades at the Palace of Laeken, near Brussels.

J. WILLS may be consulted in any part of Great Britain or Europe on the construction of all kinds of Horticultural Buildings, the arrangement of Conservatories and Winter Gardens, Planting Fruit Houses, Construction of Grottos, Waterfalls, Landscape Gardening, &c.

At the Great International Horticultural Exhibition, held at Versailles on August 28, 1878, J. WILLS competed in *Seventeen Classes* and secured *Fifteen First* and Two Second Prizes, and the *Grand Prize* of Honour, a splendid Sèvres Vase, presented by the French Government.

PARIS, 1878.



GRAND PRIX.

THE BOYD-WILLS CONSERVATORY AT THE PARIS EXHIBITION.

OPINIONS OF THE PRESS.

"The disappearance of the very beautiful horticultural embellishments of the Champ de Mars, which, normally, is a sandy waste, will be, on the other hand, really a matter for regret. In particular will the delightful pleasaunces of flowers and greenery laid out by Mr. Wills, of the Royal Exotic Nursery, South Kensington, be remembered with applause. Mr. Wills was ready with his exhibits, which really form an integral part of the embellishments of the Exhibition itself, on the opening day, when almost everything pertaining to the Great Show was in such a lamentably backward condition, and the floral treasures in his *parterres* have been changed and renewed, as fresh flowers have come in season, every fortnight since May last. Mr. Wills secured at the Exhibition a Grand Prix for exotic plants, and a Gold Medal for the introduction of new plants; and he has earned during the season no less than Seventy Prizes at different horticultural competitions in France. At the international Flower Show at Versailles in August last the South Kensington horticulturist took Fifteen First and Two Second Prizes, and finally a 'Grand Prix d'Honneur,' consisting of a vase of Sèvres porcelain, given by the French Government. At the Universelle a Gold Medal has likewise been bestowed on Messrs. James Boyd & Sons, of Paisley, for conservatories and greenhouses of novel and superior construction." *Daily Telegraph.*

"Visitors of a horticultural turn of mind will remember the Boyd-Wills conservatory as a feature of prime importance in the horticultural section of the Great Paris Exhibition of 1878. Highly creditable, alike to its builders and its decorator, it stands for the time as a monument—and a grand one too—to British horticultural industry and enterprise.

"When the Messrs. Boyd had finished the structure, as our readers know, Mr. Wills took it in hand, and so arranged the interior in the natural style as to show his handsome specimen plants to the greatest possible advantage, while at the same time securing an artistically good effect when looked at as a whole.

"With so many people seeking admission, it can easily be imagined that the plants have suffered in equal proportion, and that frequent renewal has been a costly necessity; but we are glad to find that Mr. Wills' resources at Anerley and Fulham have been quite equal to the occasion; and it speaks well for the admirable spirit which animates him to know that while the French exhibitors almost systematically kept their houses locked up, the Boyd-Wills conservatory has been kept open almost continuously since the Exhibition opened in May. Such a spirit of enterprise well deserves all praise, and we heartily congratulate both Mr. Wills and the Messrs. Boyd on the success that has attended them." *Gardeners' Chronicle.*

"The excellence of a Conservatory does not rest solely on the value, from a botanical point of view, of the collections which it contains: there is in its arrangement, in the taste which presides over the disposition of the plants, and causes them to produce their effect, whether by massing or by contrast of colours, a decorative art which crowns the whole. The Conservatory of Messrs. Boyd and Wills presents, in this respect, a model of grace and elegance, a brilliancy which can hardly be surpassed. In the midst of a marvellous exuberance of tropical vegetation, in a sort of ideal grove, one might fancy oneself transported under other skies, where a tropical sun invests both plants and flowers with the most gorgeous colours or with the lightest, the most delicate, and the most tender of shades." *From the "Journal Officiel de la République Française."*

"The general arrangements comprise a central raised bed, a walk round, and a continuous boundary border. These are all planted with the most luxurious habited plants of smallish growth, such as Ferns, Palms, Nepenthes, Dracænas, occasionally a stove climber, it may be a Dipladenia or a Stephanotis, with tufts of Lycopods, terrestrial Orchids, Aralias, Musas, and Lomatias. Those who are familiar with stove plants will best understand how rich an effect may be produced by a judicious assortment planted in Mr. Wills' wild way in a house exactly suited to them, and under management that would make the best of any conditions. But, after all, it is impossible to give any adequate idea of the exquisite richness and naturalness of this bijou garden, and our hope is that the Exhibition to be held in London in 1880 will be taken advantage of by Mr. Wills to demonstrate to his countrymen that he can do these things in London quite as well as in Paris." *Gardeners' Magazine.*

JOHN WILLS, ONSLOW CRESCENT, SOUTH KENSINGTON, LONDON, S.W.

SUTTON'S
FLOWER BULBS,

CARRIAGE FREE.

2581 Choice Bulbs in
SUTTON'S £5 5s. COLLECTION
OF BULBS FOR OPEN GROUND.
Carriage free to any Port or Railway Station in United Kingdom.

1049 Choice Bulbs in
SUTTON'S £2 2s. COLLECTION
OF BULBS FOR OPEN GROUND.
Carriage free to any Railway Station or Port in United Kingdom.

539 Choice Bulbs in
SUTTON'S £1 1s. COLLECTION
OF BULBS FOR OPEN GROUND.
Carriage free to any Railway Station in England or Wales.

743 Choice Bulbs in
SUTTON'S £5 5s. COLLECTION
OF BULBS FOR POTS AND GLASSES.
Carriage free to any Port or Railway Station in United Kingdom.

270 Choice Bulbs in
SUTTON'S £2 2s. COLLECTION
OF BULBS FOR POTS AND GLASSES.
Carriage free to any Port or Railway Station in United Kingdom.

136 Choice Bulbs in
SUTTON'S £1 1s. COLLECTION
OF BULBS FOR POTS AND GLASSES.
Carriage free to any Railway Station in England or Wales.

SUTTON'S PRIZES
AT THE
ROYAL HORTICULTURAL SOCIETY'S MEETING,
November 19, 1878.

Seedsmen TO The Queen.



Seedsmen TO H.R.H. the Prince of Wales.

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The attractiveness and exceptional taste displayed during the past season in the Hampton Court Gardens have been alluded to in the most laudatory manner, in a large number of papers. The *Gardeners' Chronicle*, August 17, says : "The grounds are in excellent keeping." The *Whitehall Review* says : "The most artistic specimens of carpet bedding are to be found at Hampton Court."

Mr. John Newton, of the Inner Temple Gardens, whose exhibition of Chrysanthemums is an annual event of great interest to Horticulturists, writes :—

"*As a large grower of Chrysanthemums, and having given your Manure a trial, I am perfectly satisfied with it. The foliage of my Pompons is splendid.*"

The "Field" in an article says :—

"*Amies' Manure is a good Manure. Last year we planted a quantity of Potatos with it, at the rate of a good* 10-*inch potful to the row, about* 30 *yards long, and produced a fine crop. Its effects were observable on the haulm, which was of a darker green colour than where stable manure was employed. A friend of ours applied it as a top-dressing to his Strawberry quarter with excellent results. It has one advantage over Standen's Manure—it is perfectly clean and inodorous. Standen's does not smell offensively after the soil has been once watered; but dusting a Vine border with it, however carefully done, is an almost suffocating operation.*"

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SATURDAY, NOVEMBER 9, 1878.

BULSTRODE.

HARD by Gerard's Cross, in the parish of Hedgerley, three miles from Beaconsfield, the Duke of Somerset has built a new house in the ancient park of Bulstrode. The original owners of the park and surrounding estates were the Saxon Shobbingtons, an ancient family of Bucks. At the Conquest the estate was granted to a Norman Baron, who came down with a thousand men to take possession. At the time of the Conquest, when Saxon equanimity was over-ridden by Norman discipline, there was hardly a stone-wall castle remaining in the country in good repair, and the manor-houses in which the Saxon Thanes resided were ill-adapted for defence; but the Shobbingtons, boldly determined on resistance, entrenched their men in the park, and resolved to hold their land or die in the attempt. The head of the family with his seven sons applied to their friends and relatives for aid, and those ancient families of Bucks, the Penns and Hampdens, marched to their relief with a strong force of bowmen and retainers. The remains of the entrenchments in the park are still seen, and the story runs that they sallied out at night from behind their earthworks, and put the enemy to flight with considerable slaughter. The venerable leader and his seven sons rode on bulls on this occasion instead of horses. Whether this was done to alarm the enemy, or for want of horses, the family records do not state, but the stratagem—if it was such—proved successful; the Norman besiegers were overthrown, and William Conquestor hearing of the affair, and admiring the conduct of the ancient Shobbingtons, sent a herald, and promised them a safe conduct to his Court.

They came on their bulls!—old Shobbington and his seven sons each rode to attend the King on a bull. William swore his usual oath, and wished to be informed how (by the splendour of God) they had dared, &c. Old Shobbington was equal to the occasion; he replied that he and his ancestors had held that estate for centuries, and that if he were allowed to keep it he would swear fealty to King William, now sovereign of England, and serve him as faithfully as he had done his predecessors. William Conquestor liked this speech, and granted the request, and the family was afterwards known as Shobbington *alias* Bulstrode; but in process of time the name of Bulstrode alone adhered, in memory of the above-mentioned feats of arms and policy. The crest of the family, till its extinction, was a bull's head.

The subsequent history of the manor of Bulstrode may well recall the variability of family fortunes. In the thirteenth century it was alienated, and became for a short time the property of the Convent of Burnham. Then the Bulstrodes were reinstated, and then came the house of Whitelock, lawyers and judges through several generations. The famous Lord-Keeper Whitelock held the great seal of the Commonwealth, and earned Lord Campbell's commendation, in his *Lives of the Lord Chancellors*, as one of the most interesting as well as amiable characters of the age in which he lived. The Whitelocks and Bulstrodes intermarried, the former adhering to the Commonwealth and the latter to the King, 600 years after the promise of their

sturdy ancestor had been recorded. A very able and excellent Sir Richard Bulstrode was first a lawyer, and then, as occasion demanded, a military volunteer in the army of Charles I. He became a General, went into exile, at eighty years of age, with James II., and ended his days, by an accident, at the Court of St. Germains, aged 101.

This fine old descendant of the stout Thane Shobbington who bestrode the bull, walked twelve miles of a morning and studied twelve hours a day at more than fourscore years of age. He wrote the lives of his three Royal masters, the two Charleses and the second James, and wrote a capital letter on retirement which must have been inspired at Bulstrode. In this essay he recommends his son to avoid in any way impairing the tranquillity of his mind or body, and recommends "sliding off from the world before the world slips off from us"—an indefinite expression, which must mean before the age of 101. This noble specimen of the race, who gave such sound advice about retirement, and led such an active life—dying at last through indisposition which his physician would have relieved had he been at hand—was the last of the Bulstrodes who held the manor. In him exit the last of the Bulstrodes. The Whitelocks departed too, in the same seventeenth century, and a new family came on the stage.

Passing over an interloper, the notorious Judge Jefferies, who built a red-brick mansion here—blood-stained, his neighbours whispered—we come to more worthy and permanent owners, the Bentincks. The founder of this family, the first Earl of Portland, purchased Bulstrode, and died there, and the remains of Cromwell and his friends having been ejected at the Restoration from the vault under the great east window of Henry VII.'s Chapel in Westminster Abbey, the earl was buried there with others of his family.

The duchess of the first duke, son of the first earl, delighted in Bulstrode as a summer residence, lived there half the year, and rendered the place famous by the practice of a new art—that of ornamental gardening, which Lord Cobham pursued at Stowe about this time, and which Pope and Horace Walpole encouraged by their writings. The park of Bulstrode is one of the most charming and commanding that can be imagined; it does not contain a single level acre, and the view from the heights and hills are all delightful; some are bounded by the woods of the estate, and some command more distant scenery, the castle and forest of Windsor, and the Surrey hills. The timber is still fine—it was then magnificent; and the park having long been the glory of Buckinghamshire, the Duchess of Portland, assisted by Repton, made her gardens as famous. The grove on the western side of the house still bears traces of ornamental planting of that perlod, but the taste has not been continued.

Since this narrative cannot be eked out and completed down to date by gardening details, there may be room for the anecdote of Dick Turpin robbing the Duke of Portland here in his own park. The Duke was in his carriage, attended by persons on horseback, according to the custom, when Turpin rode up, with signs of haste and urgency, pointing to a roll of paper which he held in his hand. He motioned to the attendants to stand aside, and they obeyed, believing him to be a messenger of State, their master at that time holding high office. Dick thrust his head well into the carriage, levelled the roll of paper and the pistol within it at the Duke's head, and whispered hoarsely "Your money and your watch on the instant, or your life!"

The Duke judiciously gave Turpin what he could very well spare, and the latter then drew back, bowing ceremoniously, and making sundry gestures as if he were receiving his Grace's commands: he then galloped off. The daring feat was accomplished for a wager.

The old house of the Portlands had remained dismantled since their time; the present Gothic mansion of the twelfth Duke of Somerset again confers on the park and neighbourhood the advantage of a resident owner. The estate was obtained by the present family in 1810, when the eleventh Duke of Somerset bought it of the fourth Duke of Portland.

When the pleasure-grounds were formed, 150 years ago, many of the new exotics were planted. The most remarkable specimen is the Iron Tree (Planera Reichardi), whose dozen leading branches, breaking from the ground, break again and again, and form a leafy pile of spray 70 feet high. The Austrian Pine is about 11 feet in circumference, the deciduous Cypress 5 feet, and the Turkey Oak 16 feet at 5 feet from the ground, with an unbroken bole of 22 feet. Mr. Jesse speaks of this tree as the largest he had seen of the kind. There are large Silver Firs, Tulip trees, and Catalpas. The park contains 790 acres, and there is an adjoining wood as large, another 200 acres in extent, and smaller ones on the estate. *H. M.*

New Garden Plants.

MASDEVALLIA CAMPYLOGLOSSA, *n. sp.**

A small-flowered species, much like Masdevallia coriacea, Lindl.; but its flower is only 0.018 m. long, greenish-white, with nine rows of black purplish dots over the nerves, giving the impression of streaks. The tails are narrower by-the-by, and split near half the length of the perigones. The petals are ligulate-acute, and the very long, rather cartilaginous, narrow, acute lip bears a small angle on each side before its apex. It is whitish, with three violet stripes. The leaf is 0.09 m. long and 0.015 broad, the base stalk-like, very narrow, though the length of 0.025 m. Its origin, Stevens' rooms. I have to thank Messrs. Veitch for it. *H. G. Rchb. f.*

MAXILLARIA NEOPHYLLA, *n. sp.*†

This is a small botanical Orchid, whose merit is not to have a sessile leaf on the bulb but one with a long stalk. It is a dwarf plant, since the greater leaf is 0.07 m. long by 0.018 m. broad, very strong, thick, cartilaginous, unequally acute, on a very small rugose nearly lenticular bulb. The peduncle is covered with fine dark brown sheaths, and the bract is very wide, covering the base of the flower, which latter has a small chin, acuminate sepals and tepals whitish-yellow, with numerous brown spots, which are very small. The lip is trifid, the side laciniæ angular, the anterior lacinia ligulate acute, produced; there is also a flat triangular callus between the side laciniæ. The very short column has small short fringes around the androclinium. It comes from New Grenada. I had it from Messrs. J. Backhouse & Son, where it is grown by Mr. Marshall. *H. G. Rchb. f.*

DENDROBIUM D'ALBERTISII, *Rchb. f., supra*, 1878, ix., p. 366.

This is just before me from Mr. Williams, Victoria and Paradise Nursery, a special focus of Dendrobia now-a-days. It is a nice thing, being of a new shape, though not a grand Orchid. The triangular sepals are white, with some greenish hue at their tips, and a green line on the back of the chin. The petals are linear spatulate, much longer, of a very fresh green, shining. The lip is trifid, the side laciniæ blunt, triangular, the middle one ovate-acute, with violet purplish veins, part of which are keeled on the sides as well as along the central line.

The stem is much in the way of that of Dendrobium crumenatum, Sw. It is thick, obscurely square, with eight blunt angles over its thin base, and tapers above. When the leaves have fallen the flowers appear. The inflorescences appear to be very few flowered. We must wait for the solution of this question till Mr. Williams has fully established some plants, as we cannot expect the inflorescences to be fully developed after a long journey.*

The antennifera group consists now of four species Two have broad transverse anterior laciniæ—Burbidgei and minax; two have it ovate-acute—antenniferum, Lindl., and this, d'Albertisii. This last differs from the original species by the shortness of the flowers, all parts of which are broader; by the strong skin, so narrow and thin, in the old species; and last, not least, by the distinct venation.

As far as I know this is the first case of a species of this very original group flowering in Europe. *H. G. Rchb. f.*

* *Masdevallia campyloglossa*, n. sp.—(Coriaceæ.)—Folio a petiolari basi cuneato-oblongo ligulato obtuse acuto: pedunculo unifloro; bractea arcta brevi; mento obtusangulo; sepalis sensim attenuato caudatis, semifissis, conniventibus; tepalis ligulatis acutis; labello cartilagineo lineari apice inflexo; marginibus revolutis; utrinque ante apicem obtuse angulato; columna clavata.—Sepala alboviridula lineis punctorum atropurpureorum novenis. *H. G. Rchb. f.*

† *Maxillaria neophylla*, Rchb. f., n. sp.—Affinis M. pullæ, Rchb. f. Folio in pseudobulbo lenticulari anguloso longe petiolato oblongo inæqualiter bilobo crasso cartilagineo; pedunculo dense vaginato; bractea cucullata ampla floris basin tegente, mento abbreviato; sepalis lanceo-acuminatis; tepalis subæqualibus (0.02 m. longis); labello bifido; lacinis lateralibus angulatis medianis callo triangulo interjecto antice, lacinia media porrecta ligulata acutiuscula; androclinii limbo ciliolato.—Flores pallide ochroleuci maculi minutis brunneis innumeris.—N. Grenada. Ex d. Backhouse.

* I possess by Mr. Williams' kindness a wild specimen with leaf. This is rather small, 0.06 m. long, 0.015 m. broad across the base, and attenuated towards its acute apex.

BALLOTA ACETABULOSA.

A VERY striking herbaceous plant or undershrub, native of the Levant, but hardy in English gardens, to which it was introduced as long ago as 1676, though it is by no means commonly met with. The height of this Labiate is about 18 to 24 inches, the whole surface covered with felted hoary down. The leaves are 1½ by 1 inch, suborbicular or subcordate ovate. The flowers are produced in late summer in the axils of the uppermost leaves, and are chiefly remarkable for the large membranous calyx, which forms a sort of frill around the lilac corollas, which are very similar to those of the common purple Dead Nettle, or to those of the Black Horehound (Ballota nigra) of our hedgerows. It is also closely allied to the common Horehound. The specimen here figured (fig. 100) was gathered in the rich collection of Sir George Macleay, at Bletchingley.

PROPOSED COLONIAL MUSEUM FOR LONDON.

THE following letter has been addressed to Her Majesty's Commissioners for the International Exhibition of 1851, by Mr. Wills, and will be of special interest to horticulturists in so far as it refers to the projected International Horticultural Exhibition of 1880. The realisation of Mr. Wills' scheme is very much a question of "ways and means":—

"Your Royal Highness, my Lords and Gentlemen,

"In one portion of the address presented to your Royal Highness by the Colonial Commissioners at the British Embassy yesterday, they very wisely suggested a Colonial Museum for London, a suitable building in which the products and manufactures of Her Majesty's distant possessions might at all times be on view.

"Your Royal Highness was evidently favourably impressed with the idea, and promised to give the suggestion your support.

"Should it be determined to erect such a building, no better site could be selected than the lower or south end of the Royal Horticutural Society's Gardens at South Kensington, and no more fitting opportunity than the present could be found for arranging the matter, seeing that a severance of the connection between Her Majesty's Commissioners and the Royal Horticultural Society is near at hand.

"A building very similar to the Palace of Industry, in the Champs Elysées (the building erected for the Paris Exhibition of 1855), would be well suited for such a purpose, and the central or glass covered portion of the building would be well adapted for horticultural and other exhibitions of a similar character.

"A committee of the leading horticulturists in England have met on several occasions during the past summer, and discussed the question of holding a grand International Horticultural Exhibition of Flowers and Fruits in London in 1880. Myself, with three other horticulturists, were appointed the site committee.

"The portion of the gardens above named was the site chosen by us for the great International Horticultural Exhibition of 1880.

"Some correspondence has taken place between the above committee and Her Majesty's Commissioners of 1851 on the subject. I would therefore suggest an amalgamation between the Colonial Commissioners and the committee of the International Horticultural Exhibition.

"On reading the address of the colonial deputation and your Royal Highness' reply, it occurred to me that it would be a great advantage not only to the colonies, but that horticulture, which is becoming an important industry, would also benefit largely by such an arrangement: Her Majesty's Commissioners at the same time securing good tenants.

"The date for opening the Colonial Museum might with great advantage be selected for the opening of the



Fig. 100.—Ballota acetabulosa. (see p. 588.)

proposed International Horticultural Exhibition, and some arrangement might be made between the Commissioners for the colonies and the Horticultural Exhibition Committee in respect of their being responsible for some portion of the cost of the building.

"Another very beneficial arrangement may also be made between the Council of the Royal Horticultural Society and the Commissioners, by which the Society may hold the whole of their flower and fruit shows in some portion of the building, and by these means make their exhibitions a sure success, instead of, as too often occurs, a series of failures, in consequence of wet and unfavourable weather.

"In such a building as above suggested, and in the arcades which surround the gardens, there would be ample room for 70,000 or 100,000 people under cover; by such means the success of any exhibition held at South Kensington would be assured.

"The experiments carried on at Chiswick, with so much advantage to horticulture, by Mr. Barron, the Society's able curator, would be of much more benefit to horticulture generally if the whole of his time was occupied at Chiswick, and more means allowed him for carrying out a system of horticultural teaching; this the Society could well afford him, if they were, as there is now a probability they must do, to give up the expensive garden at South Kensington entirely, and spend more money in developing the science and practice of horticulture at Chiswick.

"If the suggestions I have indicated could be carried out, I venture to predict a brilliant future for horticulture: its sister agriculture would also participate in the general advantage. Exhibitions of agricultural produce, such as grain-seeds, roots, &c., both from the colonies and the United Kingdom of Great Britain and Ireland, might with great advantage to all be held every year or oftener.

"Such exhibitions would be much appreciated by the general public, and tend very much to make the Royal Horticultural Gardens a source of much pleasure and instruction to the people generally, and would undoubtedly realise and fulfil the intentions of the great and good Prince who took so much interest in the formation of the gardens, and watched their development with so much pleasure.—I have the honour to subscribe myself, your Royal Highness, my lords and gentlemen, your very obedient servant, *John Wills, Paris Universal Exhibition, Group 9, class 90, October 25.*"

FRUIT GROWING IN KENT.

Fruit growing in Kent is a subject having as much interest for the social economist as for the practical horticulturist, and the importance of a good supply of wholesome fruit as a part of the food of the people, has been frequently dwelt on in the columns of the *Gardeners' Chronicle*. The county of Kent has been termed "The Garden of England," and from this splendid county, rich in wooded uplands and fertile valleys, is annually drawn large supplies of fruit. The spirit of the old mythology remains; Pomona still marches through the land in triumphal progress, as of yore:—

"Crowned with the mellow russet Apple globes,
Red-streaked with scarlet veins; her brown hands stored
With purple Plums, whereon the ash-bloom sits
Unbrushed by envious fingers. In her lap
Nestles the queenly Peach, her crimson down
Coy-mingling with the amber Apricot,
And the rich treasures of the bending Vine,
Blue, black, and white, in beaded clusters, add
Their glories to the store."

And Kent contributes much to the teeming wealth stored up for the children of men. The culture of fruit for the popular supply is spreading throughout this fair county, and new plantations are constantly being formed. The culture of fruit trees necessary for this purpose is becoming a special feature, one of the most noteworthy instances of which is Messrs. Thomas Bunyard & Sons' extensive fruit tree nursery at Allington, near Maidstone. At the latter thriving Kentish town quite a new industry has sprung up, owing to the great amount of fruit grown in the district, namely, the conversion of surplus crops into preserves; and it is confidently expected that one hundred tons per annum will be manufactured in due course.

In regard to the culture of Apples, four kinds may be said to be extensively planted for market work, viz., the New or Winter Hawthornden, Lord Suffield, Cox's Orange Pippin, and Wellington or Dumelow's Seedling. Not only are these good bearers, but they are also sure croppers, which is of great advantage. They are extensively planted, by the thousand at a

time, and generally in the form of standards. The following varieties are in general demand for market work:—Blenheim Orange, Keswick Codlin, Cox's Pomona, Golden Noble, Golden Knob, Northern Greening, King of the Pippins, Summer Golden Pippin, Premier (a handsome red-cheeked variety that finds much favour in the market), Red Quarrenden, Stone's Apple, or Loddington Seedling, Warner's King, and Winter Queening,—this is a singularly handsome and high-coloured Apple, and cooks remarkably well. Varieties that are locally planted may be set down as follows:—Red Astrachan, Cellini Pippin, Goff Apple (a variety of somewhat indifferent quality, but used as a stock in cases where better varieties will not do well on their own stems), Grenadier, Old Hawthornden, Lord Derby, Norfolk Beaufin, Rymer, and Small's Admirable. As a rule, Pearmains and Nonpareils are not much planted, as preference is given to larger Apples. Orchard trees are invariably worked on the old Crab stock, it being found best for the purpose.

Of Pears, the varieties extensively grown for market are Beurré de Capiaumont, the Chalk or Sweetwater, a very early variety, which possesses the merit of cropping every year: the crop is taken from the trees early, and they recoup themselves for this expenditure of energy ere the summer is over; Williams' Bon Chrétien, and the Hessell or Hazel. The following are also grown in large quantities, because they are generally tremendous croppers, but of poor quality, and not worthy a place among garden Pears:—Aston Town, Autumn Bergamot, Broom Park, Bishop's Thumb, Summer Crasanne, Calabasse Bosc, Green Chisel, and Lammas. Of those varieties that are being planted as market sorts may be mentioned Beurré Bosc, Beurré Clairgeau, Beurré d'Amanlis, Beurré Diel, Citron des Carmes, Colmar d'Eté, Doyenné d'Eté, Eyewood, Jargonelle, Louise Bonne of Jersey, Marie Louise, and Vicar of Winkfield.

If Kent may be said to be famous for any one speciality in hardy fruits next to the Apple it is the Plum. As many of the fruit growers in Kent are also cultivators of the Hop, they like early Plums, so that they may be cleared away before hop-picking sets in. There is yet a vast quantity of mid-season Plums grown, and so it has come to pass that when new plantations are made early and late varieties are now planted. The favourite early varieties are Early Orleans and Rivers' Early Prolific, while such new varieties as the Czar and Blue Prolific are being enquired for. The very latest come in when Plums are scarce, especially such fine varieties as Autumn Compote and Belle de Septembre. Rivers' Grand Duke promises to make a fine late market Plum, and fruit tree cultivators are working up stocks of it in anticipation of a large demand. In addition to those above mentioned, the following varieties are extensively planted for market purposes:—Bush Plum, a Kentish seedling, grown much in the eastern division of the county, of very little value as a table Plum, but valuable as a late heavy cropping variety for preserving—so heavy a cropper that a large tree has been known to yield as many as 30 bushels. Black Diamond or Kentish are the most generally grown, Pond's Seedling, and Royal Dauphin.

The Bullace and the Damson come into the same category as the Plum, and are largely grown for market purposes. The market growers adopt the plan of planting Damsons on the outside of plantations of choice Plums to afford shelter for them, and for this purpose the close growth of the Damson as well as of the Bullace is peculiarly well adapted, being very useful in winter from this cause. The white Bullace is much grown, and being an enormous bearer is esteemed for culinary purposes. Of Damsons, the Cheshire or Shropshire is one of the best large Damsons, being both large and late. The best of all the Damsons for cropping is the Farleigh Prolific or Cluster; it is an astonishing bearer, producing its fruit in large clusters, and as it always bears well it is a highly lucrative market variety. It is stated that one Kentish grower of this Damson sent to market in one year nearly 3000 bushels, which fetched some 14*s.* per bushel gross.

The Cherry is a staple Kentish fruit. Some of the Cherry orchards are extensive and remarkable for the splendid growth the trees make and the heavy crops they bear. The leading market Cherries are the Kentish Amber Heart, Bigarreau, Napoleon Bigarreau, the Black Bigarreau, the Flemish Red, and the Kentish Red. These are extensively planted, and are highly productive. The Flemish Red and Kentish Red Cherries are mainly used for preserving, and their market value is increased by the fact that they come into use after the other Cherries are over, fetching a good price in consequence. These varieties do not last more than twenty-five years or so; it appears to be in their nature to go off at this age. Other Cherries for market work, but not so extensively planted as the foregoing, are the large French Bigarreau, Black Circassian or Tartarian, the Black Cluster, or the Turkey Heart or Coronet of some, the "Merry" of the South and other districts of England—a sort that does well for planting in a windy and exposed place, because it is of a close and compact growth. The Bigarreau Napoleon is a variety of comparatively recent introduction to Kentish orchards, but it is now being much grown because, being later than the Kentish Bigarreau, it follows it in the order of cropping, and fetches more money because later. Sorts of Cherries that are locally planted are Adams' Crown Heart, Bedford Prolific, Frogmore Early Bigarreau, Black Eagle, Black Heart, Elton, Governor Wood—a very fine late white Cherry, and a great bearer; May Duke, and Werder's Early Black Heart.

That the Kentish Cob Nut should be extensively grown is not to be wondered at; it is the best market kind, the largest and most prolific, and the demand for it from the nurserymen, who specially grow it in quantities, exceeds that of the other Nuts and Filberts put together. Webb's Prize Cob is much esteemed, and is finding great favour with the market growers; it is considered to be an improvement on the Kentish Cob, and produces handsome bunches of nuts. Cob nuts are somewhat accommodating plants; they will flourish in stony ground, on banks, or in rough and poor soils, where but few fruit trees will grow, and produce a large return from seemingly worthless ground.

Gooseberries are a well-known Kentish market fruit, those most extensively grown being Lancashire Lad, Rifleman, Warrington, and Crown Bob, all red varieties. Of those partially or locally planted are the Velvet White and Whitesmith among the whites, and Yellow Rough among the yellows. Perhaps the red varieties are most grown, because the grower for market prefer those having plenty of prickles on the wood, as the birds do not pick out the buds so much from these as from others less protected.

The enormous extent to which Currants are grown in Kent, and especially black Currants, leads one to wonder where they all go to when marketed. The black Currants fetch the best prices, and this will account for their more extended culture. The varieties in this section most grown are the Black Naples, Baldwin's Black, and Lee's Prolific Black, the last being much liked on account of its fine fruit and its fertility and hardiness of character. It is also considered to be much sweeter than the other sorts. The leading red sorts are Raby Castle, known in the market as "Rabians," and the new Dutch and Scotch. White Currants are but little grown.

Lastly come the Raspberries. The best market varieties are the Red Antwerp and Carter's Prolific. Both are good bearers, the fruit firm in the flesh and well flavoured. *R. D.*

HARDY TREES AND SHRUBS.

Hippophaë rhamnoides.—There are few better shrubs for seaside places, sandy wastes, and exposed situations generally than this. Its usefulness goes far to compensate for its relative lack of beauty. Its silvery leaves studded with scales are, however, by no means unattractive, while its hardiness and thorny habit make it a good cover plant. Like the common Aucuba, it is dicecious, the male of course being less attractive than the female, which bears brilliant orange-coloured berries, but we have never seen them in such profusion in a wild state as in the cultivated plants in the nursery of Messrs. William Paul & Son, at Waltham. Whether the protection afforded by other shrubs in close proximity has anything to do with this we know not; the fact remains that the shrubs in question so laden with berries are most attractive objects. The berries are in some countries used in sauces, but we do not remember ever to have heard of their use here, though their acid flavour would be palatable under certain circumstances. To ensure a good supply of berries it might be well to graft a spray from the male bush on to the female. We do not know if the experiment has been tried, but if not it would be worth attempting.

Cornus alba.—The rich dark red of the branches of this shrub and its waxy white berries render it a desirable shrub for the front of shrubberies. In the nursery of Messrs. George Paul, at Cheshunt, we recently saw a very pretty variegated form of this plant, the leaves being edged with white and splashed with pink. In Brussels, where evergreens are scarce, this shrub is used in the town squares with good effect.

The Carolina Poplar, Populus angulata.—Planters in want of something very effective and very rapid growing would do well to look after this noble species. The shoots are deeply angled or winged, with deep furrows between. The leaf-stalks are flattened from side to side, the leaf-blades are 7—9 inches long, or even more, ovate-acuminate, truncate at the base, crenate, serrate, pale green, midrib prominent on both surfaces, pinkish, secondary veins remote, ultimate venules closely approximate into a very fine network.

Daphne elegantissima.—This, as we lately saw it in Mr. Fraser's nursery at Lea Bridge, is a useful variegated shrub, with the bold dark green foliage of its race, but edged with white, so as to produce a very effective appearance.

The Macartney Rose.—We are glad to find this not so scarce as was once supposed. In Mr. Fraser's nursery at Lea Bridge a fine plant may be seen against a wall, its rich deep green foliage and large white flowers rendering it very conspicuous. In the same nursery we met with some double-flowered varieties of this species, such as Maria Leonida.

Cotoneaster.—One of the prettiest things of its kind we have seen lately is a collection of the smaller growing Cotoneasters with neat foliage, spreading habit, and with small white flowers, succeeded by crimson berries. In Messrs. Osborn's nursery these are grown in pots, and would be admirable things for balcony decoration. Turned out of the pots they are valuable for rockeries. Among the best are C. minima and C. rupestris. Some of the plants are grafted as low standards on the Thorn, and would in this state be valuable for table decoration.

Colletia spinosa.—Much the finest bush of this species that we have seen, and concerning which some correspondence took place a few months since in these columns, is to be seen in the nursery of Messrs. Osborn, at Fulham. The bush in question may be 10—12 feet in height by 15 feet in breadth.

HARDY STONECROPS: SEDUMS.

(*Continued from p.* 463.)

‡‡ Flowers pink, rose-coloured, or white.

20. S. STOLONIFERUM, Gmelin, It. iii., p. 311.

Barren stems, trailing, glabrous, or sprinkled with brown dots, and marked with annular scars, rooting at the nodes. Flowering stems 6 inches, ascending, reddish.

Leaves opposite, 1¼—¾ inch, spatulate, cuneate, coarsely toothed above, entire below the middle, and tapering into a short stalk, margin studded with hyaline papillæ.

Flowers numerous, ¾ inch diameter, pink or white, in terminal umbellate cymes 2 inches in diameter, ultimate pedicels shorter than the flowers.

Buds elongate ovoid.

Calyx-tube very short; sepals linear oblong.

Petals lanceolate, nearly ½ inch long, twice the length of the sepals.

Antipetalous stamens shorter than those in front of the sepals; anthers ovoid, pointed, reddish, speckled.

Carpels white or pink, erecto-patent. Styles slender. Scales whitish.—Fl. July, August.

Syn.—Sedum dentatum of gardens; S. denticulatum of gardens; S. ibericum, Steven, ex D.C.; S. spurium, M. Bieb. Fl. Taur. Cauc. i., 352; Bot. Mag., tab. 2370; Regel, Gartenflora; S. oppositifolium of some gardens, not of Sims; ? S. roseum, Steven, ex D.C. Prod. 3, 402.

Caucasus.

Varies with glabrous leaves, and flowers pure white to deep rose.

A very common species in gardens, and admirably suited for rockwork, for edgings, or for covering rough places where little else will grow. It has the disadvantage of affording cover for snails, but this is compensated for by the circumstance that one always knows where to look for the snails! In Russia the plant is largely used in cemeteries, its evergreen foliage and hardihood rendering it available where other more tender plants would perish. In early summer the foliage is dense and rather dull green, later on the flowers, rose-coloured or white, of various shades, are showy, and it is only at the end of the winter that the plant loses some of its leaves, and then looks somewhat untidy and weedy.

The S. ibericum of gardens is a small slender form, with markedly ciliolate leaves and white flowers. S. dentatum of Haworth only differs in its alternate

glabrous leaves, but in cultivation we find these characters variable.

21. S. oppositifolium, Sims, Bot. Mag., t. 1807.

Trailing perennial, with habit of S. stoloniferum, fertile stems 6 inches, erect.

Stems rough, with minute asperities.

Leaves opposite, decussate, 1½ × 1¼ inch, suborbicular or rhomboid, tapering to a short-channelled stalk, bright green, crenate-ciliate at the edges, younger leaves crowded at the ends of the branches. Inflorescence and flowers like those of S. spurium, but flowers whitish.

Stamens as long as the petals.

Anthers orange.

Carpels white, erect, as long as the stamens.—Fl. August.

Syn. Anacampseros ciliaris, Haworth; (?) S. involucratum, M. Bieb. Fl. Taur. Cauc. i., 352.

Caucasus.

Very similar to S. stoloniferum, but the leaves are brighter green, and more regularly decussate, and as they are broader at the base they overlap one another a little, and produce a neater appearance than in S. stoloniferum.

Perhaps the S. involucratum of Marschall von Bieberstein's *Flora Taurico-Caucasica* is referable here, and if so the name would have priority; but it seems probable that S. involucratum is an accidental variety, differing from the type in the size of the upper leaves, which are so large as to form a sort of involucre to the flowers. Boissier, in his *Flora Orientalis*, seems to lean to this view.

22. S. Anacampseros, Linn. Sp. 616.

Glaucous, pruinose.

Roots fibrous.

Branches terete, rooting at the nodes. Flowering stems erect, terete, reddish.

Leaves orbicular or obovate-obtuse, apiculate, cordate, auricled at the base, greenish with reddish margins.

Flowers numerous, about ¼ inch diameter, glaucous, violet, in dense terminal globose cymes, with a few small leaves intermixed.

Flower-buds ovoid, pointed.

Calyx-tube short; calyx-lobes linear-lanceolate.

Petals oblong-lanceolate, double the length of the sepals, glaucous, pale violet.

Epipetalous stamens shorter than those opposite the sepals; anthers oblong.

Carpels as long as the sepals, greenish, ventricose, substipitate.

Scales white, antipetalous, arising from the stalk of the carpels.—Bot. Mag., t. 118; D.C. Plantes Grasses, t. 33.

Syn. Anacampseros sempervirens, Haworth, Syn., p. 112.

Central Europe.

A very pretty rock plant, suitable also for edgings. Its neat evergreen bluish foliage renders it attractive at all seasons. The older writers—such as Linnæus and Bauhin, describe the leaves as deciduous, but De Candolle found them persistent, and so they are in English gardens. The flowers are comparatively rarely produced. In olden times, according to Tournefort, it was used as a love philtre, whence the Greek name.

23. S. Ewersii, Ledeb. Fl. Altaic. ii., 191.

Stock thick, giving off many trailing or ascending slender branches.

Leaves opposite, sessile, about ½ inch in diameter, suborbicular, cordate, amplexicaul, entire or slightly sinuous.

Flowers numerous, pink or pale violet, in dense globose cymes.

Flower-buds elongate, pointed.

Calyx-tube short, sepals linear-lanceolate.

Petals twice the length of the sepals, oblong-lanceolate, pinkish, with darker spots. Stamens equal to the petals nearly. Anthers purplish.

Carpels ventricose, erect, pinkish; styles whitish. Scales white, emarginate.—Fl. August, September.

Flor. Ross. ii., 182, Ic. Fl. Ross, t. 58; Gartenflora, t. 295.

Siberia, Northern India, Kashmir, Tibet.

A species rather tender in cultivation, but well worth pot culture.

24. S. Sieboldi, Sweet ex Hook., Bot. Mag., t. 5328.

Glaucous. A span high.

Branches terete, slender, purplish, erect, afterwards decurved.

Leaves in whorls of three, sessile or subsessile, spreading, suborbicular, sinuate, cuneate at the base, bluish green, pinkish at the margins.

Flowers ½ inch in diameter, numerous, in much-branched umbellate cymes, pedicels longer than the flowers, and dilated towards the top.

Bracteoles linear-ovate.

Flower-buds ovoid, pointed.

Calyx-tube very short, lobes ovate-acute.

Petals lanceolate, pinkish, with a green spot on the back near the top three times as long as the sepals.

Anthers pinkish, apiculate.

Carpels substipitate, ovoid. Style tapering.

Scales white, truncate.—Fl. August.

Illust. Horticole, t. 373; Miq. Ann. Mus. Lugd. Bat. ii., 155.

Native of Japan.

This species is better grown as a greenhouse plant, and is well adapted by its elegant habit for a basket plant. There is a variegated variety of it figured in *Illustration Horticole* above quoted, which is even more tender when grown in the open border than the species.

(*To be continued.*)

A FEW SEASONABLE WORDS ABOUT ROSE STOCKS.

The season for planting "stocks" is not the least important period in the routine duties of the Rose cultivator, professional or amateur. To get good stocks and to plant them well makes all the difference as to the quality of the plants that will ultimately be produced. These points are well understood by those accustomed to the business, but not so by a very large class of amateurs who find amusement in producing some of their plants for themselves, and who cherish their own handiwork with greater interest than the picked samples of the nursery, to them the mere outcome of the breeches pocket. A few hints to this class of rosarians will not be without some utility. And first as to planting: it may be laid down that "stocks" require as much care in the performance of this operation as the finest Rose trees; the soil should be just as good, and manure should be just as liberally bestowed. They had better be set out in rows 3 feet apart, and if intended for standards a post at each end of the row with a stout wire or rope strained therefrom at the back to fasten them to, to ensure steadiness, will not be trouble thrown away. At the time of planting the roots of both Briers and Manettis should be examined, and all bruised portions trimmed off clean with a sharp knife, and any incipient suckers scooped bodily out. Hard-barked and old stocks ought to be rejected, and plenty of fibrous roots looked out for. Plant firmly, and give one good watering after that is done. But it is to the subject of "stocks" generally that attention is sought to be directed in these remarks. It may be safely affirmed that stocks for Roses have not yet undergone that systematic experiment which their importance demands. At present there are really but two in what may be termed general use, viz., the Brier and Manetti. Occasionally it may be that other representatives of the Rose tribe on exceptional occasions, when the natural characteristics of specially favourite kinds do not appear to take satisfactorily to the customary stocks—are employed. These experiments, however, can scarcely be said to enter into general practice, and belong rather to the "rule of thumb" class of procedure than to thoughtful and systematic attempts at discovery.

After the Brier and Manetti the seedling Brier appears to have attracted some attention of late, and with more or less appreciation amongst trade growers. It is not, however, a new discovery. The late Mr. John Harrison, of Darlington, and the late Mr. Masters, of Canterbury, competent authorities, stated that they used it more than fifty years ago, and with no special advantage. Nor does there appear any valid reason why it should possess superior qualities to the natural Brier, except such as are derived from good cultivation. But it is not the writer's intention to discuss its virtues or its failings here, the object being rather to throw out suggestions for bringing other stocks under trial during future seasons, now being the time for preparing them for experiment. We must, however, just glance at the De la Grifferaie as now coming into use for the strong-growing kinds, and so far with encouraging success. I am disposed to believe that hitherto the principle of selecting subjects for stocks has scarcely been correct. It appears to have been supposed that a strong constitutioned stock communicates its vigour to a weaker growing Rose. This is scarcely borne out by facts, or we should scarcely find so many failures in this direction, particularly in the habit of buds growing out. Would it not rather be more logical to study similarity of constitutional habit and growth? and would not Roses themselves be more likely to succeed as foster roots, selecting such as have marked similarity to the varieties to be budded thereon? There is naturally a greater affinity between the constitution of Roses, than between the Rose and the Brier or Manetti. No doubt there are many among the seedlings raised with the view of originating something worthy of being enrolled as a new Rose which, though worthless as varieties, might prove excellent as stocks. Nay, there are already some amongst established favourites that might be brought into use—John Hopper, for instance, which roots as freely as the Manetti, and which no doubt would suit admirably varieties of similar style, but with less vigour of growth and robustness of constitution. It is this similarity of habit and constitution that ought to form the basis of every experiment to secure a prospect of success, and to guide us in our selection of kinds to be brought under trial. It has always struck the writer that upright growers ought to be budded upon such kinds as agree with them in that habit, and so on; the weaker upon those of similar style but of hardier and more robust constitution. Age also ought probably to be taken into account more than it is, the buds for young stocks being taken from maiden plants, and not from old-established specimens, as is very commonly the case. There are many things yet to be found out with respect to Roses which only experiment can determine. But it is impossible to expand the subject in one paper; I must therefore resume it on a future occasion. *W. D. Prior.*

PENRHYN CASTLE.

The baronial mansion of the Right Hon. Lord Penrhyn is situated within a distance of two miles from the railway station at Bangor, North Wales. Approaching the entrance gate the visitor is much struck with the immense plants of Veronica Andersoni, Hydrangeas, and the old Fuchsia Riccartoni: a plant of the last-named hanging over a wall in wild luxuriance was a very striking object indeed. It is a long walk from the noble entrance gate to the mansion, and a trying walk, too, as the approach tends upwards all the way. The Castle presents an extensive range of buildings, which are surmounted by lofty towers, and its imposing appearance is further enhanced by being built on the summit of an isolated hill; from this eminence the views of the surrounding country on a clear day are truly beautiful—it commands the bay and towns of Beaumaris and Bangor, a large portion of Anglesey, with Priestholme Island, the Great Ormes Head, and Penmaenmawr. In another direction are the gigantic hills of the Carnarvonshire range. Standing in bold outline are Carnadd Llewelyn and David Llewelyn; except Snowdon these are the highest of the range, and one of them falls short of Snowdon by 50 feet only.

The slate quarries at Penrhyn are one of the sights not omitted by the tourist in search of pleasure. They are about six miles from the coast line, but a port and quay have been formed with a tramway to the quarries, by Lord Penrhyn, at a cost of £175,000. It is said that 90,000 tons of slate are sent down to the port annually. There are about 3000 people employed besides the men engaged at the wharf; and it is said that, inclusive of the wives and children of the workmen, these quarries give support to 13,000 people. The mountain is cut into ridges of slate, and it is a grand sight to see the blasting process, as thousands of charges are ignited at one time; indeed, it would fill several pages to describe the various historical and other sights to be seen near this place, including the Britannia Tubular and Menai Suspension Bridges over the Menai Straits, but it will be more interesting to the readers of this paper to give some account of the garden and grounds of Penrhyn Castle.

The grounds are very extensive indeed, Nature requiring but little assistance from Art to produce a magnificent result. I walked with Mr. Speed along part of a carriage-drive nearly 2 miles in length. The trees and shrubs along this drive have been irregularly planted; in some places they come close to the drive, and at others they have been kept well back; the vacant spaces are kept in short grass, and to save some of the immense labour that so much short grass-keeping entails Mr. Speed has planted immense quantities of the commoner species of the British Ferns, such as Lastrea Filix-mas, L. dilatata, and the Pteris aquilina, in suitable places, as a foreground to the trees and undergrowth. There are thousands of them, and the idea is good, as they are quite in keep-

ing with the place. I noticed on the margins of this drive clumps of Fuchsia Riccartoni, the plants were in full flower and quite 12 feet high; Hydrangeas, also in clumps, had hundreds of splendid heads of flowers.

There are some noble specimens of coniferous trees here also; but the sea breezes will not allow them to overtop the shelter of the plantation. Taxodium sempervirens is between 60 and 70 feet high and 41½ feet in circumference at the base. Abies Douglasii girths 17 feet 9 inches; Araucaria imbricata is 40 feet high, and there are grand examples of Wellingtonia gigantea. The Austrian Pine is much esteemed as a plantation tree, succeeding better than the Scotch Fir. Returning by the west side of the mansion I noticed quite close to it immense clumps of Hypericum calycinum; it had been planted under trees, where it succeeds admirably. Mr. Speed told me that he would not plant this pretty native, St. John's Wort, under trees again, as he has found many instances of its destroying the trees altogether. The trees have gradually declined, and on examining the roots they have been found smothered with fungus, due no doubt to the Hypericum exhausting the soil, causing extreme dryness, which became a bed for the dry-rot fungus. Near the mansion is an immense single specimen of the Fuchsia Riccartoni; it girthed nearly 2 feet round the stem at its base, and the plant, which spread its branches to a large distance round, was over 20 feet high. The Sweet Bays, Yews, and Irish Strawberry trees grow with unusual luxuriance: the sea air seems to suit them. Under Oak trees in the pleasure grounds Truffles are found, not in one isolated spot, but in several. It seems that squirrels have a taste for them, as it was one of those animals that was observed scratching the ground and exposing a Truffle, which was the means of the discovery of it. On the lawn are a few noteworthy trees from their having been planted by exalted personages. Her Majesty the Queen planted a Turkey Oak and a Wellingtonia gigantea on October 17, 1859; both are now in fine health. At the same time Prince Arthur planted an English Oak. The grounds were in excellent order, and their extent may be imagined when I say that 60 acres are kept under short grass.

Passing into the flower garden, which is partially enclosed by walls, we are again met by isolated specimens of Fuchsia Riccartoni, the glowing scarlet flowers of which are softened by the graceful foliage of Taxodium sinense, Taxodium distichum, &c., planted as single specimens on the lawn. There are a number of geometrical flower-beds planted with the usual bedding plants. Rollisson's Unique Pelargonium was in flower, and useful for cutting from as well. Mr. Speed also grows a number of the various species with finely cut leaves, as the leaves are useful to mix with cut flowers for vases, &c. On the garden wall were many half-hardy shrubs that have braved the storms of winter for many years. Aloysia citriodora, popularly known as the Lemon plant, had stout woody stems, and the branches overtopped a high wall. The broad and narrow leaved Myrtles had also formed strong healthy specimens planted out-of-doors. Garrya elliptica flowers profusely on the flower garden walls, and is most useful to cut flowers from in January. Trailing amongst the shrubs and flowering profusely were thrifty plants of Tropæolum speciosum. There is also a handsome specimen of the half-hardy Palm, Chamærops humilis; it has been growing in the same position out-of-doors for the last ten years. There is also a conservatory and other houses devoted to flowering plants on the highest part of the flower garden. Trained to the rafters of the conservatory, and covering the entire roof almost, was a noble specimen of Tacsonia Van Volxemii, a New Grenadan species of great merit; its rich crimson flowers hanging on long slender pedicels had a most beautiful effect. Achimenes Verschaffeltii had been planted in wire baskets where the plants had made abundant growth, and they were flowering very freely. This plan of growing Achimenes has been tried by Mr. Speed, of Chatsworth, on a larger scale, and wherever it has been well carried out the effect of the masses of bloom is excellent. Before leaving the conservatory I noticed a number of strong healthy specimens of the Stag's-horn Fern, Platycerium alcicorne. These plants have a history—it is this: Mr. Speed, with some of the young men, were out on the neighbouring mountain, 1000 feet above the sea level, and at that point one of the party noticed an unusual plant growing from a rent in the rock. It was not large, and at the time the leaves were frozen; Mr. Speed at once recognised it as Platycerium alcicorne, and removed it from the rock. It was planted out-of-doors, and flourished on a rockery for three years; this happened in 1864, and the plants I saw were from this specimen, found growing on the Welsh mountain. Mr. Speed mentioned this circumstance to the late Mr. James Veitch, and that gentleman told Mr. Speed that the same Fern had been discovered growing in a wild state on the Marquis of Downshire's property in Ireland. It has also been recently found on another part of the Welsh mountains by a Mr. Clurzy. Botanists may not be inclined to rank this amongst our native Ferns from this circumstance [Certainly not], but that Mr. Speed found it growing on the rocks in winter is certain. How it got there is another thing. It is not without the range of probability that some person may have planted it on the rocks; but Mr. Speed, who has the best means of judging, does not account for its being there on this theory. Passing from the conservatory to an adjoining stove we find the old Allamanda Schottii growing very freely, and producing abundant supplies of its rich yellow flowers. Very beautiful, too, was a flowering specimen of Thunbergia Harrisii: its large slate-blue flowers, produced in clusters, are also used for cutting to fill vases.

In the kitchen garden department the utmost order and regularity prevails, and although it is a very extensive garden, enclosed by high walls, which greatly adds to its usefulness, it is none too large for the requirements of the establishment, and strict economy is necessary to keep up the supply. The vineries, Pine-houses, and all the frames and pits necessary for forcing, are within the kitchen garden walls. There is a splendid range of vineries; each division is 40 feet long by 16 feet wide: they are lean-to and lofty. The Muscat-house was a sight worth going many miles to see. The growth was splendid, and an immense crop of large bunches was hanging. The fruit was just ripe, and Mr. Speed pointed out to me that nearly all the bunches were in a state of decay, from the stems becoming gouty or cankered. I have never seen such a state of matters before, and Mr. Speed told me that it was a mystery to him and others so far. He suggested fungus, but I could see no trace of it. It was simply canker in the stem, which cuts off the supply of sap, and causes the berries to shrivel and decay to set in. Mr. Speed would be glad to know of any means to stop this disease in his Muscats. [We can trace neither fungus nor insect in the specimens sent us, to which we shall refer on another occasion. EDS.] It is rather singular that in the next house, which has been planted with late Vines, principally Lady Downe's, there is nothing the matter with the bunches. Gros Colman was doing well in this house, where it had been planted on its own roots. The bunches and berries were large and well coloured. It had also been grafted on the Black Hamburgh, but judging by the result this does not appear to be a good stock for it. Burchardt's Prince is not successful; the bunches were not large, and the berries will not colour darker than iron rust.

Pines are still extensively grown at Penhryn Castle, especially for fruiting during the winter months. The stock of smooth-leaved Cayenne is very large, and a great number of the plants are showing fine fruit; some of it is nearly ripe. Other plants have just thrown up the fruit. A succession is obtained during the winter and spring months. I also observed that the average size of pots was about 10 inches, and in these were fruits that would swell to 8 lb. or 9 lb. weight. An excellent orchard-house is an adjunct to this garden, but a large proportion of the trees have been planted out and trained to a trellis. Of course all the popular sorts are cultivated, and I have seldom seen better young wood. Stirling Castle Peach was mentioned as being a very desirable sort to grow; it is an excellent cropper, and has other points of merit. There are 2500 pots of Strawberries forced annually, and it may be interesting to know that after trying many different sorts, they have all been discarded for Keens' Seedling; twice as much fruit can be obtained from this as from any other. The garden also contains a good collection of fruit trees. Pears do remarkably well, the sort that is most depended upon to give a supply from the end of September to January 1 is Marie Louise. A regular supply is kept up by beginning to gather the fruit early in September, and gathering at intervals until the first week in November. There is an immense extent of espaliers, to which Pear and Apple trees are trained, but it is not all devoted to fruit trees.

Flowers are much in request at all seasons, and a portion of the espaliers are devoted to Dahlias and Chrysanthemums. Single Dahlias only are grown, and the quantity of flowers that can be cut from the two species is enormous—there were hundreds on one plant. D. coccinea is the most useful, but D. atrosanguinea is also esteemed.

Figs, as may be expected, succeed well out-of-doors, but for several years the fruit, or at least a considerable portion of it, would decay prematurely at the nipple, or apex. Mixing lime with the soil had been recommended as a preventive, and this has been tried with very satisfactory results. It may be worth noticing that when the soil used to pot Figs is not calcareous, it is a good plan to mix about a sixth part of good plaster rubbish or lime rubbish with the potting material.

Much more might be written about this fine place, but my remarks have already exceeded reasonable limits. I ought not, however, to conclude without thanking Mr. Speed for his kindness in explaining all the details of his work. *J. Douglas.*

ARALIA MANDSHURICA.

OUR illustration (fig. 101) may serve to call the attention of those about to plant to this noble shrub. Its gigantic leaves, measuring more than 3 feet in length, are placed near the top of an upright unbranched stem (6—10 feet), where they spread into a horizontal crown, from the midst of which latter emerge in hot summers dense, much-branched panicles of small creamy-white flowers, followed (rarely in this country) by black berries, something like those of the Ivy.

The plant is better known under the name of Dimorphanthus, but as it is a true Aralia to all intents and purposes, we are glad enough to be able to dispense with so long and uncouth a name. The plant in question is like Aralia spinosa in general appearance, but it is very much larger and handsomer; the leaf segments, moreover, being darker on the upper, and whiter on the lower surface than in the species named. It seems to prefer a rich loamy soil, but is apparently not very particular as to this point. During the late autumn it has even formed a conspicuous object in Finsbury Circus, in the heart of the city of London. Grown isolated as a specimen shrub it forms a magnificent object; it also looks well as a foreground to a shrubbery where sufficient space can be given to it.

PLANT PORTRAITS.

CURMERIA WALLISII, Mast., *Ill. Hort.*, t. 303.—This is the plant originally figured and described in *Gardeners' Chronicle*, 1877, vol. vii., p. 108, fig. 16. Its oblong-acute, dark green leaves, marbled over with irregular blotches of a paler hue, render it a very desirable stove foliage plant. It is the Homalomena Wallisii of Regel.

NEPENTHES KENNEDII, F. v. Muell., *Fragmenta*, v., p. 154; Benth., *Flor. Austral.* vi. (1873), p. 40; Hook. fil. in *D.C. Prod.* xvii., 98.—A small species with lanceolate arched conduplicate leaves having dense tesselate venation (Mueller). The pitchers are wingless, cylindrical, abruptly narrowed above the middle into a cylindrical neck of a translucent reddish colour, the distended base being green. The lid and throat are both small. The species is a native of Cape York, North Australia, whence it was introduced by Messrs. Veitch. It is considered by Mr. Bentham as possibly a form of N. phyllamphora.

ODONTOGLOSSUM CIRRHOSUM, Lindl., *Illustration Horticole*, t. 301.—A fine variety of this attractive Orchid is here figured. See *Gardeners' Chronicle*, 1876, vol. v., p. 501, with figure.

ONCIDIUM OBRYZATUM, Rchb. f., *Gartenflora*, t. 925.—A well-known species, the yellow flowers of which are barred with purplish brown markings.

ONCIDIUM PRÆTEXTUM, Hort. Veitch; *Gardeners' Chronicle*, August 25, 1877, p. 248; *Belgique Horticole*, tt. 20, 21, 1877.

PAVONIA MAKOYANA, E. Morren, *Belgique Horticole*, 1878, t. 3.—A stove shrub, native of Brazil, whence it was introduced by MM. Makoy, of Liège. The shortly-stalked leaves are provided with two leafy lanceolate stipules, which are of oblong-lanceolate form, and saw-toothed. The flowers are borne in terminal clusters, and are remarkable for a five-leaved epicalyx of large cordate ovato-acute crimson bracts,

which give to the plant a remarkably distinct and showy appearance.

Pear Bergamotte Hertrick, *Bulletin d'Arboriculture*, June.—A small fruit, raised by MM. Baumann, of Bollwyller. It is obovate, scarcely depressed at the eye; stalk short, not deeply implanted; skin brownish yellow spotted with red; flesh tender, sweet, *curé* who, at his death, left his seedling Dahlias, Roses, and Pears to the poor of his parish.

Pentaraphia floribunda, *Revue Horticole*, January 16, 1878.—A Gesneraceous plant of dwarf bushy habit, more or less covered with close reddish down. Leaves lanceolate, bullate above. Flowers numerous, axillary, red, tubular, distended above the with pink flowers, in a terminal truss, which is sometimes prolified. The leaves are tufted, oblanceolate with a winged petiole.

Pterostylis Baptistei, *Botanical Magazine*, t. 6351.—A coloured figure of the very singular Australian Orchid whose history we gave with an illustration in a recent number (vol. ix., p. 213).



Fig. 101.—Aralia mandshurica, greatly reduced: leaf, 3 feet 1 inch long, and 3 feet 2 inches wide.

richly perfumed. The highest character is given to this Pear by M. Burvenich.

Pear Beurré Saint-François, *Bulletin d'Arboriculture*, February.—A Pear of middle size, clavate form, somewhat flattened at the apex, with a shallow eye, tapering towards the short stalk; skin brown, speckled; flesh fine, melting, sugary, perfumed—fruit, in a word, combining all the qualities which make a veritable type of perfection," *sic*. The tree is not a good bearer. It was raised in Tournai by a middle, limb shortly three-lobed, irregular; throat open. Native of Cuba.

Primula cortusoides amœna, *Floral Magazine*, t. 314.—Two seedling varieties, raised by Mr. A. Dean, and named laciniata from its gashed petals, which are of a rich purplish red; and Mauve Beauty, with bilobed mauve petals.

Primula nivalis, Pall., *Gartenflora*, t. 930.—Two varieties are figured, var. longifolia and var. turkestanica—the former with dark violet, the latter

Rondeletia odorata, *Botanical Magazine*, t. 6353.—Stems pilose, leaves oblong-ovate acute, cordate at base. Flowers orange-red, in terminal tufts. It is an old garden plant, generally known as R. speciosa. West Indies.

Rose Anna de Diesbach, *Journal des Roses*, April, 1878.—A well-known H.P., raised by Lacharme, and sent out in 1858. Flowers large, well-formed, rosy carmine, silvery on the outer surface.

Rose Rosy Morn, *Journal des Roses*, January,

1878.—A fine Hybrid Perpetual, raised by Mr. William Paul, of Waltham Cross. The flowers are of large size, of globular form, the colour of peach-blossom, shaded with salmon-rose, and with a delicious perfume.

RUBUS CRATÆGIFOLIUS, Bunge, *Gartenflora*, tab. 924.—A singular species of Rubus, native of the Amoor region. The cordate ovate acute leaves are glabrescent, deeply 3-lobed, the terminal central lobe largest, narrowed at the base, ovate acuminate, the lateral lobes smaller, oblique, all doubly toothed. The fruits are reddish.

RUELLIA DEVOSIANA, Hort. Makoy, *Belgique Horticole*, t. 19, 1877.—A Brazilian Acanthad, with red stems, lanceolate leaves, green above, with the midrib and veins marked out with white, and with the under surface of the leaves of a rich claret colour. The flowers are large, whitish, tubular, curved, five-lobed. Received from Brazil by MM. Makoy.

SPIRÆA PALMATA VAR. ELEGANS, *Florist*, March, 1878.—This is a reputed hybrid between S. palmata and Astilbe japonica. It has previously been figured in the Belgian publications, and noticed in these columns (see pp. 240, 375.)

STUARTIA MALACHODENDRON, *Revue Horticole*, 1878, p. 70.—A splendid flowering shrub, hardy in the Southern counties, and figured by us at p. 433, vol. viii., under the name of S. virginica.

TILLANDSIA ROEZLII, E. Morren, *Belgique Horticole*, 1877, t. 15.—A Peruvian species, discovered by M. Roezl, with strap-shaped or lanceolate acute leaves, banded with black bars. Flowers in compound spikes, with distichous, closely-packed, greenish bracts, subtending reddish flowers. The filaments are spirally twisted, and the anthers pendulous.

TILLANDSIA USNEOIDES, Linn., *Belgique Horticole*, 1877, t. 17.—A good figure, with copious analytical details of the old but still little known and interesting "Old Man's Beard" (not bearb, as written). See *Gardeners' Chronicle*, 1877, p. 534; *Botanical Magazine*, 1877, t. 6309.

TILLANDSIA TECTORUM, E. Morren, *Belgique Horticole*, 1877, t. 18.—A species with long linear leaves, dilated at the base, flowers in close branched spikes, white with a broad blue central band. Native of Peru. It is the Tillandsia argentea and the Pourretia nivosa of some gardens.

TORENIA FOURNIERI, *Gartenflora*, t. 927.—A beautiful stove shrub in the way of the old T. asiatica, but with a blotch of yellow in the centre.

XANTHOCERAS SORBIFOLIA, Bunge, *Illustration Horticole*.—A good figure of the beautiful hardy shrub, figured by us at p. 564, vol. v.

XIPHION PLANIFOLIUM, *Botanical Magazine*, t. 6352.—An extraordinary Irid, with a large ovoid bulb having thick fleshy roots, broad lanceolate leaves, and solitary flowers with violet segments, the outermost striped with orange, the inner much smaller. Native of South Europe. The specimen figured came from the nursery of Mr. Ware, of Tottenham.

ZAMIA FURFURACEA, Aiton, *Gartenflora*, t. 932.—A species with pinnate foliage, the rachis beset with small spines. The pairs of pinnæ number 14—16, each of the segments being of an oblong obtuse shape, rather tapered to the base and finely toothed at the margin near the apex.

ZAMIA LODDIGESII, Miq., *Gartenflora*, t. 926.—A species with short, thick, ovoid or cylindrical stem, and long-stalked pinnate leaves; the pinnæ lanceolate, tapering at both ends, finely serrulate towards the tip.

ZAMIA SIEBOLDII, Miq., γ. ANGUSTIFOLIA, *Gartenflora*, t. 929.—A Mexican species with short stems, prickly leaf-stalks, and pinnate leaves consisting of 14—15 pairs of linear-lanceolate serrulate pinnæ.

The Villa Garden.

KITCHEN GARDEN: SPRING LETTUCE.—Any one in the habit of taking walks through the market gardens round London, and other large cities and towns, cannot fail to notice what are termed the large breadths of Lettuce recently planted out to stand the winter, to come into use in early summer, before the Lettuces sown in early spring turns in. There is no doubt but that of late years a great taste for salads has sprung up among Englishmen, and this may be acknowledged without danger of incurring the censure of some that we are simply following a French fashion. What does it matter if it is a French fashion? Salading is good as an article of food; the greater consumption of salads has been recommended on dietetic grounds, and a consideration of that nature overrides all mere fashions and customs. It is in spring especially, that salads are refreshing and agreeable and most in demand, and to prepare for this demand market gardeners are now planting out breadths of Lettuces. The Villa gardener can get a wrinkle here, and by clearing a patch of ground, and planting out some Lettuces, he will be furnished with what will be found to be a real luxury in April and May next.

Even if the Villa gardener has not included some Lettuces among his summer sowings, it is not a difficult matter to get a few plants from some neighbouring gardener or nurseryman. The market growers cultivate three sorts of Lettuces for winter work—viz., the Hardy Hammersmith Cabbage Lettuce, the Black-seeded Bath Cos, and the Paris White Cos, or a selection from it known as the Hardy White Cos. Cos Lettuces are preferable in market to Cabbage varieties, and the White Cos is preferred to the Brown Cos.

In small gardens slugs are destructive to Lettuces during winter; the Villa gardener who grows only a few is much troubled during mild damp weather with the marauding propensities of this pest. It is by a free use of lime that they are best kept at bay, and, if necessary, by hunting them at all times, and especially at dusk, when they come forth from their hiding-places by day to feed on the tender plants the Villa gardener would fain keep for his own consumption. The market gardener plants his Lettuces on a warm sunny border, or in the open, and notwithstanding the enormous number of plants they put out, they are much troubled with slugs. Hard frosty weather, if it be dry, will not do the Lettuces much harm, and it stays the ravages of the slugs. It is when severe frost follows close on the heels of wet that so many plants are lost.

PREPARING GROUND FOR WINTER.—An old gardener remarks, "Trench or ridge all vacant ground, and dig in as much manure and burnt refuse as you may have at command, as it is almost impossible to have the kitchen garden too rich." Trenching is much needed this autumn and winter, for the weeds have grown all through the summer to such an extent that there is no other way of getting rid of them but by digging them in. The refuse heap that we have so constantly advocated comes in at this season of the year, and is of great value in making stiff ground workable. A neighbour of ours, having inherited a London Villa Garden from which all the loam had been carted away and replaced with clay and rubbish taken out of foundations, has converted a piece of very stubborn soil into a fertile garden by husbanding all his garden refuse, and working it into the soil in autumn and winter. Many Villa gardeners know to their cost what a made-up London garden is, and what a labour and expense it entails to get it into working order, and the example given above may prove of use to some.

Nothing in the way of vegetable refuse from the house need be wasted: Potato and Turnip parings, outside leaves of Cabbage, Broccoli, Kale, &c.—all are acceptable. Let this be mixed up with clippings of Box edgings, turf edgings, short grass, sweepings of lawns and garden paths—anything, in fact, that is convertible into soil, turned over occasionally to expose it to the sun and wind; and add to it sprinklings of fine cinder-ashes, such as remain after the cinders are sifted. All this decays and comes in very useful, for disintegratiug a clay soil. A heavy wet soil is also much helped by digging it up rough just before the leaves fall, and spreading over it all the leaves that can be got together (if not wanted for any other purpose), and over the leaves a thin layer of fine ashes. The wintry elements acting on this crumbles the soil down, and with the leaves and ashes forms an acceptable surface for planting in spring. All green refuse from the kitchen and garden can be got rid of at onee by burying it a foot in depth, and throwing up the subsoil rough over it. During the winter it rots, and becomes incorporated with the soil, and is brought to the surface, when the process is gone over again a year hence.

SPINACH, ONIONS, AND CABBAGE.—Beds of these coming on for spring use will be greatly helped by being kept clear of weeds, and having the surface soil moved occasionally when the weather is drying. The Dutch hoe should be freely used, the plants derive great benefit from hoeing the ground. Because it is autumn and winter the trim appearance of a garden should not be neglected, cleanliness and tidiness are as necessary and pleasing in winter as in summer; and growing crops succeed all the better for being free of weeds. If slugs trouble these crops, and a little powdered lime is not at hand, a sprinkling of very fine cinder ashes spread over the ground between the plants and occasionally renewed will act as a prevention to the locomotion of slugs. They don't like to come into contact with and travel over gritty particles, and evade them. If, therefore, a kind of earthwork of these ashes be put round the plants as far as possible, it will be found a guarantee for the safety of the plants.

Advantage should be taken of the present drying weather to do general cleaning-up work, and for the performance of any outdoor operations requiring immediate attention. The night of the depth of winter is coming on, and for a time the garden is practically closed as far as active work is concerned.

Garden Operations.

FLOWER GARDEN, ETC.

As soon as the leaves are all down a general clearing up of the whole of the lawns, terraces, and other adjuncts of the flower garden becomes imperative. Leaves will always accumulate, more or less, in every sheltered nook, and under shrubs and trees, and a mere superficial clearing of all the exposed parts is not enough, as the first high wind routs them out and disperses them; it is better, therefore, to begin at one end, and direct the workmen to clear all before them, not only of leaves, but also all dead and extraneous matter which contributes to render the place unsightly. The leaves should be kept separate from other rubbish, and stored where they can be prepared for future use, as compost for flower-beds, for which purpose they are, in many instances, more suitable than manure; but it takes two years to reduce them to a proper state of decay, and during that time they should be turned over to sweeten two or three times a year; for, if left merely to rot, without turning over, they will be sour and acrid, and injurious rather than beneficial.

Most of the plants in the herbaceous borders have either gone to rest or become unsightly, and a thorough renovation may be set about at once by the removal of all dead flower-stalks and other useless matter. It is excellent practice every few years to take up the whole of the plants and trench up the border 2 feet deep, adding during the process a liberal dressing of rich decayed manure, which should be well incorporated with the soil. In replanting, choice varieties may be divided and distributed, but commoner sorts, which are apt to form large strong clumps, should be greatly reduced in size. The bulbous varieties will most likely have thrown out many roots, which should be disturbed as little as possible; when replanting care must also be taken to replace all decayed marking pegs to these, and labels to all such as require them in the border. Any sorts likely to suffer from frost may have a little extra covering, by way of precaution; should, however, this trenching up not be considered necessary, it will be as well, after clearing off all unsightly matter, to give the borders a good dressing of decayed manure over the whole of the surface amongst the plants; the soluble matter from this will be washed down by the winter rains, and be very beneficial. All empty detached beds on the lawns which are not intended to be planted with spring flowering plants, should be liberally dressed with manure, and trenched up in as rough a manner as is consistent with a certain degree of neatness; and if this is frequently turned about and exposed during dry frosty weather through the winter and spring, it will purify and sweeten the soil, and be more beneficial than manure. The planting of such beds with dwarf evergreens, although very commendable as regards appearance—and, indeed, indispensable in certain situations—is yet not to be recommended where it can be dispensed with, as it has a tendency to impoverish the soil and encourage vermin; and although we may, as I before recommended, remove a portion of the soil and supply its place with rich compost, it will not be found equal, for floriferous purposes, to the soil which has been purified by frequent exposure to frost and atmosphere. And the reason is plain. A richly manured soil produces grand foliage but little inflorescence; so that in those cases where flowers are the great object we should endeavour to avoid too much stimulating manure, and trust to the application of a virgin compost to restore exhausted soils. On the other hand, gross feeding plants, which are valuable for their grand foliage, such as Wigandia, Solanum, Ricinus, Carduus benedictus, and others of a like character, will revel in copious applications of rich decayed manure, which will ensure a grand development.

Open weather in the present month is about as good a time as can be selected for the planting of new, or the renovation of old beds of Roses. Now here again is a case where good sweetened manure cannot be too liberally used. The ground should be

well trenched up and knocked about, and the manure well incorporated with it, both for new beds or for filling up vacancies in old ones; indeed, in the latter case, in order that the work may be thoroughly done, it is frequently advisable to lift the whole of the plants, and after trenching, and thoroughly incorporating the added material, to replant at once. This is the surest way of ensuring equality of growth all over the bed. Additions here and there in vacant places are very seldom satisfactory, as the old roots soon seize hold of the new soil and manure, and the newly-introduced plants become starved. In lifting old plants of Roses it is advisable to be careful to retain as many roots as possible; any wrenching or tearing out of the trees should be carefully avoided. If the ground is to be trenched and replanted, remove at once, from one end of the bed, 2 feet in width and depth of the soil, and undermine the trees, allowing them to drop out instead of being torn out from the surface. All suckers must be cleanly removed from such as are on Brier or Manetti stocks, but if on their own roots the strong shoots coming from below are too valuable, and must be retained. Roses will flourish in clay, if well drained, but if water-logged they simply just keep alive, and eventually die; therefore look well to the drainage. *John Cox, Redleaf.*

FRUIT HOUSES.

Strawberries in Pots.—Referring to past advice given with respect to the amount of protection required for Strawberries in pots during winter, it was advised that plants intended for early forcing should be sheltered from excessive rains only. The Peach-house border, the orchard-house, or, indeed, any other structure where open ventilators are desirable for the next two months, and where there must necessarily be piercing draughts of dry air admitted, is not a fit place to store these subjects, which are bursting their pots with live, active roots, and which in such a position would only be drained of every drop of moisture by constant and unremitting evaporation. So convinced are we of the efficacy of moist winter treatment, that arrangements have been made to leave out all plants intended for late forcing without any protection whatever, except that a supply of Asparagus straw is ready at hand to cover the surface of the pots in case of severe frost. Perfect drainage is indispensable, and where this is secured, root-action will be in a vigorous condition when the plants are required for forcing next spring. Should the weather continue dry for any lengthened period the watering-pot must not be laid aside, but be regularly and carefully applied to keep the soil in the pots in a moist, mellow condition. In storing plants in pits where the sashes can be removed (as advised in a former Calendar), it is a good plan to pack the spaces between the pots with damp leaves, from which the roots extract moisture enough to keep them fresh with the assistance of a shower now and then during occasions when the plants are uncovered. An early batch of Black Prince should now be prepared to start with the early Peach-house, where no fire-heat will be applied for the next three or four weeks. Worms have been exceedingly troublesome this autumn, and where there is any sign of the drainage being disarranged let it be rectified, in order to insure a healthy action of the feeding organs of the plants, and prevent the loss of any of the young roots which delight to travel among healthy drainage. Autumn Strawberries are unusually good with us; the size is large and the flavour excellent, and would compare favourably with spring-grown fruits up to the end of March. *W. Hinds.*

Vines.—Where Lady Downe's Grapes are well grown and ripened in quantities to yield a supply until next May, they should now be fit for use if required, but the quality will be greatly improved by allowing them to hang on the Vines until Christmas, with a free circulation of air, where external conditions are favourable, with sufficient fire-heat to maintain a temperature of 35° to 60°. To prevent dust from rising from the internal borders which will now be getting dry on the surface, a nice covering of dry bracken best answers the purpose and at the same time improves the appearance of the house. Houses in which ripe Muscats are hanging will require careful attention until all the leaves have fallen from the Vines. Keep up a steady temperature of about 60°, remove all plants in pots requiring water, and gather up ripe foliage daily. Look to the outside borders, if still exposed lay on a dry body of non-conducting material and cover with lights or shutters. Assured that all outside borders have received the necessary additions and are now safe for the winter, preparations should be made for the speedy performance of internal alterations as soon as the bulk of the late Grapes have been removed from the house. By getting a sufficient supply of turf, rubble, charred refuse, and crushed bones, well mixed in an open shed ready for wheeling in, also a liberal quantity of clean broken bricks for drainage, the work will be facilitated when a suitable day arrives. In the formation of these inside borders provision should be made for the free passage of water from the drainage, as well as for preventing the roots from striking into the subsoil; the depth need not exceed 2 feet 6 inches, and if the whole of the old compost is removed a breadth of about 6 feet of new soil will be ample for the first year, as it is safer, particularly in cold, unfavourable localities, to keep the roots within bounds, and feed, than to allow them to ramble over a large space, and so increase the labour of watering, with the additional risk of getting the whole mass in a sour, unhealthy state before the Vines actually require assistance.

The early houses from which ripe Grapes are expected in May should now be closed for forcing. Old Vines that have been forced for a number of years will break readily at a lower temperature than young ones, particularly if the latter have made vigorous canes and have had but a short period of rest. After the house has been shut up for a few days, a night temperature of 50° to 55°, with a rise of 5° to 10° by day, will not be too high to start with. To secure this the introduction of well-worked fermenting material, combined with gentle fire-heat, will produce a soft genial atmosphere highly favourable to the Vine before and after it breaks into growth. Keep all the young rods suspended in a horizontal position over the fermenting material. Syringe the rods two or three times a day, damp the paths and walls, and apply water to the roots if necessary at a temperature of 90°. Pot Vines that are now swelling may receive similar treatment, with a slight increase in the temperature by day and on mild nights. Young Vines intended for fruiting in pots in 1879 should be cut back to a single bud, dressed with styptic, and kept in a cool dry place until the arrival of the time for starting them into growth. *W. Coleman.*

Orchard-house.—All the fruit will have been gathered now, except the very latest varieties. Some growers have been making inquiries concerning the clingstone Peaches, but the only one that I know of which has any claim to attention, is the late variety raised by Mr. Rivers and named Lord Palmerston. I stated recently that it was sometimes good, and that is all that can be said in its favour. It is a matter of surprise that those interested in Peach culture should not, either by crossing or selection from seedlings, try to obtain a late Peach of the Salway type that would come in between Late Admirable and that variety. For many years I grew Comet, as it was stated by Mr. Rivers to ripen a week or two before Salway, but this it did not do always. As for the "pavies," or clingstones, said to be so much esteemed by the Americans, they will not succeed in Britain; the dry warm climate of the Transatlantic continent may be more favourable to their perfect development. The late Nectarine, Stanwick, is not easily ripened in orchard-houses; it is one of the latest, but, like the clingstone Peaches, the flesh is tough, and the fruit is sure to crack unless the atmosphere of the house is comparatively dry, and the trees should also be kept rather dry at the roots. Rivers' Victoria, a seedling from it, is a much superior fruit, and one of the best late Nectarines.

I gave very recently some information about purchasing and potting young trees for growing in the orchard-house. It may not be amiss while the trees are at rest to make a few remarks about the construction of the houses for them. I have given some attention to the state of the trees in houses of different construction, and for the south of England span-roofed houses are to be preferred. The house at Loxford Hall is of that construction, 24 feet wide and 54 feet in length. It might be 100 feet long or more. One house at some distance from here, 20 feet wide and 80 feet long, also span-roofed, is well adapted for growing and ripening the fruit. The house is very roughly constructed; there is plenty of drip during heavy rains, the laps of the glass being such that almost every one of them forms a permanent open ventilator. The trees continue healthy and grow vigorously in such a house, and the continual ventilation from the apertures between the laps seems to keep red-spider, thrips and aphis away from them. Such houses are cool at night, and hotter in the day than gardeners usually keep such structures, but this treatment is just what Peaches and Nectarines require. In the North, half-span or lean-to houses seem better adapted for them, and I have never seen such rough structures in good gardens in the North. The most economical houses are those that have been erected against a south or west wall. The trees are planted against the wall, and one or two rows of pot trees are placed on the surface of the ground. The path in such a house may be 2 feet wide, and 2 feet from the back wall. The pot trees (which should not be so tall as to shade those nailed on the back wall) should be placed between the path and the front of the house. When a house of large dimensions has been built especially for Orchard-house trees it is very desirable also to place a heating apparatus in it; in the usual run of seasons it may not be requred, but I well remember a season of almost universal failure of orchard-house fruit owing to cold sunless weather, at the time the trees were in flower; North and South were alike in this respect, and all our trees bore a good crop owing to a judicious use of the hot-water pipes. In a cold season, when the fruit does not ripen kindly, a little artificial heat is most valuable to keep up the temperature when the fruit has taken its second swelling. The first opportunity that offers should be taken to thoroughly wash the woodwork of the house with soapy water; not too strong, as the soap would bring the paint off. The glass should also be washed clean with rain-water. All work that can be done at the resting period should be done. This is also the best time to cleanse the trees from scale. If it is possible to do so a mixture should be prepared, and all wood of the trees might be washed over by hand. Amateurs can prepare their own mixture; none is superior to soapy water thickened with flowers of sulphur; a little soot added to it tones down the glaring colour of the sulphur. *J. Douglas.*

PLANT HOUSES.

Orchids.—With the advance of the season, the advent of the winter, and, therefore, the diminishing of the heat and assistance obtainable from the sun's rays, we shall find that we are placed in the position of depending upon our heating apparatus for the supply, and also when required the increase of the temperature in all our houses. This, in a more or less marked degree is, in fact, the case almost all the year through; but during the summer months a matter of 5° to 10°, or even 15° advance in the daytime by sun-heat is not of much material concern, but now that less activity and growth is observable, or in fact desirable, such extra advances of heat would be very unwise, and most probably productive of much injury. Certainly an advance of from 5° to 10° in the daytime by fire-heat must be adopted, even as is always to be recommended; but beyond that it will not be safe to go. Being dependent therefore upon fire-heat chiefly for several months to come, it will be necessary so to use these means with care and attention, that from them we may get just the assistance we require, for an excess of fire-heat is apt in many cases to prove very destructive. The night temperature now should be as follows:—East India-house, 60° to 65°; Dendrobium-house, 55° to 60°; Cattleya-house, 55° to 58°; Odontoglossum-house, 50° to 55°: the higher numbers may be permitted when the weather outside is mild and genial; the lower figures, however, should be kept to when frost or cold winds or rain prevail. Raise the temperature 5° to 10° by day, but stop fires as soon as the thermometer indicates a sufficiency of heat—that will be in fact before the houses have advanced to the points indicated, for when the temperature is rising the advancing of the thermometer is generally at a less rapid rate than the rising of the heat would naturally lead one to expect; in a similar manner when a house is going down, as we express it, the glass will mostly continue lowering even after we may have thought that the turn of the temperature had taken place. When, too, the pipes are thoroughly heated, there will be a sufficiency in them to raise the extra heat, as well also as to keep the temperature up to any given point. If this is not attended to it will often happen that an excess of heat is driven into the houses, the injurious effects of which must be overcome by a large quantity of water being scattered about on the admission of an extra amount of air than would otherwise be needful. The injury resulting from a continuance of such a method would soon make itself apparent.

The supply of water at the roots, and the damping of the floors and stages, &c., will now be much less than hitherto has been the case; moreover, damp in the morning when the heat has commenced to advance, and in the afternoon little will be needed after 2 or 3 o'clock, according to the position of hte houses: this will allow some of the moisture to disappear before the night sets in. The Cypripediums of the barbatum section, now growing very freely, may still have a gentle sprinkling overhead once a day when the temperature has advanced sufficiently, but the long, flat-leaved species, such as C. Parishii, Lowi, Stonei, and lævigatum, though requiring plenty at the roots, are apt to retain the water in the heart of the growths if often syringed now, and damp and loss of the new leaves is often liable to occur. Keep a sharp look about the Odontoglossums, for the snails seem to have about the Odontoglossums, for the snails seem to have the power of finding out the tender spikes even more quickly than we can ourselves. A little night watching in this division must be done, else many spikes will assuredly be lost. Being cooler and moister than the other divisions the snails and slugs are found in this house much more frequently than the other houses. O. Insleayi leopardinum grown in baskets, in which it appears to do the best, should now be opening its flowers; it is one well worthy of being freely grown as it lasts long in flower, and the blooms are very showy and the colours bright and attractive. Remove plants of Dendrobium nobile into heat as the flowers are required, if the buds on the plants show in a prominent manner. Get in the needed supply of sphagnum moss and peat, so that if any fresh potting has to be done, no delay need take place through having to wait for the delivery and preparation of the materials. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 9, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 11	North-Western Amateur Chrysanthemum Society's Show (three days). Borough of Lambeth Chrysanthemum Society's Show (three days). Sale of Dutch Bulbs, at Stevens' Rooms
TUESDAY,	Nov. 12	Putney and Wandsworth Chrysanthemum Society's Show. Stoke Newington Chrysanthemum Society's Show (two days). Sale of Orchids, at Stevens' Rooms. Clearance Sale at the Upper Tooting Park Nursery, by Protheroe & Morris Sale of Stock at the Sale Nurseries, Loughton, by Protheroe & Morris (five days).
WEDNESDAY,	Nov. 13	Brixton Hill Chrysanthemum Society's Show (two days) Sale of Bulbs, Roses, Camellias, &c., at Stevens' Rooms.
THURSDAY,	Nov. 14	Torbay Horticultural Society's Autumn and Chrysanthemum Show. Walton and Weybridge Chrysanthemum Society's Show. Royal Agricultural and Horticultural Society of Jersey, Vegetable Show. Sale of Lilium auratum, Tree Ferns, Amaryllis, &c., at Stevens' Rooms. Sale of Stove and Greenhouse Plants at Prospect Hill Park, Tilehurst, Reading, by Protheroe & Morris.
FRIDAY,	Nov. 15	Tunbridge Wells Chrysanthemum Society's Show. Croydon Horticultural Society's Chrysanthemum Show (two days). Sale of Stock at The Nurseries, Highgate, by Protheroe & Morris (two days).
SATURDAY,	Nov. 16	Sale of Bulbs, Roses, Camellias, Shrubs, &c., at Stevens' Rooms.

THE attention of the Government of the colony of Victoria has been called, none too soon, to the rapid diminution of the WATTLE-BARK (Acacia sp.), used for tanning purposes. The bark is not only used largely in the colony, but is also largely exported. No regulations, or at least no sufficient regulations, have been enacted to preserve the trees and encourage the plantation of young ones, so as to ensure a continuance of the precious bark. In fact, it is the same history of indiscriminate destruction and utter recklessness as to the future, which seems to hold good all the world over with reference to forest products. After a time pressure begins to be felt, the alarm is given, there is a good deal of talk, perhaps a commission of inquiry, and if circumstances be very propitious, and legislators can turn their attention to such trifles as the productive resources of their country, something may be done. The Victorian Government, it appears, appointed a Commission to make a full and exhaustive investigation into the subject of Wattle conservation and the concomitant industry of bark-stripping. The Commission consisted of seven gentlemen, with a secretary. We remark the names of Baron VON MUELLER and Mr. BOSISTO among the members, and it is clear that the varied attainments of the colonial botanist were of no slight service to the Commission.

A most important point is raised as early as the second paragraph of the report of the Commission now before us, in which we are told that the "Board were impressed with the fact that during past years sufficient attention had not been paid to the cultivation of Wattles . . . although the bark trade had attained large proportions, besides forming the basis of the leather industry, one of the most flourishing trades in Australia . . . the advance of the leather trade . . . being almost entirely attributable to the . . . cheap and abundant supply of Wattle-bark, now acknowledged to be far and away the most powerful tanning bark in the world." This recognition of the necessity of cultivation shows at least that the Commissioners took from the first a correct view. As a rule the supply of no vegetable product can be large and continuous unless the plant can be brought under cultivation. Short of this the supplies must be precarious at the best, and in most cases tend to steady diminution. This must be the case when, as we are told, "no discrimination whatever has been used by the strippers, every tree capable of yielding a few pounds weight of bark being ruthlessly destroyed." And again "not only has the bark been stripped from young trees, but the strippers have spread their operations over the whole of the year—another militating circumstance, as the great mass of evidence clearly established the fact, that bark should only be stripped during three or four months of the year, out of the season there is a serious depreciation of tannin in the bark." The evidence laid before the Commissioners, it appears, was very conflicting, the present direct interests of tanners, strippers, and exporters being by no means the same. Consequently the Board very wisely determined to inquire for themselves at first-hand, by visiting all the districts whence the supply of bark is drawn and by inspecting the trees and the *modus operandi*—another circumstance which increases our respect for this Commission. Of course they soon found that the mode of stripping was characterised by "shameful and wanton waste," owing to the greed and rapacity of the strippers, who tore off the bark from the lower part of the trunk, leaving all the rest to waste, and young saplings of whipstick size being ruthlessly destroyed for the sake of a few ounces of bark. Fortunately the remedy seems easy. Over large tracts of country the "soil is everywhere full of Wattle seed," so that only a moderately stringent conservancy, and duly regulated period of stripping, would apparently suffice to put the relations between supply and demand on a proper footing.

The Wattle, or Mimosa bark, is chiefly supplied, it seems, from three species of Acacia, A. pycnantha, the broad-leaved Wattle; A. decurrens, the black Wattle; and A. dealbata, the silver Wattle. All these can be readily grown on waste lands in the colony, and, in addition to the bark, the wood and the gum exuding from it are of considerable value for industrial purposes. Having visited the several Wattle-growing districts for themselves and heard the evidence of those most concerned, the Commissioners, mindful of the fact that for want of due precautions adjacent colonies were now obliged to import wattle bark (their own supplies being exhausted), conclude their report with a series of recommendations, of which we can only give the substance. It will be easily understood that they recommend schemes of conservancy, cultivation, and of planting waste land, together with a proper system of licenses and leases. The report is a valuable one; not only for Victoria, but for South Africa and North-west India and elsewhere where these valuable barks might be grown. Its utility is increased by appendices showing what other plants, such as Sumach, Valonia, various Acacias, species of Eugenia, Banksia, Divi-divi, &c., could be advantageously grown for tanning purposes in Australia.

At a meeting held in Melbourne of those interested in the trade, we learn that a very favourable verdict was passed on the labours of the Commissioners, who indeed seem to have spared no pains, and to have well earned the eulogium passed on them in the following terms:—

"The Report itself is no ordinary production, but is creditable alike to the Commissioners individually as well as collectively. It is a digest of valuable information pertinent to the subject, illustrating the growth and nature of Wattles, as well as other trees of great commercial value, growing, and which ought to be cultivated in the colony; and is a compendium of botanical science, with a large amount of geographical information bearing upon the great extent of country traversed by the Board."

—— ANOTHER GIGANTIC AROID.—We have just received the following note from our obliging correspondent, Sig. FENZI, of Florence:—

"The readers of the *Gardeners' Chronicle* will be probably interested in perusing the following abstract from a letter recently received from Dr. BECCARI, from Sumatra:—

"'I have very little time to spare, only to tell you of a botanical discovery which I think is of some interest. It is a gigantic Aroid, which can only be compared with the Godwinia discovered by SEEMANN in Nicaragua. I have no books with me, and I am not able to ascertain the genus to which it belongs, especially as I have seen it only in fruit. I believe it to be a Conophallus, and, if so, I propose to name it Conophallus Titanum. The tuber of a plant that I dug up is 1 m. .40 (nearly 5 feet) in circumference. Two men could hardly carry it; they fell down, and the tuber was broken. I will secure some more, and I hope to be able to forward them to Florence in good state. Meanwhile, I send you some seeds. From this tuber, as in the genus Amorphophallus, only one leaf is produced, which in form and segments does not much differ from those of the above-named genus. But what different dimensions! The stalk at the base was 90 centim. in girth, it was slightly attenuated at the apex, and reached the height of 3.50 (10 feet); its surface was smooth, of a green colour, with numerous small, nearly orbicular dots, of a white colour. The three branches into which it was divided at the top were each as large as a man's thigh, and were divided several times, forming altogether a frond not less than 3 met. .10 long. The whole leaf covered an area of 15 metres (45 feet) in circumference. The spadix of a plant that I found in fruit had the dimensions of the stalk already described; the fruit-bearing portion was cylindrical, 75 centimetres in girth, 50 centim. long, and was densely covered with olive-shaped fruits 35—40 millimetres long, and 35 millimetres in diameter, of a bright red colour, each containing two seeds.'

This letter was addressed to the Marquis B. CORSI-SALVIATI, who received at the same time a number of seeds of this gigantic novelty. Many of them have germinated, so that the species is secured to European collections. To this first notice I may add that, from subsequent letters of Dr. BECCARI, it would appear that he was right in his first hypothesis. He has been lucky enough to find the flower of this Aroid side by side with the flower of the Rafflesia. I hope to be able to send you in a few days a complete description of this extraordinary flower, and a figure of the same taken from the original drawing sent by Dr. BECCARI. Many other new and rare plants are growing in large numbers in the stoves of the Marquis CORSI-SALVIATI, at Sesto, from seeds collected in Java and Sumatra by Dr. BECCARI. The experience, courage, and science of the botanist, the liberality and intense love for plants of the young nobleman, together with a competent staff of clever cultivators, will certainly make the gardens of Sesto become an important establishment for the introduction of new and rare plants. It will be the first in Italy. E. O. FENZI."

—— TURKESTAN.—M. ALBERT REGEL, who has collected so many new plants, especially bulbous-rooted ones, in Turkestan, continues contributing from time to time some interesting letters to the *Gartenflora*. The last we have seen is dated from Kuldscha, in the extreme east of Turkestan, and contains an account of a visit to the Chinese town of Shicho, &c. M. REGEL did not remain long in Chinese territory, as a report reached him from Kuldscha that war had broken out, though it afterwards proved to be false. From the narrative it would appear that this town has a very mixed and an exceedingly dirty and lawless population. Murder and theft are openly committed without punishment. On the other hand executions are of daily occurrence, and on an outbreak of cholera or typhus human sacrifices take place. The houses even of the government officials are most miserable buildings. M. REGEL only obtained permission to make botanical excursions in the neighbourhood after declaring that he should make them whether permission were accorded or not. The vegetation was very meagre, consisting of Salsolaceæ, grasses, various bulbous plants, as Allium, Tulipa, Ixolirion, &c. Preparations were made to proceed to Turfan, when the false news from Kuldscha arrived. The Chinese "Intendant" would not give permission for this trip, alleging that the Mahommedans of Turfan would resist the travellers, but the writer did not fear any trouble in this direction, as the Mahommedans always received him in the most friendly manner, "as in all Asia the people believe in the Russian as in a saviour."

—— LARGE HUNTINGDON WILLOW.—The Hon. M. E. G. FINCH-HATTON has contributed to the *Journal of Forestry* the following measurement of a Willow tree, Salix Huntingdoniana, which stands in the park at Haverholme Priory, Sleaford, and which is still growing vigorously:—Height, 60 feet; spread of branches, 213 feet; circumference of roots, 40 feet

10 inches; circumference of tree at 5 feet from the ground, 20 feet; and circumference of tree where the branches spring, 26 feet 6 inches.

—— Salvias for Winter Blooming. — The fine Mexican Salvia splendens is a famous old-fashioned plant for flowering in the autumn and winter months. At Gunnersbury Park Mr. Roberts plants out this fine Salvia for summer work in the open ground, and towards autumn, when frost threatens, the plants, which attain a great size during the summer, are lifted, put into suitably sized pots, kept in a cool house till root-action takes place, and then put into a warm house to flower. The buds formed in the open air expand, and numerous lateral spikes come out also during the winter. The flowers are of that beautiful hue of colour that is so acceptable at the dull time of year. S. gesneriflora, similarly used and treated, succeeds S. splendens, and blooms through the winter and far into the spring, but will bear more warmth than the former. A large bushy plant produces a great quantity of bloom, which adds to its usefulness. These Salvias may be classed among the things of which it can be said the grower can cut and come again.

——Growth of the Roots. — M. Resa, as quoted by M. Micheli, says that the roots of deciduous trees grow in autumn after the fall of the leaf till the growth is checked, but not altogether stopped by winter frosts. In the case of Conifers the growth of the roots ceases in winter, to be resumed in spring.

—— Odontoglossums at Gunnersbury Park. —An unusually fine spike of flowers on a plant of Odontoglossum Alexandræ is just coming into bloom among the Odontoglots at Gunnersbury Park. A plant not at all remarkable for the vigour of its growth has thrown up an unusually strong flower-stem, which has developed into a branched spike numbering on the whole nearly fifty buds. This promises to be very fine when the blooms are expanded. There is a large collection of O. Alexandræ at Gunnersbury, and several are coming into flower. They are much grown for cutting from, and they flower pretty well all the year round. One half of the north end of a low span-roofed plant-house contains the collection, the examples being in excellent condition, and all growing nicely. They are undergoing cool treatment, a little fire-heat being turned on at night for a half hour or so when the thermometer gets down to 40°. Mr. Roberts adopts the practice of piling up the soil (sphagnum moss, charcoal, and a little peat) higher about the stems of the plants than is usual, which induces a vigorous root-action. This plan Mr. Roberts adopts with his East Indian Orchids, and the house of these is just now in fine condition, especially the fine group of Phalænopsis, which are making a magnificent growth. Under the skilful management of Mr. J. Roberts Gunnersbury Park maintains its old reputation for high-class gardening.

—— Mesembryanthemum fragrans is now very charming in the cool end of the T range at Kew. It is one of that distinct and well-known section having short and stout creeping stems, thick tongue-like deep green leaves and yellow flowers. Among these it is one of the most select; no other flowers so freely, and this we believe is the only one with perfume. There are several flowers on the above plant, each nearly 3 inches across when spread open, and composed of a large number of narrow petals of brightest yellow. The perfume is sweet and most agreeable. In this house also are several pots of Nerine flexuosa, which though not highly coloured are still very attractive. This merit is chiefly due to the pretty undulation of the rosy segments, they spread wide open, and the flowers are numerous. The rare N. pudica is somewhat in contrast though scarcely less beautiful; the flowers are funnel-shaped the segments are nearly pure white, and without undulation.

—— Seaforthia elegans, fruiting at Endcliffe Hall.—A fine specimen of this Palm, about 30 feet high, flowered this season in Sir John Brown's conservatory at Endcliffe Hall, Sheffield, and is now ripening a fine crop of seeds. The spike with its orange-scarlet seeds is very ornamental. The same plant flowered last year, and Mr. Stevens, the gardener, has succeeded in raising a fine stock of young plants from the seeds thus obtained.

—— Passiflora cœrulea.—While many know the beauty of its flowers, there are few acquainted with the handsome effect of its fruit when grown in a favourable position. We have long known and admired a fine specimen growing on the wall of a house



Fig. 102.—Penrhyn Castle. (see p. 591.)

on the Lewisham Road, near St. John's Station, and when passing a few days ago were compelled to stand a few moments in admiration of perhaps hundreds of orange oval fruits, which had the finest effect imaginable. Its exposure is approximately south-west, the branches are trained close to the wall, and this, perhaps in great measure, assists the setting and ripening. Most of the allies grow with great rapidity, and it has often occurred to us whether there are not many kinds only at present grown indoors that would, if planted out, with some strength flower freely during summer, and make a fine display. The artificial rocks at Battersea Park would afford a good position, there they would ramble in a natural manner, and receive valuable help from the radiation of heat from the masses of rock.

—— ELM IN KENSINGTON GARDENS.—Near the north-eastern corner of the ornamental water in Kensington Gardens, a few paces from the Bayswater Road, and nearly opposite the statue of JENNER, stands the noble Elm to which one of our correspondents alluded in a recent issue. It has already passed its prime, some of its branches are already gone, others will shortly follow, the bole itself is in places a prey to fungus, so that the beauty of the tree is rapidly waning. The bole is furrowed with deep indentations and knotted with huge gnaurs, so that it is difficult to ascertain its precise girth, but at 4 feet from the ground, and not including the boss-like gnaurs, it is about 18 feet in circumference. The trunk breaks up into a number of strong limbs, some ascending more or less obliquely to form the head of the tree; others, especially on the side nearest the water, are horizontal, or even bent downwards, and breaking up at the extremity into a light, feathery spray of much grace and beauty. On the opposite side the tree is not so graceful or so finely developed, the roots on this side of the tree being beneath the hard-trodden pathway. The ultimate twigs are very slender and flexible. The leaves are about 3 by 1 inch, rough on both surfaces, especially the lower, oblanceolate acuminate, obliquely cordate at the base, with a very short petiole, and with the margin indented with coarse serratures, which are themselves finely toothed. The tree is very like the form known as U. viminalis, but we have at the moment no means of instituting a comparison.

—— ORCHIDS IN BLOOM.—At this time of the year, when there is so little in flower in the plant-houses, Orchids greatly enliven them with their bright and cheerful flowers. The following kinds are at present in bloom at Mr. WILLIAM BULL'S establishment at Chelsea :—

Vanda cœrulea
Zygopetalum maxillare
Oncidium crispum, several varieties
Masdevallia Veitchiana
Dendrobium bigibbum
Cypripedium Parishii
Maxillaria luteo-purpurea
Burlingtonia candida
Dendrobium superbiens (new)
„ formosum giganteum
Odontoglossum Roezlii
Oncidium Kramerianum
Cypripedium Sedeni
„ longifolium
Cattleya Harrisoniana
„ maxima
Masdevallia trochilus
„ velifera (new)
Mesospinidium vulcanicum
Calanthe Veitchii
Cypripedium insigne
Odontoglossum Insleayi leopardinum
Lycaste Skinneri
Dendrobium longicorne
Oncidium tigrinum
Sophronites grandiflora
Warscewiczella marginata
Masdevallia Harryana cœrulescens
Dendrobium album
Pleione maculata
„ Wallichiana
Cattleya marginata
Oncidium macranthum
„ ornithorhynchum
Phalænopsis grandiflora
Dendrobium secundum
Calanthe vestita rubro-oculata
Odontoglossum cirrhosum Klabochorum
Oncidium varicosum, several varieties
„ Rogersii
Odontoglossum crispum (Alexandræ)
„ Rossii majus
Cymbidium Mastersii
Odontoglossum vexillarium roseum
Restrepia antennifera
Oncidium Forbesii
Maxillaria venusta
Cypripedium Harrisianum

—— M. LINDEN'S NEW ESTABLISHMENT.—M. LUCIEN LINDEN, of Ghent, has just opened a branch establishment in Paris, in the Rue de la Paix, No. 5. The establishment was opened on the 29th ult., the plants which secured a prize of honour and a work of art at the recent Versailles Exhibition being exhibited. The Count of FLANDERS visited the depôt, and complimented M. LINDEN on the beauty of his exhibition.

—— THE ADULTERATION OF SEEDS.—The new Act to amend the Adulteration of Seeds Act, 1869, was passed in consequence of the decision of the Queen's Bench Division in FRANCIS *v.* MAAS. In that case the respondents had been summoned before a metropolitan police magistrate under the Adulteration of Seeds Act, 1869 (32 & 33 Vict. c. 112), s. 3, for having unlawfully, and with intent to enable another person to defraud, dyed certain Clover seeds. By section 2 of the same Act, "the term 'to dye seeds' means to give to seeds by any process of colouring, dyeing, sulphur smoking, or other artificial means, the appearance of seeds of another kind." It appeared that the respondents had, by subjecting a sample of inferior old Clover seed to a process of sulphur smoking, made it to resemble new and valuable Clover seed, but the magistrate dismissed the summons on the ground that there was no evidence that they had made the seed resemble seed of any kind different from Clover. This decision was upheld by the Queen's Bench Division, though with great reluctance. The Lord CHIEF JUSTICE said that the words "another kind" could not apply to a mere improvement in appearance, or to a case where the seeds had only been altered with reference to their apparent quality. Mr. Justice MANISTY shared in the regret expressed by the Lord CHIEF JUSTICE, but concurred in his judgment. The new statute contains only two clauses. By section 1 it is to be construed as one with the Act of 1869. By section 2, section 2 of the earlier Act is to be read as if (instead of the definition of dyeing seeds which it gives) it had contained the following words: "The term 'to dye seeds' means to apply to seeds any process of colouring, dyeing, or sulphur-smoking." This will, of course, render an alteration in the apparent quality of seeds punishable equally with an attempt to make them appear to be of another kind.

—— SUNFLOWERS.—Although the old variety of Helianthus that used to be at one time so much grown in cottage gardens cannot be considered a highly ornamental plant, several of the new double kinds are so, and are thoroughly deserving a place in any herbaceous or shrubbery border where room can be found to accommodate them. H. fistulosus flore-pleno is one of the best; it bears flowers quite 6 inches across, as full and regular in petal as an Aster, the colour of which is a bright canary-yellow, thus rendering it a very conspicuous and showy object in the distance. Some we have seen, grown as single plants and backed up by evergreens, had a very telling effect and were much admired, towering as they did well above everything else, and being immediately behind some Tritomas, with their fiery-looking spikes, the contrast was all the more striking. What makes them of more value is, that they last well into the autumn, and are not injuriously affected by wet or damp nights, as just at this time they are as bright and fresh looking as ever. The seeds in this case were sown singly, in 3-inch pots, the beginning of May, and kept under glass till the end of the month, when they were transferred to their present positions. Being naturally gross feeders, they require a rich soil with plenty of depth, but, like the common variety, they will grow almost anywhere in a sunny position. The best way, however, to get them really fine is to dig large holes where they are to be planted, and in returning the soil to mix in some rotten manure, as then their roots can ramify freely and obtain plenty to feed on. Besides its fine large globular flowers, H. fistulosus flore-pleno has very ornamental fioliage, and is altogether a plant deserving of extensive cultivation.

—— HAWS.—Should a hard winter come—and such an event is not impossible, although now not usual—the birds will not be wanting many a good meal for some time to come. The crop of haws this year is a remarkably abundant one, and is entirely in keeping with the produce of other trees and plants in a state of Nature. The deer and the manufacturers of starch have their Horse Chestnuts, the pigs their acorns, the boys and girls their rich feasts of Blackberries, the lovers of Christmastide and its old-world decorations their bright-berried Holly boughs, then why not the birds their winter store of haws? And so they have. Fortunately for the feathered tribe man has few uses for the berries of the Hawthorn, the chief one being the raising of Quicksets for the formation of hedgerows, and to produce these the haws are indispensable; the renewed hedges, however, may not be all kept as are railway fences, and some may furnish in years to come increased supplies of food, therefore the birds can hardly complain if some of their winter stores are filched by man for a needful purpose. As yet these stores remain untouched, they are the "reserves" to which the feathered army, when beleaguered by cold and the stern forces of Nature, will look in time of need; but now, whilst the sun shines brightly, and Nature is even gay and pleasant, the birds find in the countlesss weed-seeds that would otherwise become fertile in the soil an abundance of food, of which the more they partake the better for the land and the tillers of it. When, driven for food, the small birds eat a little corn or other produce useful to man, a mighty alarm is raised, and the little winged denizens of the air are ruthlessly denounced and slaughtered. What good they do by the consumption of insects and weed-seeds few care to find out. Give them their due, and when hard weather comes leave them to enjoy their haws in peace.

—— INSECT POWDER FROM RAGUSA.—We learn from a report on the trade and commerce of Ragusa that the value of insect powder exported from that port alone during the year 1876 amounted to nearly £3000, the greater part being sent to Trieste, where it is adulterated before being sold. In consequence of this practice the Ragusa Chamber of Commerce has issued a circular putting the public on their guard, and of which the following is given as a translation :—

"It is well known that the blossom of the Chrysanthemum cinerariæ [?], which must not be mistaken for the less powerful Pyrethrum carneum of Persia, contains properties of a poisonous nature, and when reduced to powder an exhalation most destructive to insects takes place. It is much used, not only in private houses against moths, but also by furriers and others. The whole of Dalmatia, and more particularly the district of Ragusa, supplies the greater quantity of this article, its quality varying in a considerable degree, according to the state of the blossom, which, when gathered on the mountains in a half-developed form, is much more powerful than that found in the plains in full blossom. The price, therefore, varies according to the quality mixed. There are dealers at Trieste who adulterate the genuine article by adding to it the blossom of a plant very similar to the Chrysanthemum cinerariæ, but which contains but an insignificant amount of poison, the result being that the purchaser, having been supplied with a spurious article, finds all his goods destroyed at the end of the summer. With the view to exposing such nefarious practices, and putting the public on their guard, the Chamber of Commerce at Ragusa have issued the present circular, at the same time recommending that the blossom of the Chrysanthemum should be purchased in its natural form and then powdered, or if the article be preferred ready prepared that some respectable firm at Ragusa should be applied to."

Regarding the plant referred to in this circular it is not plain what species of Chrysanthemum is intended.

—— TALISIA MEGAPHYLLA.—We are informed that the rarely seen stove shrub, Talisia megaphylla, is now in bloom in the rich collection of Mr. W. H. CRAWFORD, at Lakelands, near Cork.

—— RECENT AMERICAN INVENTIONS FOR DESTROYING INJURIOUS INSECTS.—Most crops are more or less exposed to the depredations of insects at some stage of their growth, and the cultivator has to be constantly on the alert to devise some means to entrap them. In nearly all cases the insects are different—that is to say, different insects prey upon different plants—and the same trap is not available. For example, the Cotton plant is preyed upon by the army-worm, the larvæ of a night-flying moth (Leucania unipuncta), and the cotton-worm, the larva of an olive-brown moth called Aletia argyllacea. From the well-known nocturnal habit of these moths, and the certainty of their being destroyed by a light, a cheap and effective mode of destroying them has been adopted. It consists of pans of viscid matter placed upon posts at suitable distances in the cotton fields. A block of wood is placed in the centre of the pan, upon which is seated a lighted glass lantern. The moths, being attracted by the light, dash against the lantern and fall into the pan, and are thus destroyed before depositing their eggs upon the tender leaves of the growing plant. The army-worm is arrested in its migrations by ploughing a deep furrow around the field, and making it smooth by drawing a smooth log of wood along the furrow. The worms fall into this, and are unable to ascend the sides. A safe and novel method of killing the worms has recently been invented. It consists of a sheet-iron furnace, having the form of a half-cylinder, tapered at the ends, in which a fire is kindled, and this heated furnace being drawn along the furrow destroys the worms. Previous to this invention it was customary to strew dry straw along the furrow and set fire to it, but this was often attended with danger.

This heated iron boat can be used without danger, and at the same time it serves to keep the inside of the furrow in a smooth and firm condition. Among inventions to destroy the Colorado beetle we find one for sifting Paris green (arsenite of copper) upon the growing plants; but it has been seriously questioned whether the use of a deadly poison upon food-producing plants is a justifiable proceeding. It is, on the one hand, claimed that in those sections of the country where Paris green has been used no evil has resulted therefrom; on the other hand, some well-informed physicians state that gastric diseases are more prevalent where it is freely used than in adjoining sections where it is not used. Among mechanical devices for the same purpose two are described in the report of the American Commissioner of Agriculture. The first is a machine, the rear end of which is mounted upon two wheels. A trough, with a runner-like bow containing some adhesive matter, is suspended upon each side of the row. A vibrating arm or beam, carrying whisps or brushes, is adjustably suspended from the frame, and, as the machine is pushed along astride the row of plants, the insects are shaken into the trough, from which they are unable to escape. Another machine, constructed upon the same general principle, instead of having a trough with adhesive matter to entrap the insects, is provided with a pair of crushing rollers, between which the insects are crushed. The machine is supported upon two wheels, one in the rear of the other. The body is hopper-shaped, with a pair of crushing rollers on the bottom. On each side there are revolving wings, which sweep the insects into the hopper, and in addition to these there are two gathering-fingers, which support the haulm during the passage of the machine.

—— Gravesend, Northfleet, and Swanscombe Chrysanthemum Society.—The fifth annual exhibition of this Society will take place on Tuesday and Wednesday, November 19 and 20, 1878, at Milton Hall, Gravesend.

—— The Royal Metropolitan Root Show, which is under the exclusive management of Messrs. James Carter & Co., is announced to be held at the Agricultural Hall, Islington, on Saturday, November 23, when a series of prizes for Mangels, Swedes, Turnips, Kohl Rabi, Potatos, and other roots, &c., will be competed for.

—— The Royal Midland Root Show.—Messrs. Harrison & Sons announce that their ninth annual exhibition of farm roots, &c., will take place on November 20 and 23 in the Market Place, Leicester, when silver cups and other valuable prizes will be awarded for the largest and handsomest roots grown anywhere from seed supplied by them.

—— Guy Fawkes Day.—We regret to learn that on the night of November 5, a son of Mr. Coleman, gardener to Lord Somerset, Eastnor Castle, was so much injured by the explosion of an old blunderbuss, which he was firing, that his hand had to be amputated.

—— The Pampas-grass.—The great wealth of silvery plumes many well-established plants are displaying this autumn is a subject of general remark, and it is perhaps in great measure owing to the heavy and continuous rainfall of the summer. The Pampas-grass just now plays a most important part in the grounds of Gunnersbury Park, Acton, the residence of Baron L. de Rothschild. The fine specimens round the large ornamental pond growing out of the sloping turf banks, with a sombre shading of shrubbery behind them, are particularly attractive with their graceful outlines reflected in the water below. Many plants about the grounds are seedlings, and it is interesting to note the difference in the seminal varieties, which, though not very pronounced, yet supply a pleasing variation. In the new pleasure-grounds near the ornamental water there is a large bed of the Gynerium, with a line of Arundo conspicua as a margin. There is much force in Mr. Roberts' remark that it would have been better to have mixed the two together, and cut away the spikes of the Arundo as soon as they began to get stale; the bed would then have been furnished for a longer period. Some standard plants towering above the silvery plumes, and having dark or red leaves, or some bright coloured foliage, at this time of the year would make an effective combination, and form a feature in the landscape. The Pampas-grass is, to a great extent, an accommodating plant, and it is found to do well in various situations, but it is especially effective on the margins of lakes, and as isolated specimens where it can contrast with appropriate surroundings.

—— Institution of Surveyors.—The first ordinary general meeting of the session will be held on Monday, November 11, 1878, when the President, Mr. William Sturge, will open the session with an address. The chair to be taken at 8 o'clock.

—— Gardening Appointments.—Mr. T. Laird, late of Dunninald Castle Gardens, Montrose, has been appointed gardener to the Earl of Southesk, at Kinnaird Castle, by Brechin, in succession to Mr. Cruden, who has gone to the Queen's Park, Glasgow. —Mr. J. Batters, gardener for upwards of nine years to the late John Fleming, Esq., and Mrs. W. Fleming, at Chilworth Manor, Romsey, Hants, resigned that appointment last spring, and during the present autumn entered the service of Admiral Henry Eden, as gardener, at Gillingham Hall, Beccles, Norfolk.—Mr. Ward, late gardener to Lord Willoughby de Broke, at Compton Verney, Warwick, has been appointed gardener to the Hon. E. S. Parker Jervis, at Aston Hall, Sutton Coldfield.

SELECT TREES AND SHRUBS FOR OUTSIDE WALLS.

(*Continued from p. 561.*)

Having briefly noticed the principal introductions best suited to our purpose from the New, we now pass on to the Old World, from the northern half of which we have obtained a rich supply, especially from China and Japan; our collections have been considerably enriched from these countries about a quarter of a century ago by the travels of Mr. Fortune. It is to the shrubs chiefly from this region that the following remarks allude.

Xanthoceras sorbifolia.—This splendid shrub is without doubt one of the most valuable introductions of recent years. It is a native of Mongolia, and was sent from thence to Paris about ten years ago, and subsequently reached this country. It is of a bushy habit, growing about 12 feet in height, with alternate compound leaves, produced about the same time as the flowers, in the beginning of April, and which are borne in dense terminal racemes 8 inches or even more in length. The colour of the blossoms is white, suffused with pink, with centre of a colour varying from violet-purple to dull red. As it flowers when in quite a small state its value is thereby much enhanced, as it will be very suitable for pot culture in cool greenhouses as well as outside, where in some localities it has proved of sufficient hardiness to stand without even the protection of a wall, but as a rule those who are the fortunate possessors of this as yet rare shrub should not risk it under such treatment. When more common it will inevitably become as popular a favourite as it richly deserves, and then perhaps by grafting on its near and hardier neighbour, Kolreuteria paniculata, it will infuse a more vigorous constitution, better adapted to the full rigour of our climate. A fine illustration of this plant was given in these columns in vol. v., p. 564.

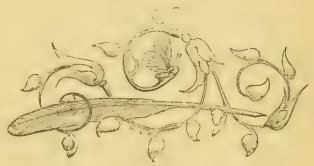
Tecoma grandiflora is a splendid climbing shrub, a native of China and Japan, and greatly resembles the North American T. radicans, especially the major variety, but it has much larger flowers, and differs also in several other characters. In old specimens the stems are of considerable thickness, with slender branches, which emit roots as in the Ivy, and so fastens itself to a wall; the young shoots are spotted with dark purple; the leaves compound, with seven to nine ovate, coarsely-toothed leaflets. The flowers are large, with a spreading mouth, of a bright reddish orange colour inside and somewhat of a duller hue outside, and are borne in terminal pendulous panicles from July to September. In order to secure a good crop of flowers it should be afforded a warm and sheltered situation, with thorough drainage of the soil; though it is perfectly hardy in other positions it seldom flowers with satisfaction. Considering its high merits, and the fact that it is an old introduction, it ought not to be of such unfrequent occurrence in gardens as it is.

Forsythia suspensa.—This charming shrub is undoubtedly amongst the most valuable decorative plants from the wealthy Japanese flora. Flowering at a season when all kinds of flowers are welcome visitors, it is both a strikingly attractive object outside and useful in a cut state for indoor decoration. It is a deciduous shrub of semi-climbing habit, with slender gracefully drooping branches which in early spring are densely covered for nearly their whole length with its golden blossoms, and though unaccompanied by leaves it forms a very striking object at this season. F. Fortunei is probably a garden synonym of it. F. viridissima is another fine species from North China, producing its flowers about the same time and much resembling them in size, form, and colour. It is not well adapted for training to a wall on account of its stiff erect habit, and as it is quite hardy without that protection it is best seen to advantage in ordinary borders in combination with other shrubs.

Rosa bracteata.—This, the famous old Chinese Macartney Rose, has few rivals amongst Roses, even the popular hybrid perpetuals, China Teas, &c., will not compare with the chaste beauty of this lovely species when seen in perfection. Probably a description is needless to many of my readers, but those who know it not may be asked to imagine a shrub of vigorous habit with rich deep green foliage, about the shape and size of an ordinary Rose, and profusely studded with pure white spreading single blossoms nearly 3 inches across with a cone of golden stamens in the centre, and of delightful fragrance. It is moreover evergreen, a point not possessed by the ordinary varieties, and altogether it makes one of the most desirable wall plants we have. It is too tender to stand without such protection, but if it were "worked" on some hardier kinds it would probably be quite hardy. The Banksian Rose (R. Banksiæ) is another highly ornamental species, deserving a place in every collection.

Pterostyrax hispidum is rather an uncommon deciduous shrub, belonging to the order Styraceæ and nearly allied to the beautiful Snowdrop-tree (Halesia tetraptera). It is of coarse growth, with large cordate leaves on stout petioles. The flowers are white, and much resemble those of Halesia and are produced in corymbose racemes. The fruits are covered with stiff and dense hairs, hence its specific name. A fine specimen of this handsome shrub exists and flowered and fruited well this year in the fine collection at Bitton Vicarage, and as seen there it presents a strikingly bold feature in wall decoration. It is a native of Japan, and was figured a year or two since in the *Revue Horticole*.

(*To be continued.*)



Home Correspondence.

Hardiness of Plants.—With respect to the hardiness of a certain class of plants the Rev. C. W. Dod says, "Lift your plants up, store them away." "J. S." says the opposite, "Leave them in the ground, cover them up with leaf-soil, unless the ground is wet and heavy." Well, I will say prevention is better than cure. Store all away that you want to save, but I do not believe in keeping bulbs on a shelf dust-dry, for there are more bulbs and tubers lost that way than by keeping them very wet. But neither of these are the proper thing; there is a medium. I have seen Salvia patens, Gladiolus, Dahlias, Ixias, Tritonias stand out without any protection for several seasons, but when least expected all were gone. I have had Woodwardia radicans, Ficus repens, Selaginella denticulata, Davallia canariensis, Acacia armata, and other plants stand out for several winters, but these were plants that I did not want, or I should not have left them out, so I would advise every one to take care of them when they have them. *John Clews, Kells, Co. Meath.*

Wintering Caladiums.—A word in season is oftentimes instructive as well as interesting, and this remark will hold good with reference to the wintering of the Caladium. I think the majority of cases where failures occur may be justly attributed to the abrupt manner in which their growing season is brought to a close. Instead of water being gradually withheld, they are subjected to constant saturation until the very last, when they are cast under the stage, and possibly left to care for themselves, and thought no more of until their starting time comes round again, when the evil of their turning to a hard chalk-like substance is too apparent. Under such treatment as this favourable results can hardly be expected, for it is a fact well known that sudden changes of any description connected with horticultural subjects is conducive of evil results. So it is with the Caladium under the conditions I have here stated; but if brought to their resting state with as much care and attention with regard to water and temperature as when starting them, and I think there would be fewer disappointments, and less occasion for attributing the cause of failure to over-drying. As your remarks testify (p. 502), my experience brings me to the conclusion that if this simple rule be attended to, then

by laying the pots on their sides near the pipes under the driest and warmest stage at command for their winter repose, no sprinkle from the syringe or watering-pot will be necessary to insure good sound tubers for the following season's supply. *E. Morgan, The Butts, Harrow-on-the-Hill.*

Nursery Sales.—The season of nursery sales has now fairly set in, and all through the winter will come announcements of the intended dispersion of an enormous amount of trees, shrubs, and plants of all kinds in all parts of the kingdom. There is nothing new in this method of disposing of a nursery stock-in-trade; but without doubt it has of late made a great development, and the services of the trade auctioneer are perhaps more in request than that of the traveller or usual trade salesman, but in this change no doubt is seen a disposition on the part of numerous members of the trade to be content with smaller profits with quicker returns. Auction sales mean a ready-money business be the profits ever so small, whilst in clearing large breadths of stock a great boon results to the grower, who thus sees the last of much that might perchance encumber him for many years, and in the end prove useless. Still, looking at the immense quantities of nursery stuff that now annually comes under the auctioneer's hammer, one is led to wonder what ultimately becomes of it all. At all large sales there is a considerable representation of the trade who buy cheap, perhaps cheaper than they themselves can grow similar material. These cart their purchases to their respective localities, plant them up, and retail out at a profit to their surrounding customers. There are such a vast number of these retail traders in the kingdom, that it is surprising to find them all doing a fairly thriving business. No more tangible proof of the wide expansion of horticulture, and the popularity amongst all classes to which it has attained, could be shown than in the existence of these myriads of local nurserymen who remain unknown to fame. Many private persons of large means become purchasers at sales, whilst locally not a few of those whose gardens like their means are small, pick up bargains. The fact that sales are becoming so abundant tends to show that, in the long run, they pay, and if the system of trade is healthy and profitable, there is no reason why it should not assume a wider development. *X.*

The Weather.—We have been having quite wintery weather here for the last week—snow, hail, and frosts, thermometer falling as low as 25° on Thursday night. The ponds were covered with ice, tuberous rooted Begonias cut to the ground, all bedding stuff quite done for with the exception of Fuchsias; these have not suffered much, Wave of Life stood it best. Marrows, Scarlet Runners, &c., are also done for, but to-day there is quite a change, though the wind is in the north. This has been like a spring day. The trees are shedding their leaves fast with the exception of the Oak, and these are only just turning their colour. *John Clews, Kells, Co. Meath.*

Pears for Late Use.—Your correspondent Mr. Sheppard, in his useful article on "Hardy Fruit Garden," (p. 563), makes a serious mistake in stating that Glou Morceau, Bergamotte d'Esperen, and Joséphine de Malines, are the only really good Pears for late use (after Christmas). I have always found Winter Nelis and Easter Beurré most valuable, and they should never be overlooked where a supply of good late Pears are required. *T. Keetley, The Gardens, Darley Abbey.* [The quality of Easter Beurré is good only on favourable soils. EDS.]

Yew Poisoning.—The numerous accounts of Yew poisoning which have appeared in your columns must, I think, dispel all doubts in the minds even of the most sceptical as to the fatal effects produced upon animal life by eating Yew branches. Nevertheless the following case, which came under my notice, will more fully demonstrate the fact. It was that of a donkey which was turned out into a paddock in which were growing some Yew trees, of which the animal partook rather too freely, insomuch that a few hours decided its fate, it having been discovered cold and stiff not far distant from the scene of his deadly repast. If there be any truth in the saying that "dead donkeys are rarities" then the present case is all the more noteworthy. *E. Morgan, The Butts, Harrow-on-the-Hill.*

The Fertilisation of the Scarlet Runner.—I beg to enclose a few flowers and pods of the Scarlet Runner, and it will surprise me very much if on examining the flowers you do not find them fertilised, and that by no extraneous aid, as some of the flowers have certainly not been perforated by insects. [Our correspondent has quite mistaken the point. EDS.] I examined one flower this morning, November 3, after reading Mr. Henslow's article in your last issue (p. 561), and I found it fertilised. Until I read that article I had been of opinion that the non-setting of the flowers was due entirely to atmospheric causes, as I have observed that when there has been a succession of wet weather the flowers mostly drop, and also when the weather has been for some time very dry. The plan I generally pursue with Scarlet Runners is to plant them on each side of a walk and train them over rods formed into an arch; by this plan I have them under good command, as I can mulch them with good manure and give them water very easily, and should dry weather set in I nightly water them overhead with the garden engine, and I have never yet failed in making them set. *William Armstrong, Ford Manor, Lingfield, Surrey.*

Hardiness of Aloysia citriodora.—In the kitchen garden at Broxmouth Park, Dunbar, there were two standard bushes of this sweet shrub growing most luxuriantly twenty-five years ago; they were some 4 feet high when I went there as apprentice in November, 1849, and during my three years' sojourn made a growth of 2 feet each year. When winter set in a mat was wrapped round each, and in the beginning of the following March, after a few dry days, they were uncovered carefully, and the dry brown leaves collected for scent. The plants were then clipped into shape. At that time there were two large Fig trees on the walls which ripened yearly some fifty dozens of fruit; these trees also had the protection of mats in the winter. *William Armstrong, Ford Manor, Lingfield.*

Potatos at Chiswick.—Fearing lest my remarks upon the subject of Woodstock Kidney and Potatos at Chiswick might be construed to imply a censure upon Mr. Barron, I hasten to explain that no such thing was intended. My remarks applied solely to the action and regulations of the committee, and not to any assumed remissness on Mr. Barron's part, as no one could be at any time more anxious to deal justly with every person who may send subjects for trial to Chiswick than that gentleman. To your note as to what a raiser should do if he wishes to secure the coveted honour of a certificate for his seedlings, I would reply that in this case the raiser, or rather myself acting for him, did do all that was in his power to do by sending some of this particular kind to Chiswick to grow, and that further, mindful of the regulation laid down by the committee that no certificates would be granted to Potatos except at Chiswick, he felt that it would be useless to submit samples of his growing before the committee at South Kensington. It is not, I believe, the rule to convene meetings of the Fruit Committee at Chiswick except for the consideration of specific subjects under trial that season, and it would be ridiculous to call together a committee on purpose to examine perhaps only a few sorts of Potatos, but if the rule above-mentioned is to be enforced, the committee ought to be as attentive to the merits of a single sort of Potato as to those of a hundred sorts of Strawberries. [And why not? EDS.] It is quite enough that any new kind of Potato should be grown at Chiswick that the superintendent may report as to its identity or otherwise, its season of ripening, and its general cropping qualities. A full committee at South Kensington may then, with the raiser's samples before them, easily deal with it. It is to be desired that some such simple arrangement should be adopted in the future. *A. D.*

Proliferous Plantains.—In June last mention was made in the *Gardeners' Chronicle* of an abnormal but beautiful form of the Buck's-horn Plantain (P. Coronopus), collected in a wild state by Mr. W. W. Reeves in Sussex. I read the note with great pleasure, and it has induced me to bring to notice two other forms, not of P. Coronopus, but of P. maritima. One form bears a subumbellate panicle, the flowers replaced by small ovate-lanceolate green scales. The plant retains its character under cultivation, and has borne no less than ninety trusses this season. In the other form the inflorescence is replaced by a fasciculus of leaves 2½—3 inches long by 1 line broad, supported on a stem 7—8 inches long. This latter form I have only in a dried state. Both forms I collected on the banks of the Humber, in Yorkshire, in September, 1877. *T. Entwistle, Royal Botanic Garden, Manchester.*

Clematis Pitcheri.—I thought I knew Clematis Pitcheri fairly well, having collected it in Texas, and there are specimens in my herbarium from various sources. Moreover, I have had it in cultivation for six or eight years, and in the herbarium specimens as well as those in the garden the flower is always in accordance with the original description of Torrey and Gray—"dull purplish." I was much surprised to see so familiar a plant figured in the *Revue Horticole* with bright red flowers, and was glad to note that, in a later number of the *Gardeners' Chronicle*, you pointed out the error. Soon after this one of your horticultural contemporaries asserted with some circumstance that the flowers of Clematis Pitcheri were properly scarlet. This re-opening of the case induced me to look into the matter. In 1850 Dr. Lindheimer collected in Texas (No. 383) a scarlet-flowered Clematis, to which Dr. Engelman gave the name of Clematis coccinea, but he did not, so far as I can learn, publish the name. The same plant was collected by Mr. Charles Wright "about Austin, and towards the Rio Grande." In *Plantæ Wrightianæ*, part 2 (1853), Dr. Gray records the plant as Clematis Viorna var. coccinea, C. coccinea, Engelm. MSS. The leaves are more glaucous, and the thick sepals of a pure carmine-red, very rarely purplish, but in the common C. Viorna they are some shade of red-purple. What Dr. Gray may finally do with this remarkable plant we shall not know until he revises the genus for the *Flora of North America*. I am glad to know that this variety is in European gardens, as it is not, to my knowledge, in cultivation in America. *X. Y.*

The Eucalytus globulus.—Your warning respecting the hardiness of this tree (p. 532) is well-timed against the favourable opinions of several writers given of it in the daily papers. Mr. James Stewart, once one of my foremen, but now a prosperous nurseryman near Memphis, Tennessee, has informed me that he has planted many hundreds of this tree in his nursery at Elmwood, and that they have been invariably injured or killed when the thermometer descended below 10° of frost. Now his nursery is in the valley of the Mississippi, where the climate in the summer is semi-tropical, what chance therefore can this Eucalytus tree have of living in our severe winters? He believes that the tree can only be safely planted in Florida, or some other of the more southern States of North America, and that all the other varieties of Eucalytus will be found to be like E. globulus in hardiness. In a sanitary point of view there are many of our hardy coniferous trees that ought to be planted in quantities in unhealthy districts, such as Scotch Firs, Pinus insignis, Larches, and the Pinus Pinaster on the marshy and sandy tracts on the sea-coast. The balsamic emanations from these trees, where extensively planted, will, I have no doubt, have as much virtue in them as those of the Eucalytus, and then there is the value of the timber to be considered when the trees arrive at some size. Owing to the rapidity of growth of this Eucalytus, trees of it in the last two or three years have already in favourable sheltered situations got to a good size; but there has been no severe frost to try them, and our first severe winter will infallibly kill them, or injure them so much that they will never make trees. In the warmest shelter of situations of the South of England, or in the Channel Islands, they may have a chance of growing to some size. *William Tillery.*

Auriculas, &c., Blooming in October.—Most cultivators are familiar with the blooming of Primulas in the autumn and winter; hence, though such excite the interest of provincial or metropolitan editors in search of paragraphs in the dead season, horticulturists mostly smite at the so-called unnatural phenomenon, but Auriculas as a rule are more steady to time than Primroses. We planted a north border with alpine Auriculas last summer; they flowered well, and have been flowering freely a second time all through October. Violets have been gathered in any quantity ever since the middle of September, the varieties being the double Russian Czar and Victoria Reginæ, flowering in the order here stated. The double white and the Neapolitan, in equally or more warm positions, have not shown a single flower. This autumnal flowering of Violets does not affect the spring flowering, as it might be expected to do. Seldom has there been such a full harvest of Violet bloom in the autumn as this season. The plants are always renewed annually, and this is the only secret of plenty of Violets alike in autumn, winter, and spring. *D. T. Fish.*

Autumn-blooming Pentstemons.—A number of fine spikes of the Pentstemon, staged at the last meeting at South Kensington, excited considerable notice because of the lateness of the season at which such good examples were seen. As several inquiries were made as to the why and wherefore of the existence just now of such good spikes I wish to say that they were entirely the product of spring-sown seed, sown indeed early in March in pans in a cool house, where such growth resulted as to enable the plants to be dibbled out into their permanent quarters in the open ground at the end of May. These soon get established and grow freely, sending up spikes of bloom from the early part of September until severe weather sets in, which is seldom severe enough to affect the Pentstemon here until November. By sowing seed every spring a long succession of flower is ensured, as these plants the next spring commence blooming early, and do so all through the summer, and furnish a most acceptable and varied lot of vase flowers. The spring-sown plants then succeed, and continue the bloom two months longer. It is wise to destroy all the old plants each winter, as these get ragged and uneven and some will die, whilst the

younger plants stand well. It is simply a question of sowing seed every March and thus maintaining a constant succession in just the same way that Stocks, Wallflowers, Antirrhinums, and other biennials require to be maintained in abundant succession. Few plants more thoroughly reproduce themselves as good forms from seed than does the Pentstemon. It always shows a tendency to improve and to give variety, and so easily is a batch of seedlings raised that for border culture only it is simply waste of time to bother with cuttings. *A. D.*

The Colouring of Grapes. — One of your correspondents asks the question whether the seasons of this year, which have certainly been abnormal, may have caused his Grapes not to colour well. I reply that he is not a good workman who finds fault with his tools; and in this case I think he must have done so. I think I have to thank my gardener for having averted that complaint from my four vineries, which have produced this year the largest crops of well-coloured fruit that I have ever seen; and Mr. Henderson, under whom my gardener was reared, thought he had never seen such a crop in size of berries, and colour, and weight, as one of my Barbarossas. It is estimated to be now bearing 50 lb. on thirteen bunches; and about ten years ago it carried in February the 1st prize at the Crystal Palace against, among other competitors, Messrs. Tillery, of Welbeck, and Thomson, then of Dalkeith; and I have had a good winter crop from it always. The reasons why Grapes do not colour well are chiefly red spider, or an excessive number and weight of bunches, either in the same year or in the previous one, which has prevented the wood from ripening. I have had Grapes for consumption sometimes every day of the year. The houses are about 36 feet in length (and no Vine is allowed more than say about 3 feet), the breadth 20 feet, the height 14 feet. Mrs. Pince has rather disappointed me; Golden Queen has proved a well-flavoured acquisition. All my Vines are planted outside, and have no protection except some straw thatching, and occasionally some manure-water, or liquid guano, is given. As to your correspondent's letter about Tomatos, I cannot advise anybody in the Midland Counties to raise them otherwise than under a south wall. Mine have done well this year. *G. H. V.*

The Seedling Brier.—Allow me to add my testimony to the superiority of the seedling Brier over any other kind of stock for dwarf Roses. If any one has a doubt on the subject I would advise him to try it for himself, and the present is a good time to gather the pips of the Dog Rose growing in hedgerows. The plan I have found to answer best is to sow the seed at once in pans, placing them in a close frame. The advantage of sowing now is that the seedlings are in an advanced state to plant out in spring, whereas, if sown in spring in the open ground they are not so strong for budding in the following autumn. There is a marked difference in some Roses I have growing in pots budded on the seedling Brier and others on the Manetti stock. Those on the former are much stronger in growth, and the flowers finer in quality. *E. Holliday, The Gardens, Preshute House, Marlborough.*

Amaryllis Belladonna.—This has for a long time been a special favourite of mine, and I am glad to find it doing so well elsewhere, as it is one of the most beautiful of all the Lily tribe, and thoroughly deserving of a more extended cultivation than it now has. Its habit of late blooming when the other varieties are over makes it doubly valuable, for in fine dry autumns like the present it lasts in bloom quite till the end of October, and it is one of the most effective and useful things that can possibly be had for cutting, as the flowers are almost as durable in water as when left on the plants. The only drawback it has is in flowering without any foliage, as all the leaves die away in August, but an excellent substitute may be had by using those of the Iris or Tritoma for dressing with them in vases, either of which associate well. Many who have tried them have been unsuccessful in getting them to bloom freely, but I have never experienced the least difficulty in this, which may in a measure arise from the natural lightness and dryness of our soil; but even with this advantage I should not have them so fine as they are if we had not specially prepared a place for them. This was done by digging out a narrow border in front of our greenhouse a yard or so deep, in the bottom of which we put a quantity of broken brick, and on them a coat of half-rotten manure, so as to keep the interstices clear, and give the plants something to feed on. Part of the natural soil was then mixed with leaf-mould and sand, and returned to its place, and the bulbs planted a foot or so apart. The border is now one compact mass of these, with flower-stems almost as thick as they can stand. From watching them closely, I am of opinion that there are two causes that bring about failure in growing Belladonna Lilies—the one is in not giving them sufficient water during summer to bring about a full and healthy leaf development, and the other in allowing them to become frost-bitten during the winter. The tendency of this Lily after being planted a short time, is for the bulbs to become so crowded as to push each other near the surface, and if not protected, all the uppermost, which are the strongest and best ripened, get their crowns injured and perish. To prevent this we always make a practice of putting a few inches of half-decomposed leaves over the border as soon as they have done flowering, which mulching answers the double purpose of enriching the soil and rendering them safe for the winter. Owing to the very early growth they make, the foliage is liable to get cut in the spring, but a mat thrown over them of a night till frosts are over forms a sufficient protection at that season, or a few evergreen branches stuck in answer the same purpose. I may just add that the present is a good time for getting the bulbs and planting, and if done something after the manner mentioned above a fine display of flowers may be expected next autumn. *J. S.*

Orchids in Flower at Lee Hall.—The following Orchids were in flower lately in Mr. Wilson's collection at Lee Hall, Gateacre, near Liverpool:—

Cattleya Harrisonæ
Cypripedium insigne
,, Roezlii
,, niveum
Colax jugosus
Dendrobium chrysanthum
Epidendrum elongatum
Masdevallia caudata
,, ignea
,, amabilis
,, maculata
Miltonia spectabilis
,, Murrelliana
,, Clowesii major
Odontoglossum Alexandræ
,, gloriosum
,, crocidipterum
,, Blunii
,, Pescatorei
,, Lindleyana
,, grande
,, maculatum
,, cirrhosum
,, bictonense
Odontoglossum Rossii
,, cordatum
Oncidium bicallosum
,, crispum
,, species, sweet-scented yellow
,, cucullatum major
,, tigrinum, several plants
,, varicosum Rogersii
,, Cavendishianum
,, ornithorrhynchum major
,, cheirosporum
,, sarcodes
Pleione Wallichii
Phalænopsis grandiflora
Lælia Perrinii major
,, autumnalis
Maxillaria venusta
Houletia species
Stanhopea insignis
Zygopetalum Mackayi crimtum

The plants in this collection are in superb condition, and reflect great credit on the practical abilities of Mr. Glover, the gardener. *O.*

International Kidney Potato.—I have been much interested in reading about the Potatos exhibited at the Crystal Palace, and have been cogitating in my own mind what would be the best sorts to purchase, as a trial for market purposes. On the farm at Loxford Hall many acres are grown for market, and I have tried all likely to be useful, but have not succeeded in getting any that will give a larger and more satisfactory crop than Dalmahoy, Walker's Regent, Victoria, and the Scotch Rock. Champion did fairly well last year, this season it is a comparative failure. About a quarter of an acre of Schoolmaster was grown for trial, and has given more satisfaction than any other new sort. We must grow 3 or 4 acres of a sort for two or three seasons before it is possible to get at its value for market purposes. I have been advised by the principal growers to try International Kidney. Acting on this advice I asked a large grower to quote the price, but to my surprise I was told it would not do for us, as it was so inferior as regards flavour. Mr. Pink confirms this in his remarks at p. 505. I have heard this Potato praised excessively. "A. D.," in his notes published October 5, placed it in the highest position, but said not a word about its inferior flavour. Surely he must have known of this, and notes such as he publishes, to be of any value, ought to contain the whole truth. I rather agree with Mr. Bennett about the flavour of the old sorts of Potatos. The new sorts are not to be compared to them in that respect. I am not sure whether we could grow the old Fortyfold now as it was grown a quarter of a century ago. If we could I fancy it would be preferred to International Kidney on the dinner-table. What I want to know is this: Does any one know of a Potato for field culture (mind, I do not mean for the rich soil of a market garden), that will beat those I have named at the head of this paper? They were cultivated in our boyhood, and I find they are still universally grown in Essex. Mr. Turner, writing at the end of last month, says, "International Kidney just going black, same as last year." *J. Douglas.*

How to Candy Angelica.—"H. A. B." may like the following recipe for the preparation of Angelica stalks:—"Take away the outer rind, cut into pieces 4 inches long, and whiten them in boiling water. Lay them on a sieve to drain, then put them in a syrup of purified sugar, boil till aqueous vapour ceases to ascend, and leave them to dry in a stove chamber on a wooden frame." This is the way in which French confectioners make the sweetmeat, and it is said to contain a considerable portion of the virtues of the fresh plant, consequently it is considered very wholesome. The young shoots and leaf-stalks only are used for candying, and they should be cut when quite tender in the month of May. *Mrs. Alfred Watney.*

Tropæolum speciosum.—This fine old creeper is certainly rather capricious in places, but as it is so effective where it can be got to succeed, it is well worth a little perseverance and patience to get it suited with regard to soil and situation. There are some parts of Scotland where, as "J. S." says, it seems to grow without any trouble, yet in other parts of the country it seems to require as much care to make it do well as would be necessary to establish it in English gardens. The best way perhaps is to plant it in various places with different exposures, in all cases securing a moderately light, rich soil, free from any stagnant water. Two parts turfy loam, one of leaf-mould, and one of well-decayed cowdung, mixed with an equal quantity of ordinary garden soil, usually grow it well where the soil is not naturally suited to it. A bit of rabbit netting fastened to the wall makes a convenient trellis. A very effective way of growing this Tropæolum is to plant it along with another plant which will contrast well with its crimson flowers, and which by partly covering the wall with stout foliage affords a partial shade, and so in a great measure prevents the attacks of red-spider. One of the most effective bits we have of it is planted along with Clematis Jackmanni. In other positions we have it with Clematis lanuginosa nivea, white Jasmine, Roses, &c. In dry weather the plants should have an occasional soaking with water. When once well-established, though killed down to the ground in winter, it will every spring send up from its tuberous roots a lot of its trailing shoots, which should be occasionally guided and spread out, as they are apt to grow in a cluster if left alone. It is very easily propagated. When a good bit of it gets established it sends out its tuberous roots to a considerable distance from where it is planted, sometimes rambling through a gravel walk. These quill-like roots, if followed up to about 2 feet of where originally planted, can be very well spared, and a well-established plant will furnish a considerable quantity, and be none the worse but all the better if these are removed, as it will keep it better at home, where it is wanted. These roots, if cut into pieces from 2 to 3 inches in length, and potted two or three in a 3-inch pot and set in a cool house or frame, will in a couple or three months make nice plants. If put in about January or February the plants will be ready for planting in May. The same amount of care which with "J. S." has been successful in growing and establishing this grand old creeper, would, I believe, be equally successful in most English gardens. *D. M., Dunrobin Castle Gardens.*

—— In Scotland that beautiful climber, Tropæolum speciosum, luxuriates under very ordinary treatment. It is very hardy, and when the root has got established it will grow as freely as the wild Convolvulus. It will grow in any moderately free loamy soil, in good heart; and if manuring is required let some good leaf-mould be worked in. The ground should be well-drained with a good exposure, avoiding as much as possible therefore damp and stagnant soils. The only other care necessary is in the training of it, whether on wire or string; it should be handled very slightly when training it in before the tendrils get a hold; when it does catch it will run up of its own accord. *W. J. C.*

Salvia patens shedding its Buds. — I agree with you that there is no blue in autumn to equal Salvia patens. In my garden, however, it acquired so inveterate a habit of shedding its flowers and buds prematurely—beginning to do so quite early in summer—that I gave up growing it. The white variety of Lupinus polyphyllus always did the same. What is the cause and the cure for this? *C. W Dod.*

The Eucalyptus at Kew.—In the *Gardeners' Chronicle* for October 26 it is stated that "experiments are being made at Kew and elsewhere as to the relative hardiness of the species of Eucalyptus." It may save some trouble if I state my experience in this matter during my forty years' connection with Kew Gardens. From time to time thousands of Eucalypti have been raised from seed sent home by Allan Cunningham and other collectors, and as they are not plants in favour with nurserymen or amateurs a small number only of each species was potted off in seed-pots, and the remainder turned out against walls or elsewhere; also as the preserved stock increased in size several were from time to time planted out, chiefly against the walls; none, however, proved sufficiently hardy to stand more than 4° to 8° of frost. I might here mention the names of several, but it would serve no useful purpose. At the time of my resignation in 1864 there was only one plant of the hundreds I had turned out, alive in the garden; this was raised in 1844, and after the usual number had been potted the others were turned out in a border against a wall. Two plants of this lot survived; they were growing close together, and in time

one overpowered the other. In 1853 the wall which sheltered it was removed, it thus became fully exposed to all weathers. In 1864 it had grown to a stiff, stout tree nearly 20 feet in height, the trunk having a diameter near the ground of about 6 inches. In severe winters the spray branches were generally killed back, the main branches, however, remained uninjured, and when summer came again pushed out young branches. A few years after I ceased to be curator I learned that this tree had been moved and planted in another part of the garden, and that either by its removal or some other cause it was cut down to the ground, but that the stump survived and has now five or six stout branches 25 or 30 feet high. It is named Eucalyptus polyanthemos. Unfortunately I have no record or remembrance of the locality from whence the seeds of this came. What I have now stated proves that but few Eucalypti will be found sufficiently hardy to live in the open air at Kew. *J. Smith, ex-Curator, Royal Gardens, Kew, Oct.* 31.

Plumbago capensis.—We have grown this plant on an open south wall here. The plants (large ones, and in large pots) were wintered in a cool house, and at the end of May were taken to a south wall in the flower garden. The plants being well soaked with water they were then sunk in the ground, deep enough to keep the pot well below the surface of the soil, and the branches were spread over the wall: there they remained, and flowered beautifully until October, when they were taken back to their winter quarters. I have also grown this "good old thing" on a balloon-shaped trellis as an exhibition plant, and found it a "telling thing" in a collection of stove and green-house flowering plants. *J. Batters, Gr., Gillingham Hall.*

The Boscobel Oak.—Your correspondents have quite disappointed me in casting doubts about the present not being the original tree which King Charles hid in. I have on the table before me a certificate about this tree, or, rather, a seedling from this tree, and it came into my possession in this wise:—In 1848 two seedling Oaks were sent here to William, fourth Earl of Abergavenny, by the Rev. J. Dale, curate of Donnington, Salop, adjoining the extra-parochial place of Boscobel. The acorns were gathered by a gardener named William Yates, Albrighton, and in 1834 he solemnly declares before witnesses that the trees sent are the produce of acorns gathered by him from the Royal Boscobel Oak. It is forty-four years since the acorns were gathered, and it does seem strange to me that the old gardener and the clergyman, both living on the spot, should have been mistaken as to the tree, which the certificate sets forth as the original one. Our trees were planted in 1850, one in the park and one in the pleasure-ground; the former is only a miserable scrub, while the latter is now a goodly tree, with a spread of branches 40 feet in diameter. I mention this to show that size has nothing to do with the tree being original or otherwise. I was foreman in the garden here when they came, and helped to plant the trees, and that explains how I obtained the certificate of which I speak. *J. Rust, Eridge Castle, Tunbridge Wells.*

The Cauliflower and Carrot Failure.—Like your correspondent, Mr. Coleman, I am constrained to offer a few remarks on this subject. From the evidence adduced we are led to the conclusion that the general cause of failure this year has been due to climatic changes, but my experience during the past season gives rise to other sources from which may be attributed the cause of these failures. Having been in part successful under one *modus operandi*, and unsuccessful in another, I am prepared to endorse the opinion that the Cauliflower is not deteriorating, neither is there any deficiency on the part of those entrusted with the selection of their stocks. I cannot too strongly urge the importance of early sowing in pans or boxes, and pricking off as soon as large enough to handle. When they get sufficiently large, pot singly into large 60's, and finally plant out into deeply-dug ground well enriched with good rotten manure, after which an occasional watering with liquid manure will greatly benefit them. Under such treatment I have been cutting splendid heads superior to the one sent [which was very fine] since the first week in September; whereas from seed sown in the ordinary way in the open ground, and planted out from the seed-bed into ground equally well prepared and treated in every respect the same, I have not been able to cut a decent head. Generally speaking, as far as the Carrot culture is concerned in this neighbourhood, all attempts have hitherto proved anything but satisfactory—so much so, that I had almost given up in despair, but with one more strenuous effort I have this year succeeded in securing a fair crop, although not to my entire satisfaction, yet I feel convinced that my proceedings will lead to greater success in future. Having selected a piece of ground last winter, I manured it heavily with old hotbed manure, incorporating with it thoroughly decayed vegetable refuse, soot and coal-ashes; it was then trenched to the depth of 2 feet 6 inches, when I gave it a good dressing of gas-lime on the surface, which remained until the end of February, after which I gave it another dressing of old Mushroom-bed manure with some burnt vegetable refuse; the whole was then forked in to await the time of sowing, which was done the first week in April; and although the main crop is not yet lifted, still to all appearance we shall be rewarded with an average crop for any extra amount of labour or expense entailed. *E. Morgan, The Butts, Harrow-on-the-Hill.*

The Gros Colman Grape.—In November, 1849, my father received some Grape Vines from M. Vibert, of Angers, a veteran Grape grower, and a very persevering raiser of seedling Grapes intended, of course, for the open air. The Gros Colman, or Colmar, as your correspondents suggest, being one of the sorts, it is not at all unlikely that the clerk, in copying the invoice, mistook the French *r* for an *n*—a mistake very likely to be made. The Gros Colman was a present, and M. Vibert perhaps did not think much of its quality as an outdoor Grape, and sent it to my father in the hope that it might adapt itself better to the climate of England than France. It was planted under a glass shed, with sides consisting of Beech hedges. I perfectly remember the enormous crops of unripened fruit borne by the plant sent by M. Vibert, and I also remember its condemnation as an utterly useless fruit by my father, coupled with a caustic remark about "gift horses," &c. The value of the sort as a late, well-keeping, and well-flavoured sort was, however, some years after pointed out to my father by a skilful Grape grower, Mr. Devenish, of Weymouth, who affirmed that it was a much better late Grape than the Gros Guillaume or Barbarossa, then notorious for its large size and late-keeping property. Colman, as a correspondent points out, is hardly a French name, and it is very likely that the proper name is Colmar. M. Vibert has long since left this earth. I remember him an enthusiastic Rose and Grape grower at eighty years old. His successor was M. Moreau-Robert, who can probably determine the question. *T. Francis Rivers, Sawbridgworth.*

Slugs and Lapagerias.—All who grow this lovely greenhouse climber well know how destructive slugs are to the young growths by eating them off at the base of the plant. I have often been puzzled to find any other cure than perpetually looking over the plants at nights to find the slug and killing him right out; but I had the good fortune some months ago, when looking through the houses of an amateur, who is a keen horticulturist, of seeing his Lapagerias, both the white and red, which were growing remarkably strong, and to prevent the slugs from getting at the young growths, he had round the inside of each pot a piece of sheet zinc, which was about 4 or 5 inches above the rim of the pot. He told me it was an excellent plan, and of course I at once adopted it with my plants, and ever since we have scarcely been troubled with slugs; we sometimes get a stray one in the vicinity of the plants, but seldom is one found over the zinc collar. *Robert Greenfield, Priory Gardens, Warwick.* [An old device. EDS.]

Paraffin as an Insecticide.—I have used paraffin oil mixed with water with great success on stove and greenhouse plants for killing bug and white scale, and I must say that wherever it comes in contact with the bug and scale it is certain death, and (if used carefully) without doing the slightest injury to the plants. When I say carefully, I mean used according to the directions previously given in your pages. On the authority of Mr. Knight we have used it regularly since Mr. Knight's remarks appeared, and I am sure we are all indebted to him for making known such an effectual and inexpensive insecticide. *Robert Greenfield, Priory Gardens, Warwick.*

The First Taste of Winter.—Up to Wednesday morning, October 30, we had Sweet Peas, Heliotrope, Dahlias, Pelargoniums in plenty, also the common yellow Laburnum in flower on the wall, but on the above morning we registered 7° of frost (at 4 feet from the ground), and everything being very wet we had to say "good-bye" to the above-mentioned flowers, and many others. Snow fell also on the 30th, about 8.40 A.M., sufficient to throw a "mantle" over the land, but it soon disappeared; on the 31st we had 6°, and on November 1st 3° of frost; and much rain has fallen since then. *J. Batters, Gr., Gillingham Hall, East Norfolk.*

—— We had a very heavy fall of snow here on Friday morning, November 1, much like the early fall on the east coast last year. Some hundreds of tons of timber in large branches were broken off; Elms, Ash, and other deciduous trees, and, of course, evergreens, suffered very much; some of the largest (3 to 6 feet high) of my Tea Roses suffered very much, being almost broken up by the roots from the weight of snow; Broccoli and Cauliflowers were quite laid, and must remain so. Some of the Elm branches must be near 1 ton weight each. It rained in the afternoon, and till 12.30 (not heavily) on Friday morning, and then snowed till about 4 P.M., then rained again near the coast. Most likely it did not rain so much farther inland, but snowed instead, for there was much remaining on Monday only some 8 or 10 miles distant. It was mostly gone here by Friday night, for the day was bright and sunny. What remained here in the morning was only about 1½ to 2 inches deep. *George Lee, Clevedon, Somerset.*

—— The glory of our garden has been laid low for a season by the sharp frosts of last week. On Friday morning the thermometer indicated 7° of frost. *D. M., Glasnevin.*

Rosa rugosa.—Any one in want of a neat low hedge plant for a flower garden would find this a perfect subject. Its leaves somewhat resemble those of the old Melianthus major, but instead of being glaucous green in colour, they are of a beautiful rich glossy green. None of our garden Roses have a leaf resembling this. The fruit, as you state, is large and fine, but we have a species with oblong-shaped fruits which in every way is much larger in size. We had a fine show of fruit one season until the birds found out their qualities, when they quickly disappeared. This season they took the fruit as it ripened. I find that these Roses do not succeed well in the shade or under the drip of trees. They cannot be considered as florists' flowers, but it is surprising what favourites they are with our nobility. As regards crossing them I think they will prove the foundation of a new race, but we must begin with the Austrian Briers, yellow and bronze, the Scotch Dog Rose, and perhaps the old Macartney. I may add that we had all the sorts Dr. Siebold sent over. *J. F., Cliveden.*

Raising Tropæolum tricolorum from Seed.—When the seeds are ripe I gather them and take the hard shell off them, that is to say, I crack the shell without damaging the nut, or even the brown skin that covers the cracked nut. By doing this your correspondent will get as many plants as he desires from the peeled seeds. Of course he will sow immediately, and must water carefully, so as not to rot the seeds. *P. Fry, Addington.*

Fruit Trees against Walls.—There can be no question that the close pruning and training to which many trees are subjected when growing against walls is often productive of anything but a fruitful habit, for, instead of forming flower-buds, they make a lot of breastwood, that either has to be pinched back several times during the summer or cut away in the autumn, thus entailing a good deal of time and attention in looking after them. As regards Apricots, Peaches, and Nectarines, this is absolutely necessary to ensure crops, as they require the full shelter such a situation affords; but for Pears and Cherries and some of the hardier kinds of Plums it is not so much needed, and it is astonishing how productive they frequently become if left to grow pretty much as they will. I have before me a striking instance of this, as some pyramidal Pears that had to be moved from a garden, where they were getting much too thick, were planted on the west side of a low wall between small buttresses built for its support, and these are now pictures of health and bear in the freest manner possible. Much of this increased fertility, in comparison with those left, has been brought about by having more room to develope themselves without being robbed of any of the young shoots, most of which are now bristling with spurs up their entire length, instead of being covered with wood-buds, as many are when subjected to severe pruning. It is a well known fact that when the fruit of Pears on pyramids or standards gets heavy, and strong autumn winds set in, that many are dashed to the ground if grown in exposed positions; but under walls as these are there is very little loss in that way. This is a great point in their favour, and as there are many bare buildings, dead, unsightly boundary fences or places of that kind affording shelter that might be profitably utilised and made ornamental by planting any of above-named kinds of fruits, I am desirous of calling attention to the undertaking now that the season is drawing near for carrying out such work. I know that many are debarred from growing the number of trees they would like, owing to the supposed labour they would have to find for nailing and training, but under this system of culture most of that ungenial winter employment is done away with, as at most all that is requisite is to secure the main branches by means of a few staples driven into the joints. A tie when made with bast twine will last for years, and if the breastwood is allowed to take pretty much its own course the trees become quickly established and soon get into a vigorous bearing state. It must be obvious to any one at all acquainted with fruit growing that

when such a slight restriction is placed on the extension of the branches and the consequently enormously increased leaf surface such trees have over others which are annually pinched and pruned hard in, that their capacity for carrying fine crops is greatly enhanced, and were it not for the more neat and orderly appearance training gives, no doubt this plan of growing them would be more generally adopted. For Pears on low walls the Quince stock is the best, but much depends on the soil, as where this is light and dry the Quince does not penetrate deep enough, and any check from an insufficient supply of moisture while the fruit is swelling causes it to crack open after a heavy fall of rain comes. The Pear, on the other hand, drives its roots low down, and therefore does not feel any changes that may take place in the weather so much, but in strong wet land it forces too strong a growth, and is on that account not so desirable. Besides Apples, Pears, Plums, and Cherries that do remarkably well grown in the above-named manner, Figs answer admirably in the same way, for as a general rule the less they are pruned the better, so far at least as the tops are concerned. In planting these it is always advisable to limit their feeding ground by concreting the bottom about 2 feet or so below the surface, after which it is an easy matter at any time to cut their side-roots by opening a trench around, or to build a 4½ inch wall, and so confine them in that way. *T. S.*



THE influence of moisture upon forest trees is so great that, to trace it, and show its intimate connection as a sequel to my last article, may, it is presumed, be of some interest to many readers. A circumstance of some interest came under my observation in the following manner.

In 1862 I had to deal with a quantity of natural Scots Fir trees in Strathspey blown down by the wind. The trees were cut off near the root with the saw, by which means the zones or layers of wood were distinctly seen, so as to be examined minutely with the view of ascertaining the various ages of the trees. I was in the practice of counting the zones or rings, when by mere chance I found that forty-five years before that time the growth of 1817 was only about $\frac{1}{10}$ inch thick, while the growth of the year before and after it was from $\frac{1}{10}$ to $\frac{1}{4}$ inch thick. This unusually small growth, situated between two large ones, and being found not upon a few trees only, but upon all within an area of nearly a mile, suggested an investigation as to the cause of it, but all efforts to find it out proved fruitless. In this case we can only give as conjecture that, as the small growth was so universal, the cause must have been an atmospherical one—probably frost, rain, or cold.

Having closely observed the results of the two seasons, 1868 and 1872, in producing fruit in the Scots Fir, we find that the former produced it much more abundantly than the latter, bearing in mind, as we do, that the perfect cone of the Scots Fir is the product of two years—that is, it blooms in May, and remains on the tree, enlarging to the size of a Filbert the first year; the second it undergoes no further change beyond simply enlarging and maturing its seed, which is ripe in November. If May is a cold, frosty month, the fruit-blossom is blasted and rendered useless. If the autumn months are wet and cold the seed in the cone does not mature, and this was the chief source of complaint in 1872. The former part of the season 1868 was extremely dry, so much so that many trees and shrubs upon a southern exposure, upon a dry gravelly soil, shed their leaves by midsummer. Towards the end of August copious showers fell, and as the season advanced the ground became well watered, and the buds of trees and shrubs swelled beyond their usual size and proportions.

The spring of 1869 displayed an unprecedented profusion of blossom, and in due time a superabundant crop of almost all kinds of fruit. The branches of Beech, Oak, Chestnut, Hawthorn, &c., literally broke off, unable to sustain their weight.

Up to the middle or end of August, 1872, nothing adverse was apprehended as to the growth of the Larch; indeed it looked very well, and indicated a good season's growth. As it is in August and October, however, that it makes its principal top-growth, and as this period proved very unfavourable for its growth, the results in that respect were very unsatisfactory upon the average of soils and situations.

Probably no better lesson of instruction upon the culture and growth of Larch could be given than the results of 1872. It indicated in a very clear manner the conditions as to wetness or dryness of soil under which it thrives or degenerates. Upon clay soils imperfectly drained the growth was of the lowest possible order, and to many trees another similar wet season would have proved quite fatal. Upon different qualities of loam the difference of growth was very distinct. The darkest and richest soils and stiff wet clays produced the worst growths, and the light-coloured and sandy or gravelly soils, where the subsoil was open, perhaps the best. A very remarkable example of this was to be seen in a plantation sixteen years old. A large area of the plantation is literally covered with Whins, so close that neither Heath nor herbage of any kind can grow amongst them. To encourage the growth of the trees the Whins had been cut several times from the period of planting. The ground being poor and naturally barren the trees grew slowly upon it, and the Whins, already established and deeply rooted, soon gained supremacy over them. Every returning season the trees renewed their feeble effort of growth, and just as regularly, but more rapidly, the Whins grew and overtopped them. The average annual growth of the trees was about 6 inches, counting ten years back, and the growth of 1868 about 3 inches. On going carefully over the plantation and measuring the top shoots, I found that the growths of 1872 against the three preceding years' average were as 12 to 4 inches.

The growth of the Larch, like that of other trees, is erroneously estimated by the length of the top shoots, as some seasons are most favourable to top-growth, and others to stem or lateral growth. On dissecting and examining the structure of trees this is clearly exhibited. For example, the annual layer or zone of 1868 was fully as thick in many cases as usual, while the top growth of the same tree was not quite one-third its usual length. The growth, too, of one season greatly influences that of the next. One season, as it were, lays by in store what is next year to be used in growth. The growth of 1869 was a clear example of this in contrast with 1873, the former being far above an average, while the latter is below it. A comparatively dry season, therefore, apparently husbands strength in the tree, while a wet season evidently exhausts it. Next to the loss of growth (as such) was that sustained by the terminal shoots not maturing and ripening. This, however, need not surprise when we bear in mind the long continuation of dull, wet weather, and all but entire absence of sunshine during the autumn months. Serious fears were entertained for the safety of the top shoots, and such fears were unhappily too well grounded, for in all low-lying situations, and in some high northern exposures, the injury to the top shoots was a very serious matter, necessitating the operation of pruning to give a single leader to the tree. The younger the trees, generally speaking, the more liable were they to damage in the top, but few trees over 20 feet high suffered to any extent.

The least evil and the last we have to record is that of the fruit or seed. So far as affects the growth of the tree itself the less seed the better, but as it constitutes a very important article of rural produce, and is the basis of the nursery operations of tree culture, its loss as a crop is too great ot be omitted. Many nurserymen propagate their Larch seedlings exclusively from home-grown seed, and the scarcity caused by the failure in 1872 caused it to rise in price from 85*s.* to 150*s.* per cwt. In addition to the scarcity, the seed was also of very inferior quality, being small and unsound; and instead of producing 1,500,000 plants per hundredweight, it yielded only about 800,000 plants of an inferior class. Interesting and inviting though the subject be, we cannot meanwhile follow it further. *C. Y. Michie, Cullen House, Cullen, Nov.* 4.

Natural History.

A CARNIVOROUS BLACKBIRD.—It may interest some of your readers to recite the following incident which appeared in the *Live Stock Journal*, where the writer says:—"I was riding along a lane in August last when I observed a cock blackbird with something very large in his bill. He flew along with it for a few yards several times in front of me, and at last dropped it. I found it was a mouse, about three parts grown and perfectly fresh killed." He adds, "I never heard of a similar case. Can any of your readers furnish us with further proof as to the carnivorous propensities of the blackbird?" *E. Morgan, The Butts, Harrow-on-the-Hill.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 6, 1878

Month and Day.	Barometer: Mean Reading Reduced to Sea-level.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 18 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
Oct. 31	29.71	−0.04	44.5	31.5	13.0	37.8	−8.6	35.9	93	WNW: W.	0.05
Nov. 1	29.79	+0.01	48.2	38.0	10.2	42.3	−3.9	38.6	87	NNE: N.	0.01
2	29.99	+0.23	45.5	32.9	12.6	39.5	−6.5	34.2	82	N: N.E.	0.00
3	29.66	+0.19	44.2	33.0	11.2	38.2	−7.6	34.2	86	NNW	0.00
4	29.56	−0.22	42.6	31.2	11.4	36.8	−8.8	32.5	85	WNW	0.00
5	29.60	−0.19	44.9	35.1	9.8	39.8	−5.6	34.5	82	NNE: N	0.00
6	29.39	−0.41	44.8	33.8	11.0	39.5	−5.6	30.0	69	NNW	0.00
Mean	29.71	−0.06	44.9	33.6	11.3	39.1	−6.7	34.3	83	N.	sum 0.06

Oct. 31.—Overcast, dull day. Occasional thin rain after 4 P.M. Cold. Fog in morning.
Nov. 1.—Overcast, and a little thin rain till 9.30 A.M. Fine after. Cloudless at night.
— 2.—A fine bright day. Cold. Lightning seen in evening. Cloudless at night.
— 3.—Fine, but dull and cloudy. Cold. Fog in morning. Partially clear at night.
— 4.—Overcast, dull and miserable till evening, then fine. Raw cold. Clear at night.
— 5.—Fine and bright till 1 P.M.; overcast and dull after. Cold. Strong wind.
— 6.—Fine and bright till 2 P.M., generally overcast after. Slight rain in evening. Cold. Windy.

LONDON: *Barometer.*—During the week ending Saturday, November 2, in the vicinity of London the reading of the barometer at the level of the sea increased from 29.32 inches at the beginning of the week to 29.75 inches by the morning of the 28th, decreased to 29.67 inches by the evening of the same day, increased to 29.81 inches by the morning of the 29th, decreased to 29.68 inches by the afternoon of October 30, and increased to 30.24 inches by the end of the week. The mean reading for the week at sea level was 29.83 inches, being 0.44 inch above that of the preceding week, and 0.09 inch below the average. The mean daily readings of the barometer were below their respective averages from October 27 to 31, and above on November 1 and 2.

Temperature.—The highest temperatures of the air observed by day varied from 49½° on October 27 to 43° on the 30th; the mean value for the week was 46½°. The lowest temperatures of the air observed by night varied from 31° on October 30 to 39° on the 27th; the mean for the week was 35½°. The mean daily range of temperature in the week was 11°, the greatest range in the day being 13° on October 31, and the least, 8°, on the 29th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—Oct. 27th, 43°, — 3°.9; 28th, 42°.4, — 4°.3; 29th, 41°.7, — 4°.9; 30th, 36°.7, — 9°.8; 31st, 37°.8, — 8°.6; Nov. 1, 42°.3, — 3°.9; 2d, 39°.5, — 6°.5. The mean temperature of the air for the week was 40°.5, being 6° below the average of sixty years' observations, and 8½° lower than the value for the same week in 1877.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 97° on October 28, 88° on the 27th, and 87° on November 1; on October 29 the reading did not rise above 54°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 28° on October 30 and 28½° on November 2. The mean of the seven lowest readings was 31°.

Wind.—The direction of the wind was N., and its strength gentle.

The weather during the week was cold and dull, and the sky cloudy.

Snow fell about 7 A.M. on October 30.

Lightning was seen on November 2, and *fog* prevailed on October 27.

Rain fell on four days during the week; the amount collected was 0.24 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, November 2, the highest temperatures of the air observed by day were 56½° at Eccles, 56° at Truro, 54° at Plymouth, and 53° at Bristol, Cambridge, and Sheffield; the highest temperature of the air at Bradford was 48½°, and at both Blackheath and Wolverhampton was 49½°; the mean value from all places was 51½°. The lowest

temperatures of the air observed by night were 26° at Eccles, 27° at Nottingham, 29° at Hull, and 29½° at Wolverhampton; the lowest temperature of the air at Liverpool was 35½°, and at Truro was 34°; the mean value from all places was 31°. The range of temperature in the week was the greatest at Eccles, 30°, and the least at Liverpool and Bradford, both 15¼°; the mean range from all stations was 20¼°.

The mean of the seven high day temperatures was the highest at Truro, 52°, Plymouth 51½°, and Eccles 49½°; and the lowest at Wolverhampton, 45½°, and Bradford, 45¼°; the general mean from all stations was 47¾°. The mean of the seven low night temperatures was the lowest at Eccles, 19°, Nottingham 31¼°, and Leicester 32¾°, and the highest at Truro, 42°, and Liverpool 39½°; the mean from all places was 35½°. The mean daily range of temperature in the week was the least at Liverpool, 7½°, and the greatest at Eccles, 20½; the mean daily range from all stations was 12½°.

The mean temperature of the air for the week from all stations was 40¾°, being 8¾° lower than the value for the corresponding week in 1877. The highest were 46½° at Truro, and 43½° at Plymouth, and the lowest were 38° at Nottingham, and 38⅛° at both Wolverhampton and Eccles.

Rain.—Rain fell on every day in the week at Plymouth, Norwich, Nottingham, Hull, and Sunderland, and on six days at most other places, but at Brighton it fell on one day only. The heaviest fall was 2.16 inches at Bristol, and the least 0.04 inch at Brighton; the average fall over the country was 0.66 inch.

The weather during the week was very cold, dull, and the sky was cloudy.

Snow fell on October 29 at Wolverhampton and Hull, and on the 30th at London, Bristol, Norwich, Leicester, and Cambridge, and on November 2 at Wolverhampton.

Fog was prevalent at many places during the week.

SCOTLAND: *Temperature.*—During the week ending Saturday, November 2, the highest temperatures of the air varied from 42½° at Glasgow to 39° at Edinburgh; the mean from all places was 51°. The lowest temperatures of the air varied from 30° at Edinburgh to 34¾° at Leith; the mean value from all stations was 32¼°. The mean range of temperature in the week was 18¾°.

The mean temperature of the air for the week from all places was 41°, being 7¾° lower than the value for the corresponding week in 1877.

Rain.—The heaviest fall of rain in the week was 1.79 inch at Aberdeen, and the least, four-tenths of an inch, at both Edinburgh and Leith; at Glasgow no rain was measured. The average fall over the country was 0.70 inch.

DUBLIN. — The highest temperature of the air was 55°, the lowest 28¼°, the range 26¾°, the mean 41°, and the fall of rain 0.05 inch.

JAMES GLAISHER.

Reports of Societies.

Scottish Horticultural Association: *Nov.* 5.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, when over 100 members were present; and it being the annual meeting day of the Scottish Arboricultural Society, a number of foresters attended. The President occupied the chair. Mr. C. S. France read a paper on "Ornamental Planting." He said that the planting of trees was a science, and had been so from an early date, it having engaged the attention of the Greek philosophers. For embellishing rural scenery with the best objects of Nature they were indebted to Kent, who in the beginning of last century was among the first to lay down principles for the guidance of the planter for landscape effect. He also touched upon the part which Bacon performed in realising the true beauties of the garden, spoke of the proper distribution of trees, and referred to the particular schools of landscape planting, and their various peculiarities. The principle underlying the styles of the different nations was found in the outward features of each country. The primary rule to follow by all planters for effect was to imitate Mother Nature. To have unbroken plantations and at other points vistas, so as to make the ground appear as large as possible, was an important principle to be borne in mind by all who plant to improve the beauties of the landscape.

Mr. Alex. Mackenzie read a paper on "Early Flowering Pelargoniums," in which he described the mode of propagation from cuttings and from roots which he adopted in the Warriston Nursery, and explained the treatment followed by him in every particular from the cutting pot to the flowering specimen. The composition and preparation of the soil used was minutely described. The time he put in cuttings was principally from March to November; but this operation, for the most part, might be performed all the year round. The temperature, airing, thinning, and staking, were carefully explained. The result of Mr. Mackenzie's culture of this valuable plant was that he had a house of them in excellent health, bearing a profusion of bloom for twelve or thirteen months—a result which he could not produce with any other plant. The principal sorts in his collection were the following:—Digby Grand, Madame Lemoine, Triomphe de St. Maud, Bridal Bouquet, Annie, Fire King, Mrs. Bradshaw, Magnet, or Marchioness of Lothian, Grandis, Floribunda, and Red Gauntlet.

Mr. James Gordon also read a paper on the "Osmunda regalis in its native habitat at Camstraddan," where acres of this much prized Fern were to be found. He stated the different conditions under which it luxuriated on the banks of Loch Lomond, the fronds attaining the length of 6 feet.

Messrs. Dicksons & Co. exhibited flowers of Schizostylis coccinea fully expanded in the open air, and blooms of Veronica speciosa and Violas Golden Gem and lilacina. Messrs. Todd & Co. showed flowers of the crimson East Lothian Stock; Mr. Henry Rintoul sent blooms of Vallota purpurea, in great beauty at this season; and Mr. Chisholm sent some Gooseberry roots infested with a parasite. Mr. George Donaldson sent a new seedling late kidney Potato, which was highly commended by the new Vegetable Committee.

Answers to Correspondents.

BEGONIA: *G. F.* Most of the species which are not tuberous-rooted, are in their native country undershrubs; so that there is nothing irregular in defining them as "shrubby."

BOOKS: *T. H.* Ewart's *Land Improver's Pocket Book*, published by Lockwood & Co., 7, Stationers' Hall Court, E.C.—*J. R. P. Floral Decorations for the Dwelling House*, by Annie Hassard, published by Macmillan & Co., Bedford Street, Covent Garden.

CINERARIAS: *J. R. P.* Your Cineraria leaves are attacked by a fungus, Puccinia glomerata. We know of no cure for it, and your best plan will be to pick the affected leaves off and burn them.

DOUBLE PELARGONIUMS: *J. Scott.* The flowers and leaves you send us of No. 1, marked Le Vergier, and No. 2, marked Ethel Beal, appear to us to be identical.

GRAPES: *J. H.* The fusion of the terminal berries of the bunch is by no means uncommon.

INSECTS: *G. P. R.* Your Cyclamens, Primulas, &c., have been gnawed off by the white grubs of the weevil, Otiorhynchus sulcatus. The adjacent plants should be carefully examined at the roots and repotted in earth which would be benefited by being first charred. The weevils should be looked for after dusk. A sheet should be laid on the ground beneath the plants, and the insects fall on the approach of the light. *L. O. W.*

LIME: *Perplexed.* Lime does not detract from the fertilising qualities of manure if both are dug into the ground at the same time.

NAMES OF FRUITS: *E. Simpson.* Jalousie de Fontenay. —*F. B.* 1, Dumelow's Seedling; 2, not known; 3, Beauty of Kent; 4, Winter Hawthornden.—*F.* 1, Golden Noble; 2, Kentish Fillbasket; 3, Winter Majettin.—*Tydia. Apples:* 4, Rymer; 3, Sturmer Pippin. *Pears.* 10, 11, Glou Morçeau; 6, Old Colmar; 8, Joséphine de Malines; 7, Nouveau Poiteau; 9, Bergamotte d'Esperen; others not recognised.

NAMES OF PLANTS: *H. M. E.* We do not undertake to identify florists' flowers. The Chrysanthemum may be Golden Cedo Nulli, but we cannot say for certain. —*H. A. B.* Perhaps Rosa cinnamomea. —*H. D.* Asplenium Fabianum. The flower is an Amaryllis of the Hippeastrum group, but probably a garden variety, which we cannot attempt to name.

PAMPAS GRASS: *Car.* There is nothing unusual in the colour of your specimens.

POTATOS: *A Constant Reader.* We do not undertake to give the names of proper persons to deal with.

ROSA RUGOSA: *C. W. D.* We have not rooted Rosa rugosa from cuttings out-of-doors, but find cuttings root freely, or it grafts easily under glass on the Manetti or Brier. We see no reason why it should not also succeed budded freely on Dog Rose or Manetti out-of-doors. We may add, it seems to sucker when grown on its own roots; so that it would no doubt succeed layered.

TO KEEP WALNUTS: *Tydia.* Pack them in layers in dry sand in a box or barrel, and keep them in a cool place.

VARIEGATED PRIMULAS: *H. M. H.* That a plant or two in a batch of seedlings should come variegated is not a very uncommon occurrence. It is doubtful if the seeds of the variegated plant would produce others similarly marked, and is not worth the trouble of propagating by any other means.

VINES: *J. T. S.* You cannot learn how to grow Vines successfully by means of the answers to a string of questions. You should well study such a useful work as *The Grape Vine*, by Mr. Thomson (published by Blackwood), and then, if any difficulties present themselves, we shall be glad to assist you. To your second letter we can only reply that the details which appear to be so puzzling to you are clear enough to any one who can grow Grapes. If you want to succeed, you must master the rudiments before flying at higher game.

VINES IN GREENHOUSE: *A. W. B. P.* You do not say anything about the internal arrangement of your greenhouse. What is the position of the stages for plants, &c.? Planting Vines against the back wall of an ordinary greenhouse is about the worst position for them, and bringing them through the front wall is the best. If you cannot train them through the wall at its base, because the stem of the Vines would come in contact with the pipes, could you not, as the next best plan, train the stem inside the house, immediately under the wall plate? That would bring the stem over the pipes. We had to plant a greenhouse with Vines once, and were in the same position as you are, and got over it in that way. The Vines grew splendidly. You can cut a hole in the top of the wall as large as half a brick. If the arrangement of the pipes does not admit of this, it would be better to plant a Vine near the door at the south end of the house. The Vine, if well treated, would fill your little house in three years.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

ERRATUM: CIMICIFUGA RACEMOSA.—We learn that, from a misplaced tally, we were led into error. The plant figured as *C. racemosa* at p. 557, is *C. fœtida*.

CATALOGUES RECEIVED:—W. Foster (Stroud), Catalogue of Fruit Trees.—Messrs. E. G. Henderson & Son (Pine-apple Nursery, Maida Vale, London, W.), Catalogue of Roses, Fruit Trees, Shrubs, Hardy Climbers, &c.—Messrs. Little & Ballantyne (Carlisle), Priced List of Forest Trees, Ornamental Trees and Shrubs, &c.—Messrs. C. Huber & Co. (Hyères, France), Catalogue of New Plants, and general Price-List.—Louis Van Houtte (The Royal Nursery, Ghent, Belgium), Catalogue of Herbaceous and Alpine Plants, Roses, Conifers, Fruit Trees, &c.—Messrs. Kelway & Son (the "Royal Nurseries," Langport, Somerset), Special Wholesale Price-List of Gladioli.—Messrs. J. M. Thorburn & Co. (15, John Street, New York, U.S.A.), Wholesale List of American Seeds for the European Trade only.

COMMUNICATIONS RECEIVED.—Ed. Goeze,—E. Fenzi (with many thanks).—G. N.—G. S. B.—G. J.—Chevalier.—A. R. —J. B. S.—W. D.—J. R.—M. & Son.—R. D.—P. G.—K. K. —E. B.—C. S.—R. J. L.

Markets.

COVENT GARDEN, November 7.

Our market remains much the same, large quantities of American Apples continuing to arrive, which are only cleared at considerably reduced rates. Pears continue short, supplies from the Continent being very meagre. Kent Cobs are dull. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	3 0
Cobs and Filberts, lb.	0 9	1 0	Pears, per doz.	2 0	6 0
Grapes, per lb.	1 0	6 0	Pine-apples, per lb.	4 0	8 0
Lemons, per 100	6 0	12 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English			Herbs, per bunch	0 2	0 4
Globe, doz.	2 0	4 0	Horse Radish, p. bun.	4 0	..
Jerusalem, bush.	4 0	..	Lettuces, Cos, Eng.,		
Asparagus, Fr. sprue,			per score	1 6	2 6
per bundle	1 6	..	Mint, green bunch	0 4	0 6
Beans, French, p. 100	2 0	..	Onions, young, bun.	0 4	0 6
— runners, p. bush.	4 0	..	Parsley, per bunch	0 4	..
Beet, per doz.	1 0	2 0	Radishes, per bunch	0 1	0 3
Brus. sprouts, bush.	7 0	..	— Spanish, doz.	1 0	..
Cabbages, per doz.	1 0	2 0	— New Jersey, doz.	2 0	..
Carrots, per bunch	0 4	0 6	Shallots, per lb.	0 6	..
Cauliflowers, per doz.	2 0	3 0	Sealkale, per punnet	2 6	..
Celery, per bundle	1 6	2 0	Spinach, per bushel	2 0	..
Chilis, per 100	2 0	..	Sweet Potatos, per lb.	0 6	..
Cucumbers, each	0 4	1 6	Tomatos, per dozen	2 6	3 0
Endive, Batav. dozen	1 6	..	Turnips, p. 12 bunch	3 0	..
Garlic, per lb.	0 6	..			

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Myosotis, 12 bun.	3 0	6 0
Bouvardias, per bun.	1 0	4 0	Narcissus, paper-		
Calceolaria, 12 bun.	6 0	12 0	white, 12 sprays	2 0	6 0
Camellias, per dozen	3 0	12 0	Pelargoniums, 12 spr.	0 9	1 6
Carnations, per dozen	1 0	2 0	— zonal, 12 sprays	0 6	2 0
Cornflower, 12 bun.	2 0	6 0	Phlox, 12 bunches	6 0	12 0
Chrysanth., per doz.	1 0	6 0	Primula, double, per		
— per 12 bunches	3 0	9 0	bunch	1 0	2 0
Dahlias, 12 bunch	3 0	9 0	Pyrethrum, 12 bun.	3 0	6 0
Eucharis, per doz.	4 0	12 0	Roses (indoor), doz.	1 0	12 0
Gardenias, 12 blms.	4 0	12 0	(outdoor), 12 bun.	3 0	12 0
Gladioli, various, 12			Spiræa, 12 sprays	1 6	4 0
spikes	1 0	4 0	Stephanotis, 12 sp.	6 0	12 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Peas, 12 bun.	2 0	6 0
Hyacinths, Roman,			Sweet Sultan, 12 bun.	6 0	9 0
12 spikes	2 0	6 0	Tropæolum, 12 bun.	1 0	3 0
Jasmine, 12 bunches	6 0	12 0	Tuberoses, per dozen	1 0	3 0
Mignonette, 12 bun.	2 0	6 0			

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Begonias, per doz. ..	4 0-12 0	Ficus elastica, each	2 6-15 0
Bouvardias, do ..	9 0-24 0	Foliage Plants, various, each	2 0-10 6
Chrysanth., per doz.	6 0-30 0	Fuchsias, per dozen .	3 0-12 0
Coleus, per dozen ..	3 0- 9 0	Hyacin., Rom., doz.	12 0-24 0
Cyperus, do.	6 0-12 0	Mignonette, per doz	3 0- 9 0
Dracæna terminalis	30 0-60 0	Myrtles, per doz. ..	4 0-12 0
— viridis, per doz..	18 0-24 0	Palms in variety, each	2 6-21 0
Erica Caffra, p. doz.	6 0- 9 0	Pelargoniums, scarlets, zonal doz ..	2 6- 9 0
— gracilis, p. dozen	6 0-12 0	Primulas, per dozen	5 0- 9 0
— hyemalis, p doz.	21 0-42 0	Roses, Fairy, per doz.	9 0-12 0
Euonymus, various, per dozen	4 0-18 0	Vallota, per doz. ..18	0-24 0
Ferns, in variety, per dozen	4 0-18 0		

SEEDS.

LONDON : *Nov.* 6.—The market for farm seeds presented to-day a very dull appearance ; no disposition whatever being shown to purchase Clover or, in fact, any other description. English red Clover seed now offers more freely, and holders, in order to effect sales, have to submit to a considerable reduction on their earlier demands. The crop in this country is, without doubt, a very large one, and probably almost sufficient of itself for our home requirements. The enquiry from France and Belgium for English Clover seed still continues. The American markets are described by cable as steady ; no accumulation of stock has yet taken place at any of the Western collecting points—all arrivals thus far having been at once taken up either by the domestic or foreign demand. As regards Alsike and white Clover, there is this week no quotable variation. Trefoils are firm. Grasses of all sorts unchanged. The dealings in white Mustard seed have not lately been of importance ; new brown seed comes to market in good quality and condition, and prices favour sellers. English Rape seed meets a slow sale on rather easier terms. New Riga Hemp seed for forward delivery is offering at very moderate rates. In Canary seed the tendency is still downwards. Occasional orders drop in for winter Tares ; values are now at an unusually low level. For boiling Peas there is a good sale at an advance of 1*s.* to 2*s.* per quarter. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was firm, and in the value of Wheat, both English and foreign, there was an advance of 1*s.* per quarter Good malting Barley was taken off steadily, and there was rather more inquiry for grinding descriptions. Malt remained without alteration. Oats were a better sale, and prices a trifle stronger. Maize was about 6*d.* per quarter dearer, and there was some improvement in the value of Beans. Peas were quiet and unchanged. Flour experienced an improved demand, and quotations were slightly against the consumer.—On Wednesday the supply of English Wheat was short, while the importations of foreign were on a liberal scale ; but little business was done, at Monday's rates. Good malting Barley found buyers at full prices, but the market was decidedly flat for inferior produce. Grinding Barley remained steady. Oats and Maize were very well supported, and a very firm tone prevailed for flour. Beans had an improving tendency, but there was no change in Peas.—Average prices of corn for the week ending November 2 :—Wheat, 39*s.* ; Barley, 39*s.* 9*d.* ; Oats, 22*s.* 11*d.* For the corresponding period last year : —Wheat, 53*s.* 8*d.* ; Barley, 42*s.* 4*d.* ; Oats, 24*s.* 2*d.*

CATTLE.

At Copenhagen Fields on Monday trade was so excessively dull that it was difficult to realise quotations throughout. The supply of sheep was considerable and the demand limited, consequently on the average prices were lower. Trade was steady for calves at about late rates. Quotations :—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.* ; calves, 5*s.* 4*d.* to 6*s.* 4*d.* ; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 2*d.* to 7*s.* ; pigs, 4*s.* to 5*s.*—Trade on Thursday was quiet in tone, and without feature. Beasts sold quietly at Monday's prices. Sheep were rather scarce, and sold at previous prices. Calves and pigs were unaltered.

HAY.

The Whitechapel market report for Tuesday states that there was a large supply and trade was very dull, but no change is reported in prices.—Prime Clover, 110*s.* to 112*s.* ; inferior, 80*s.* to 90*s.* ; prime meadow hay, 75*s.* to 84*s.* ; inferior, 40*s.* to 70*s.* ; and straw, 30*s.* to 38*s.* per load. — On Thursday there was a moderate supply. Hay met a better demand, but Clover was dull. Prices were unaltered.—Cumberland Market quotations : —Superior meadow hay, 88*s.* to 95*s.* ; inferior, 65*s.* to 80*s.* ; superior Clover, 110*s.* to 120*s.* ; inferior, 88*s.* to 100*s.* ; and straw, 38*s.* to 44*s.* per load.

POTATOS.

The reports from the Borough and Spitalfields markets state that the supplies on sale were rather limited, and very few sound parcels were offering. The trade was firm, and the better qualities advanced in price 10*s.* per ton. Kent Regents, 100*s.* to 120*s.* ; Essex ditto, 90*s.* to 130*s.* ; rocks, 70*s.* to 90*s.* ; Champions, 80*s.* to 90*s.* ; flukes, 130*s.* to 150*s.* ; Scotch Regents, 100*s.* to 120*s.*—During last week the importation was of rather small dimensions ; 26,046 barrels were landed from Hamburg, while the receipts from other parts of the Continent were confined to 3387 boxes and 1068 casks.

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

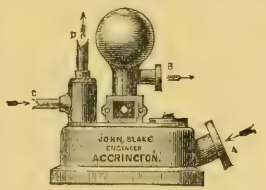
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on November 23.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wyneham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July* 16, 1878.

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug.* 22, 1878.

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq., *Emmett Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.

GERMAN LILY OF THE VALLEY, single crowns, extra strong, in splendid condition ; delivery at once. Price and samples on application to CHARLES PUTTFARKEN, Bradford, Yorkshire.

Wanted to Sell about 12 Stone of WRIGHT'S RED GROVE CELERY, true, growth 1878. Good samples. Mr. WM. PARR, Farmer, Blyton, Gainsboro', Lincolnshire.

STEPHANOTIS FLORIBUNDA. — For Sale, a few extra large plants, in excellent condition, and in No. 1 Pots, from 25 feet long. Messrs. HAWKINS AND BENNETT, Florists, Lily Gardens, Twickenham, S.W.

WEBB'S

GREAT

ROOT SHOW

WILL BE HELD AT

CURZON HALL,

BIRMINGHAM,

ON

WEDNESDAY and THURSDAY, November 20 *and* 21,

WHEN

VALUABLE PRIZES

WILL BE AWARDED FOR

VEGETABLES and POTATOS.

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PRIZES VALUE NEARLY
£500
Are offered during the year.

PARIS EXHIBITION, 1878.

THE MEDALS OF PARIS,

FOR EXCELLENCE AND PURITY

OF

AGRICULTURAL AND HORTICULTURAL SEEDS,

HAVE BEEN AWARDED TO

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2*s.* 6*d.* ; C Lebanon, 3 feet, 2*s.* 6*d.* ; Thujopsis borealis, 5 feet, 2*s.* 6*d.* ; Thuja gigantea, 4 feet, 2*s.* 6*d.* ; Cupressus Lawsoniana viridis, 4 feet, 2*s.* 6*d.* ; Swedish Juniper, 4 feet, 1*s.* 6*d.*, 6 feet, 2*s.* 6*d.* ; Golden Retinospora, 2 feet, 2*s.* 6*d.* ; Ericoides, 2 feet, 1*s.* ; Gold and Silver Hollies, 2 feet, 2*s.* ; Picea nobilis, 3 feet, 3*s.* ; Pinsapo, 3 feet, 2*s.* 6*d.* ; Nordmanniana, 3 feet, 2*s.* 6*d.*, 4 feet, 4*s.*, 5 feet, 5*s.* ; Limes, 15 feet, 2*s.* 6*d.* ; Birch, 15 feet, 1*s.* ; Chesnuts in variety, 1*s.* each ; Scarlet Oak, 15 feet, 1*s.* ; Araucarias, 4 feet, 2*os.* ; 5 feet, 3*os.* ; Rhododendrons, scarlet, rose, white, 2 feet, 2*s.* 6*d.* ; Green Hollies 1 to 1½ foot, 25*s.* per 100.

E. WALKER, Farnborough, Hants.

SEAKALE, stout, 4-yr. old, 2s. per dozen, 10s. per 100, 60s. per 1000.
RHUBARB, Johnston's St. Martin, the finest forcing sort known, 6s. per dozen, 40s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.
THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.
THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone; also at Ashford.

BROCKWORTH PARK PEAR.

The fruit of this remarkable Pear is very large and handsome, the flesh is juicy, melting, and of fine flavour, ripening about the end of September or beginning of October. The colour is yellow, richly dotted, slightly crimson next the sun. It has been awarded a First-class Certificate of Merit by the Royal Horticultural Society.

Fine Pyramids .. .. .. 2s. 0d. *each.*
Dwarf-trained (for walls) .. 3s. 6d. *each.*

We can supply one dozen choice Pyramid Pear Trees of the most delicious sorts, our selection, including Brockworth Park, for 18s.

J. C. WHEELER & SON,
KINGSHOLM NURSERY, GLOUCESTER.

HARDY FLOWERS
FOR
Exhibition, Herbaceous Border, and Spring Flower Gardens.

All choice sorts, true to name.

In 12 sorts, per doz.—s. d.		In 12 sorts, per doz.—s. d.	
Carnations and Picotees		Pentstemons	3 6
Single plants ..	6 6	Phloxes	3 6
Pairs	12 0	Pinks	4 0
Clematis	9 0	Potentillas	6 0
Delphinium	6 0	Pyrethrums	5 0
Hollyhocks, from first-class seed	4 0	Saxifrage, mixed ..	3 0
Iris, German	3 0	Sedums	3 0
Pæonies	6 0	Veronicas, large bushes, 9 to 15 in. through..	6 0
Pansies, Show	3 6	Violets, Sweet	3 6

BEDDING PANSIES.—Blue King, Clevedon Blue, Purple, and Yellow; Chieftain, Cloth of Gold, Peach Blossom, and The Tory, 2s. per dozen, 12s. per 100.

BEDDING VIOLAS.—Admiration, Amabilis, Brilliant, Golden Gem, Duke of Edinburgh, Golden Perpetual, Greivei, Multiflora, Mulberry, Purple Prince, Sovereign, Sir W. Scott, and Waverley, 1s. 6d. per dozen, 10s. per 100; Pilrig Park, 2s. per dozen, 15s. per 100—this is the best white.

100 fine Bedding Violas and Pansies, our selection, twelve varieties, 10s. 6d.

	Per doz. s. d.	Per 100 s. d.
Daisies, red, white or rose ..	1 0	5 0
Ajuga variegata..	2 6	..
,, purpurea ..	2 6	..
Alyssum saxatile	1 6	10 0
Antennaria tomentosa ..	1 6	8 0
Arabis alpina ..	1 6	8 0
,, fol. var. ..	1 6	8 0
Aubrietia purpurea ..	1 6	10 0
Canterbury Bells	1 0	5 0
Dactylis elegantissima ..	1 6	8 0
Sweet Williams ..	1 0	5 0
Gentiana acaulis	3 0	20 0
Hepatica, double red and single blue	4 0	25 0
,, single white and red ..	6 0	..
,, double blue	18 0	..
Iberis corifolia ..	1 6	10 0
,, Tenoreana..	1 6	10 0
Mentha Gibraltaricum ..	1 0	5 0
Myosotis sylvatica and dissitiflora	1 0	5 0
Primrose, double white, double lilac, double sulphur ..	4 0	25 0
Primrose, double crimson, very scarce ..	15 0	..
,, single pink	2 0	12 0
,, ,, white ..	3 6	..
,, ,, crimson	4 0	..
,, japonica, of sorts	4 0	..
Phlox verna and frondosa ..	1 6	8 0
Polyanthus, fine gold-laced seedlings ..	2 6	..
,, ordinary do.	1 0	5 0
,, Black Prince	5 0	..
,, Petstead ..	5 0	..
,, President ..	9 0	..
,, Rex Theodore	9 0	..
,, Cheshire Favourite and Exile.. each	2 0	..
Sedum acre aurea, acre elegans, glaucum, and lydium ..	1 6	6 0
Stellarea aurea ..	1 0	6 0
Veronica repens..	2 0	..
Sempervivum tectorum ..	1 0	6 0
,, californicum	2 0	12 0

CATALOGUES of Fruit Trees, Strawberry Plants, Evergreen and Deciduous Trees and Shrubs, Stove and Greenhouse Plants, Florists' Flowers, Bedding and Soft-wooded Plants, Rhododendrons and Plants for Forcing, Roses, &c., on application.

WM. CLIBRAN & SON,
OLDFIELD NURSERY, ALTRINCHAM.

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.
Descriptive and Priced Catalogues for 1878 now ready.
Address—
CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

To the Trade.
HOLLIES, Green and Variegated, 1 to 4 feet; YEWS, 9 inches to 7 feet; LIMES, 2 to 7 feet; Portugal LAURELS, 2 to 5 feet; ASH, 1 to 2 feet; Spanish CHESTNUT, seedlings. Cash prices and samples on application.
W. TRIGG, Hook Hill, Woking Station.

SEAKALE FOR SALE.—Good Forcing, 9s. per 100; extra large, 10s. 6d.; planting, 5s.; also Malyear's Early Red Rhubarb for forcing and planting, the finest yet out; and other leading sorts. Post-office Order or Cheque to accompany all orders from unknown correspondents. Price to the Trade on application to
J. COOPER, Market Gardener, Belfour Cottage, Fulham Fields, S.W.

CHRISTMAS QUINCEY, POTATO GROWER, &c., Peterborough, begs respectfully to inform his many Patrons and the genral Public that he has shipped at New York, in the *S.S. Denmark*, on October 23, TWO HUNDRED BARRELS of that valuable POTATO, the BEAUTY OF HEBRON, which can be had in barrels, direct from the London Docks, at 42s. per barrel, of about 168 lb.; smaller quantities from Peterborough, at 4½d. per lb., 14 lb. 4s. 6d. Wholesale prices on application. All accounts of this Potato are of a flattering description; the following is one among many unsolicited testimonials:—

4, Hermitage Terrace, Bath Road, Cheltenham, Oct. 28, 1878.
"Sir,—The Beauty of Hebron has given great satisfaction; from 24 lb. planted we have the extraordinary yield of 15 bushels, and scarcely a diseased one. I consider it unequalled by any other I have tried. Its dwarf habit and rapidity of growth, and superb table qualities will insure it becoming a favourite amongst many of the valuable varieties we have in cultivation. It is my intention to plant it in preference to the Early Rose, being of finer quality, earlier and more productive.
"Yours truly, J. BARRETT.
"To Christmas Quincey, Potato Grower, Peterborough."

N.B.—Wholesale Price List of the leading English and American varieties will be ready by the early part of December, and will be forwarded on receipt of trade card.

SWEET VIOLETS.
BLANDYANUM, Double.
BELLE DE CHATENAY, new.
KING OF VIOLETS, Double.
MARIE LOUISE, best Double.
NEAPOLITAN, Double.
REINE DES VIOLETS, Double.
NEAPOLITAN, Single.
WHITE CZAR.
VIOLET CZAR.
VICTORIA REGINA, best Single.
The above are large clumps, suitable for potting, forcing, or forming beds and clumps in flower gardens; 6s. per dozen, 40s. per 100
PRINCESS MARIE DE SAVOY, new, 3s. 6d. each.
PATRIE, 1s. each.
One plant each 12 vars. free by post, 7s. 6d.
Trade LIST on application. P. O. O. payable to
FREDERICK PERKINS, Regent Street, Leamington.

New Catalogue.
MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his
NEW DESCRIPTIVE CATALOGUE
may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for Covers, PLANTS for Winter Bedding,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
Milford, near Godalming, Surrey.

GEORGE COOPER, the County Seed Establishment, Hertford, begs to offer the following, of the choicest stocks, to the Trade. Special prices on application:—
BEET, Red, Cooper's Excelsior.
BROCCOLI, Hill's June.
CUCUMBER, Improved Telegraph.
PARSLEY, Curled, Cooper's Matchless.
SWEDE, Cooper's Improved Large Purple-top.
TURNIP, Improved Aberdeen Green-top Yellow.
ONION, White Spanish.
,, White Globe.
,, Bedfordshire Champion.
CELERY, Cooper's Improved White.
The above cannot be excelled for quality.

PEARS on QUINCE, that have had fruit on them the past season, 12s. per dozen, 75s. per 100.
PLUMS, fine standard, in sorts, 24s. per dozen.
APPLES, fine standard, in sorts, 12s. per dozen; fine bush do., fruiting, 12s. per dozen.
PLUMS, fine trained, dwarf, 36s. per dozen.
APRICOTS, fine trained dwarf, 36s. per dozen.
GOOSEBERRIES, Ashton, &c., fine, 8s. per 100, 70s. per 1000.
CURRANTS, Raby Castle, red, fine, 8s. per 100, 70s. per 1000.
WALNUT, fine, 6 to 8 feet, 12s. per dozen, 75s. per 100.
FILBERT, fine, 4s. per dozen, 25s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

The Cirencester Nurseries.
ROBERT F. DARBY begs to offer the following well-rooted Trees, &c., cheap, for a clearance:—
10 dozen ELMS, fine Chichester, very straight, 16 to 20 feet.
8 dozen LIMES, fine, very straight, 14 to 16 feet.
12 dozen BEECH, fine, very straight, 8 to 10 feet.
4 dozen ASH, fine, very straight, 12 to 16 feet.
500 HORNBEAM, 3 to 4 feet.
300 APPLE, strong bearing, bush, of best kinds.
400 YEWS, English, really good, 4 to 5 and 5 to 6 feet.
4 dozen CUPRESSUS LAWSONIANA, 6 to 8 feet.
Price on application.

ODONTOGLOSSUM CRISPUM,
CATTLEYA GIGAS, &c.

MR. J. C. STEVENS has received instructions from the NEW PLANT AND BULB COMPANY, Colchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 12, extra fine plants of ODONTOGLOSSUM CRISPUM, collected by Mr. William Wallace; also CATTLEYA GIGAS, &c., all in splendid health. N.B.—The Odontoglossum crispum are unusually fine, and are the result of careful selection on the part of the Collector.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

ESTABLISHED ORCHIDS,
Mostly in Flower.

MR. J. C. STEVENS has received instructions from Messrs. J. BACKHOUSE & SON, of York, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on TUESDAY, November 12, at half-past 12 o'Clock precisely, a

COLLECTION OF FLOWERING AND IMPORTED ORCHIDS,

including some grand examples of the rare BATEMANNIA BURTII, PESCATOREA ROEZLII, BOLLEA CŒLESTIS, CATTLEYA MAXIMA, ODONTOGLOSSUM NEBULOSUM, O. MADRENSE, VANDA CATHCARTII, LÆLIA SUPERBIENS, &c.; likewise fine specimens of the rare MASDEVALLIAS—BELLA, CORNICULATA, and RADIOSA; also some fine, recently imported, tufts and masses of the true EPIDENDRUM VITELLINUM MAJUS (the broad-petalled, large-flowered one), and of the beautiful ODONTOGLOSSUM ROSSII MAJUS, in the finest health. A large number of plants are in bloom or showing flower-sheaths.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

Lilies—Yellow Martagon.—Polypodium cambricum.

WHOPWOOD AND SON, NURSERYMEN, Cheltenham, have a quantity of the above to offer. Prices on application.

SUTTON'S MAGNUM BONUM POTATO (True).—A limited quantity to offer. £10 per ton, cash. R. B. MCCOMBIE, Christchurch, Hants.

Edelweiss, Gnaphalium leontopodium (Jacq.).

CHARLES SHARPE AND CO., having received a small supply of Seed of the above lovely little Alpine Plant with woolly silvery-white bracts, can offer packets post-free at 2s. 6d. each. Its cultivation presents no difficulty, and full instructions will be sent with each packet.
Seed Warehouse, Sleaford.

1000 Bulbs for 20s.

MY COLLECTION of BULBS for the Flower Garden, containing 1000 sound, well-ripened roots of HYACINTHS, TULIPS, NARCISSUS, CROCUS, and SNOWDROPS, package included, forwarded on receipt of Post-office Order for 20s.
JOHN ROBSON, Altrincham, Cheshire.

To the Trade.

JOHN PERKINS and SON have large stocks of the following, fine clean-grown well rooted stuff :—
ROSES, Standard, 75s. per 100.
„ Dwarf, 30s. per 100.
APPLES, 2-yr. untrimmed, 50s. per 100.
PEARS, 2-yr. untrimmed, 50s. per 100.
PLUMS, Standard Diamond, 20s. per 100.
APRICOTS, fine Dwarf-trained, 21s. to 30s. per dozen.
„ fine Maidens, 50s. per 100.
„ 1-yr. cut-back, 30s. per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
„ NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
PINUS CEMBRA, 4 to 5 feet, 60s. per 100.
THUJA AUREA, 1 foot, 40s. per 100 ; 1 to 1½ foot, 60s. per 100.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen.
52, Market Square, Northampton.

Special Trade Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the following Plants, Trees, &c., in fine condition, grown especially for the Trade, have much pleasure in offering them at the following low prices :—
AURICULAS, finest mixed alpine, in 60-pots, 16s. per 100
„ extra strong, in 54-pots, 25s. per 100
CARNATIONS, in 25 choice named varieties, strong, in 60-pots, 20s. per 100
DAISY, aucubæfolia, golden netted foliage, 5s. per 100, 40s. per 1000
„ Crown, fine, 4s. per 100, 30s. per 1000
„ Rob Roy, fine, dark red, 4s. per 100, 30s. per 1000
„ The Bride, finest white, 5s. per 100, 40s. per 1000
MENTHA PULEGIUM, 2s. per 100, 15s. per 1000
MYOSOTIS DISSITIFLORA, 6s. per 100, 50s. per 1000
PANSY, Cliveden Blue, 8s. per 100, 65s. per 1000
„ Blue King, 8s. per 100, 65s. per 1000
„ Dean's White, 8s. per 100, 65s. per 1000
„ Yellow Bedder, 8s. per 100, 65s. per 1000
PINKS, in 25 named varieties, 20s. per 100
POLYANTHUS, strong, from laced varieties, 10s. per 100
PRIMROSE, double yellow, 10s. per 100, 85s. per 1000
ROCKETS, double Purple, 12s. per 100
„ White, 10s. per 100
THYMUS, citriodora aurea marginatus, 4s. per 100, 30s. per 1000
WALLFLOWER, True Harbinger, 3s. per 100, 25s. per 1000
„ Golden Tom Thumb, 1s. 6d. per 100, 10s. per 1000
ALDER, 3 to 5 feet, very fine, 25s. per 1000
ASH, common, 3 to 5 feet, very fine, 30s. per 1000
„ 2 to 3 feet, very fine, 20s. per 1000
HORNBEAM, 2 to 3 feet, 20s. per 1000
PRIVET, 1½ to 2 feet, bushy, 12s. per 1000
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, 70s. to 75s. per 100
ASPARAGUS, 3-yr., extra fine for forcing, 25s. per 1000
APPLES, fine Standards, in variety, 60s. per 100
PEARS, fine Standards, in variety, 75s. per 100

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard :—
PEARS on the Quince and Pear stock.
APPLES on the Paradise and Crab stock.
CHERRIES on the Mahaleb and Cherry stock.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock ; do., young bearing trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds ; do., in pots for forcing, stout and well grown plants.
Descriptive Rose Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3d. *Miniature Fruit Garden*, 3s. 6d., free by post.

Seakale for Forcing.—Unrivalled.

ALFRED ATWOOD, 8, Palk Road, Clapham Junction, Battersea, S.W., having been a Grower for thirty-five years, begs to inform his numerous Customers that he is sending out the largest SEAKALE ROOTS he has ever had the pleasure of offering for Sale, at 20s. per 1000 ; any number under, 10s. per 100 : 1s. packing for every 500. Also ASPARAGUS of all ages, RHUBARBS of all varieties, fine FASTOLF and ANTWERP RASPBERRY CANES, GLOBE ARTICHOKES, &c. Price on application, addressed
ALFRED ATWOOD, Market Gardener, Clapham Junction, Battersea, S.W.
A remittance to accompany all orders.
Cheques crossed London and County ; Post-office orders payable High Street, Battersea.

ROCKWORK.—Red Sandstone Rock, for Rockwork, Ferneries, Grottoes. Best and most ornamental Rock for the purpose on rail here from our own pits.
WALKER AND CO., Farnborough Station, Hants.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and many eminent Gardeners.
3d. per bushel ; 100 for 20s. ; truck (loose, 250 bush.), 30s.
4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack ; 5 sacks, 25s. ; 12 for 45s., or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s. ; 12 for 40s., or 34s. per ton ; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel ; 15s. half ton, 26s. per ton ; in 1 r cwt. bags, 4d. each.
YELLOW FIBROUS LOAM and POTTING MOULD, 1s. per bushel, 13s. per half ton, 23s. per ton.
SPHAGNUM MOSS, 8s. 6d. per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth and Paper.
Write for free PRICE LIST. Goods free to rail.
H. G. SMYTH, 10, Castle Street, Endell Street, Long Acre, W.C.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3d. per bushel, 100 bushels (33 bags) 20s. Truck-load (loose) 30s., put free on rail ; 7s. for One-horse Van-load, if fetched from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society.—Four-bushel bag (bag included), 1s. ; 30 bags (bags included), 20s. ; truck free to rail, 25s.
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COCOA-NUT FIBRE REFUSE.—Reduced Price :—In 4 bushel bags, bags included, at 1s., or truckload of about 250 bushels, 25s. (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.

PEAT, Brown Fibrous, superior quality, for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16s. per ton, or £4 10s. per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.
Mr. W. TARRY, Bailiff, Bagshot, Surrey.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 4s. ; 5 bags, 20s. ; 10 bags, 36s. Bags 4d. each.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Christchurch, Hants.—BROWN, FIBROUS, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turfs and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s. ; five bags, 21s. ; 12 bags, 40s. Some also, of good quality, at 13s. 6d. per ton, four tons and upwards.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited)

SIMPSON'S RED SPIDER, THRIPS, &c., ANTIDOTE. Testimonials of the highest order on application. Per quart, condensed, 6s. ; per pint, 3s. 6d. Supplied to Seedsmen and Chemists. Strongly recommended in the *Gardener*, and by many first-class Gardeners. Has an established reputation for efficacy.
Prepared by JOHN KILNER, Wortley, near Sheffield.

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests : 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

UNDER ROYAL *PATRONAGE.*

TANTON'S
IMPROVED ROLLER-CRUSHED BONE.
One Inch, Half Inch, Quarter Inch, Dust.

The value of pure pulverised Bone has been of late amply exemplified by the immense bunches of Grapes now so universally seen upon Exhibition Tables and in our first-class Fruit Markets.
All the leading Gardeners, Fruit Growers and Exhibitors throughout the Kingdom use this largely. Samples are constantly being exhibited at the Royal Horticultural, South Kensington, Crystal Palace, Brighton, Royal Pomona Gardens, Manchester, and elsewhere.
Price Lists post-free on application.
A Sample Peck sent to any address on receipt of 2s.
TANTON'S SEED and MANURE STORES,
BOROUGH END, LONDON BRIDGE, S.E.

ANDERSON'S RUSSIA MATS,
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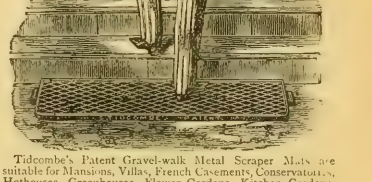
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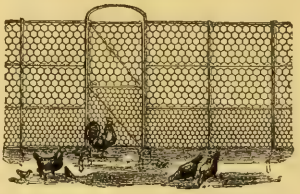
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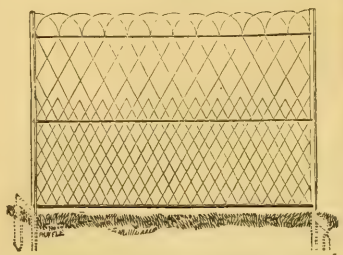
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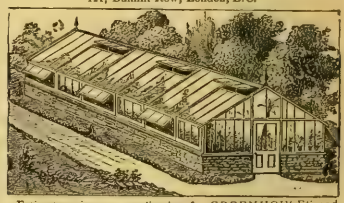
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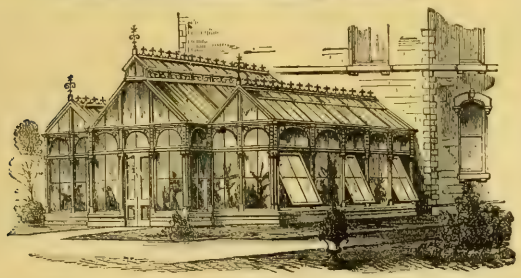
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229	9 ,, 7				
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180	10 ,, 8				
164	10½ ,, 8½	11 6	13 0	14 6	16 9
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 6	13 6	15 3	17 6
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103	14 ,, 10				
90	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11				
92	13 ,, 12	11 9	13 9	15 9	18 0
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	12 0	14 0	16 0	18 6
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15	12 6	14 0	16 0	18 6
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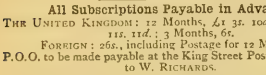
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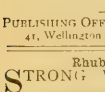
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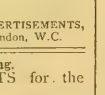
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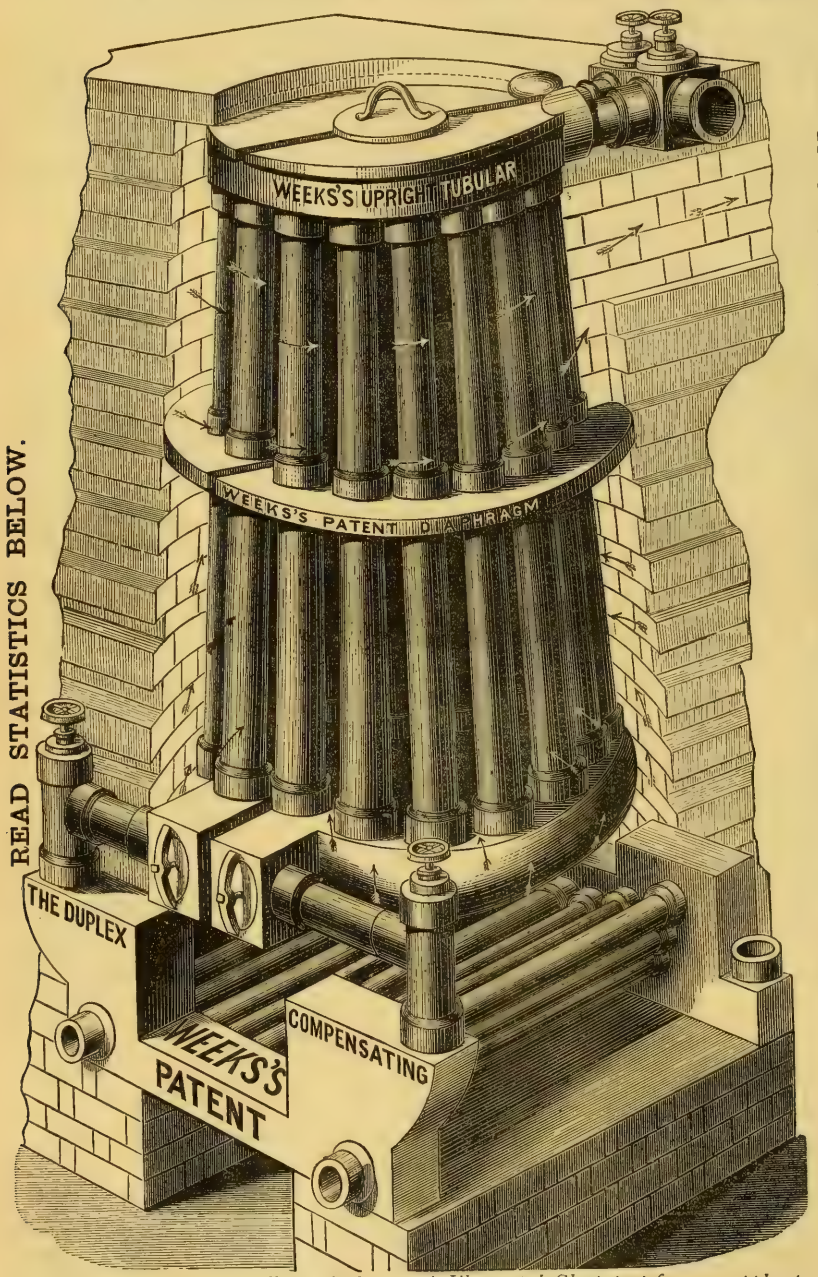
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THE

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NOTICE.—All Numbers of the "Gardeners' Chronicle" prior to 1874 are 1s. each.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE.—SCIENTIFIC, FRUIT and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, November 19, at 11 o'Clock. EXHIBITION of CHRYSANTHEMUMS. Competition for Messrs. Carter's, Hooper's, and Sutton's Prizes for VEGETABLES. By special request, Messrs. Jas. Veitch & Sons will again exhibit an interesting Collection of HARDY SHRUBS for Winter Bedding. GENERAL MEETING for ELECTION of FELLOWS at 3 o Clock. Admission 1s.

THE THIRTY-THIRD ANNUAL EXHIBITION (open to all England) of the BOROUGH of HACKNEY CHRYSANTHEMUM SOCIETY will be held at the Royal Aquarium, Westminster, S.W., on TUESDAY and WEDNESDAY, November 19 and 20, when, in addition to a liberal scale of Prizes, FIVE SILVER CUPS (value Five Guineas each), will be awarded.

SCHEDULES may be had on application. Entries will be received up to and including Friday, November 15, by
WILLIAM HOLMES, Honorary Secretary,
Frampton Park Nursery, Hackney, E.

WINTER GARDENS, SOUTHPORT.—The FIRST CHRYSANTHEMUM and FRUIT SHOW will be held on THURSDAY and FRIDAY, November 21 and 22. ENTRIES CLOSE November 18.
A. CAMPBELL, F.R.H.S., Horticultural Superintendent.

Notice.

THE ROYAL MIDLAND ROOT SHOW will be held at Leicester, on November 20 and 23, when SILVER CUPS and other valuable Prizes will be given for FARM ROOTS. All entries free. Forms on application to HARRISON AND SONS, Leicester.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
FLORAL and HORTICULTURAL MEETING in the Town Hall, Manchester, on TUESDAY, the 26th inst. Open from 12 at noon till 4 P.M. Admission to non-subscribers 1s. each. For further particulars, apply to
BRUCE FINDLAY, Royal Botanic Gardens, Manchester.

HOOPER'S PRIZES for POTATOS at The Royal Horticultural Society on the 19th inst. are as follows:—For the best dishes of nine tubers each of the following six new varieties, viz., McKinlay's Pride, Covent Garden Perfection, Grampian, Triumph, Trophy, Burbank's Seedling, 1st Prize, a Cup and £2 2s.; 2d Prize, £1 11s. 6d.; 3d Prize, 15s. Offered by
HOOPER AND CO., Covent Garden, London, W.C.

New Catalogue.

MAURICE YOUNG, Milford, near Godalming, Surrey. See Advertisement, p. 617.

NOTICE.—All who have purchased CHRYSANTHEMUM "CANNELL'S BRONZE," are requested to report the same to
H. CANNELL, The Home for Flowers, Swanley, Kent.

CAMELLIAS.—Six large good sorts for Sale, cheap, well set with bloom-buds and healthy. For particulars apply to
S. WOOLLEY, Nurseryman, Cheshunt, Herts.

Planting Season.

JAMES DICKSON AND SONS beg to draw attention to their very superior and very extensive Stock of hardily-grown and well-rooted TREES and PLANTS of every description. Priced CATALOGUES post-free.
"Newton" Nurseries, Chester.

To the Trade.—Seed Potatos.

CAREFULLY SELECTED and FREE FROM DISEASE.
CHARLES SHARPE AND CO. will have much pleasure in forwarding their SPECIAL PRICED CATALOGUE of SEED POTATOS, Grown by themselves this season.
CHARLES SHARPE AND CO., having at much trouble and expense procured the choicest stocks of all the finest English and American varieties, can confidently recommend what they offer.
Seed Warehouse, Sleaford.

The Lily Nursery, Ghent, Belgium.

J. VANDER SWAELMEN'S English CATALOGUES of Ornamental Plants, Winter and Spring Flowering Plants, Lilies, and other Bulbs and Roots, can still be had free on application.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Roses.

ROBERT CRAGG'S Descriptive CATALOGUE of Roses, Pansies, Polyanthus, Cyclamens, and other plants, is Now Ready. It contains all the best varieties in cultivation, both new and old. Sent free on application.
The Rose Nurseries, Car Colston, Bingham, Notts.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "Newton" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

Vines—Vines.

B. S. WILLIAMS begs to announce that his stock of GRAPE VINES is unusually fine, and now ready for sending out. Particulars and price on application.
The Victoria and Paradise Nursery, Upper Holloway, London, N.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

Gentlemen's Gardeners, Amateurs, and Others requiring

GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

Hawthorn Haws.

WANTED, 1000 bushels, free of branches and leaves. State cash price for any quantity and where delivered.
LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

THE GRANDVILLE NURSERY CO., Wells Street, Hackney, and at 8, Moorgate Station Buildings, E.C., are open to PURCHASE any quantity of SURPLUS ECHEVERIA in variety.

WANTED, English ELM (true), grafted, from 12 to 14 feet or 18 to 20 feet in height. Must have straight, clean, stout stems and good heads, for single specimens.—State price and quantity to
FRANCIS AND ARTHUR DICKSON AND SONS, The "Upton" Nurseries, Chester.

WANTED, TELEGRAPH CUCUMBER SEED (true) in quantity.—State lowest price for cash per ounce or pound to
A. WATKINS, Nursery, Bishop Stortford.

To Market Gardeners and Others.

WANTED, new ASPARAGUS and SEAKALE SEED. Address samples with lowest cash price and quantity to
CHARLES SHARPE AND CO., Seed Growers and Merchants, Sleaford.

Potatos.

WANTED, offers of the following Sorts:—Lapstone, Blanchard, Bedfont Prolific, Radstock Beauty, Lady Webster, Onwards, Edgecot Seedling, Grampian, &c.
HOOPER AND CO., Covent Garden, London, W.C.

VALUABLE PRIZES for VEGETABLES, offered by JAMES CARTER AND CO., at the Royal HORTICULTURAL SOCIETY'S MEETING, November 19, for the best Collection of 10 DISHES of VEGETABLES, to comprise 12 Onions, 3 Heads of Celery, 18 Round Potatos, 18 Kidney Potatos, 6 Turnips, 6 Parsnips, 3 Red Beet, 3 Cabbage, 6 Carrots, 3 Cauliflowers (any variety)—First Prize, £5 5s.; 2d Prize, £3 3s.; 3d Prize, £2 2s.; 4th Prize, £1 1s.
Full particulars on application to
CARTERS, The Queen's Seedsmen, High Holborn, London.

AT CARTER'S ROOT SHOW, to be held at the AGRICULTURAL HALL, ISLINGTON, November 23. For the best 12 DISHES of VEGETABLES.—First Prize, £3; 2d, £2; 3d, £1; 4th, 10s. For the best 8 DISHES of POTATOS, 9 tubers each.—First Prize, £3; 2d, £2; 3d, £1; 4th, 10s. For the best 12 ROOTS ONIONS, spring-grown.—First Prize, £1; 2d, 10s.
Full particulars on application to
CARTERS, The Queen's Seedsmen, High Holborn, London.

DESCRIPTIVE CATALOGUE of ROSES, FRUIT TREES, DECIDUOUS and EVERGREEN TREES and SHRUBS, RHODODENDRONS, VINES, CLIMBERS, &c. Free by post on application.
H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).

THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 80s. per 100; 4 to 4½ feet, 18s. per doz, 100s. per 100. All recently transplanted. Every plant a perfect specimen.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.
CATALOGUES on application.
The Lawson Seed and Nursery Company (Limited) Edinburgh.

POPLARS for SCREENS, &c.—Lombardy, Canadian, and large-leaved—all sizes, from 3 to 12 feet. Many thousands. Low prices on application.
RODGER MCCLELLAND AND CO., 64, Hill Street, Newry.

HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application.
CRANSTON AND CO., King's Acre Nurseries, Hereford.

LAURELS, Old and New, the latter very fine, superior foliage, superior habits, superior constitution, distinct shades of green, the largest and best grown stock in the kingdom. Send for specimen leaves and priced Catalogue.
RODGER MCCLELLAND AND CO., 64, Hill Street, Newry.

WINTER-FLOWERING CARNATIONS.—Six best varieties for winter-blooming, well-rooted in pots, just showing buds, 8s. per dozen; fine large plants, in 48-size pots, set with buds, 16s. per dozen.
R. MOSLEY, The Nursery, Saxmundham, Suffolk.

WINTER FLOWERING ORCHIDS for SALE, Cheap.—Good plants of Cypripedium insigne, coming into flower. A few good plants of Lycaste Skinneri cristata, and a few dozen bulbs of Pleione Wallichiana. Apply to
S. WOOLLEY, Cheshunt, Herts.

CHRYSANTHEMUMS.—Our Collection (which includes all the new varieties of the past season) is now in full bloom. An inspection invited.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.
Nursery adjoining the Kingston Station, L. & S. W. Railway

LILIES OF THE VALLEY, strong, for forcing, first quality, all with flowers, price 36s. per 1000.
In stock 800,000 pieces. Apply to
GUSTAV A. SCHULTZ, Eckartsberg, Berlin.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narcissus, 10s. per bushel, 6s. per ½ bushel, 3s. 6d. per peck. Terms cash with order. Package free. Post-office orders payable at Vauxhall Cross to
Mrs. J. E. ALDERSON, Langley Lane, South Lambeth, Surrey.

MULBERRIES, in large or small quantities, in good condition for transplanting.
PONSFORD AND SON, Loughborough Park Nurseries, Brixton, Surrey.

STRAWBERRY PLANTS, extra strong and true to name, twelve leading sorts. Price List and Sample Box of Twenty Plants (four sorts), post-free for twelve stamps.
C. POCOCK, Nursery, Wincanton.

For Forcing, Superb Roots.

ASPARAGUS, 4, 3, 2, and 1-yr., thinly-sown stuff.
RHUBARB, finest stools, 4, 3, and 2-yr., from seed.
C. R. FREEMAN, Seed Grower, Norwich.

SALES BY AUCTION.

Unreserved Sales of Dutch Bulbs of superior quality, comprising the finest Hyacinths, Tulips, Crocuses, Narcissus, Jonquils, Lilies, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on MONDAY next, and every following MONDAY, at the Mart, opposite the Bank of England, City, at half-past 11 o'Clock precisely.

P. & M. will buy for gentlemen who cannot attend.

Catalogues had at 98, Gracechurch Street, E.C.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 300 Choice Double CAMELLIAS and AZALEA INDICA, compact plants, 1½ to 3 feet, beautifully studded with bloom-buds; a superb assortment of 500 handsome Standard and Dwarf ROSES, selected hardy CONIFERÆ, SHRUBS and AMERICAN PLANTS; fine FRUIT TREES, together with some GREENHOUSE PLANTS in flower, sound DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Rooms, as above, on TUESDAY, November 19, at 12 o'Clock precisely.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Exeter.

GREAT SALE of beautifully grown NURSERY STOCK, in fine condition for removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co. to SELL by AUCTION, on the Premises, The Nurseries, Exeter, on TUESDAY, November 19, and three successive days, at 11 o'Clock each day, a considerable quantity of small and medium-sized NURSERY STOCK, comprising several hundreds of unrivalled specimen Coniferæ and Evergreen trees, in great variety; also large quantities of Common, Portugal, and other Laurels, Laurustinus, Biotas, Aucubas, Thujas, Pines, English and Irish Yews, Green and Variegated Hollies, Rhododendrons, choice Border Shrubs, Ornamental Trees, a fine assortment of selected Fruit Trees, all root-pruned and carefully prepared for removal, comprising a grand collection of Standard and Pyramid Apples, Standard Pears, also Peaches, Nectarines, Cherries and Plums, in pots, Standard Roses, and other Stock.

The Stock may be viewed at any time. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

N.B.—Messrs. P. & M. beg to call special attention to this extensive Sale, and to the rare opportunity offered thereby to Gentlemen and Noblemen improving their Estates, and to the Trade, and others largely engaged in planting.

Tooting, S.W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Exotic Nursery, Tooting, S.W., on TUESDAY, November 26, at 12 o'Clock precisely, a large quantity of thriving young NURSERY STOCK, remarkably well grown, comprising several thousands of choice Evergreens and Coniferæ for effective planting; beautifully grown specimen Coniferæ, a splendid assortment of Ornamental and Forest Trees, fine Fruit Trees, Hardy Climbing Plants, in pots; Spiræa japonica clumps, a few lots of Greenhouse Plants, such as specimen Rhododendrons, Camellias, Lapagerias, &c.

May be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Streatham, S.W.

Three minutes' walk from the Streatham Hill Station.

EXPIRATION of LEASE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Leigham Court Read, on WEDNESDAY, November 27, at 12 o'Clock punctually, the whole of the NURSERY STOCK, comprising Evergreen Arbor-vitæs, fine common and Portugal Laurels; large quantities of Box, Green Hollies, Aucubas, Poplars; also fine fruiting Pyramidal Apples and Pears. The whole in good condition for removal.

Now on view. Catalogues on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Acton, W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Uxbridge Road, Acton, W., on FRIDAY, November 29, at 11 for 12 o'Clock precisely, a large quantity of NURSERY STOCK, consisting of an assortment of choice Border Shrubs, 1500 Golden Arbor-vitæ, 1 to 3 feet; 2000 Green and Variegated Euonymus, 1 to 2½ feet; a considerable number of Ornamental Trees, Standard and Dwarf Roses, Fruit Trees in bearing condition, &c.

May be viewed any day prior to the Sale. Catalogues can be had on the Premises, and of the Auctioneers.

Finchley.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, about the end of this month, a portion of the NURSERY STOCK now growing at the Nursery, Finchley, by order of Messrs. Cutbush and Son. Further particulars next week.

Dutch Flower Roots, for Present Planting and Spring Flowering, arriving weekly from well-known farms in Holland.—SALES every MONDAY, WEDNESDAY, and SATURDAY during NOVEMBER, commencing at half-past 12, and generally finishing about 4 o'Clock.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, IRIS, SNOWDROPS, LILIUMS, RANUNCULI, &c., in large and small lots to suit all buyers. Catalogues on application.

Established and Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, November 22, at half-past 12 o'Clock precisely, a quantity of fine plants of Dendrobium formosum giganteum, D. Hedyosmum, Phalænopsis grandiflora aurea and Phalænopsis Schilleriana, Saccolabium guttatum, some good plants of Odontoglossum Alexandræ, Oncidium varicosum, Masdevallia Davisii, &c., mostly in flower; several Collections of established Orchids, an importation of Lælia Boothiana, Lælia Perrini, and other Orchids in good condition; an importation of Disa grandiflora, a consignment of specimen Dracænas, Palms, Tree Ferns, Azaleas, &c., from France; also strong plants of Grammatophyllum Ellisii, growing freely with strong breaks, 50 Ouvirandra fenestralis, with from 10 to 15 leaves each, and 50 strong young plants of Ravenalia madagascariensis.

On view morning of Sale, and Catalogues had.

Lilium auratum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 21, at half-past 12 o'Clock precisely, 4000 fine bulbs of LILIUM AURATUM, just received direct from Japan in the best possible condition, lotted to suit the trade and private buyers; also a collection of new and rare LILIES, of very fine English growth; also the new FREESIA REFRACTA ALBA (the Gem among bulbous plants); and a quantity of BULBS from Holland.

On view morning of Sale, and Catalogues had.

Chertsey, Surrey.

1 Mile from the Addlestone and 2 Miles from the Woking Station on the South-Western Railway.

IMPORTANT FIVE DAYS' SALE of valuable well-grown NURSERY STOCK, in the Brox and Woodham Nurseries.

MESSRS. R. AND J. WATERER AND SON are instructed by the Executrix of the late Mr. G. Grey to SELL by AUCTION, in October, the STOCK upon the above Nurseries.

May be viewed and Catalogues had fourteen days prior to the day of Sale, upon the Premises, and of the Auctioneers, Chertsey.

In Liquidation.—Wellington College Nursery, BAGSHOT, SURREY.

Near the Wellington Station on the Reading and Wokingham Railway.

MESSRS. R. AND J. WATERER AND SON are instructed by the Trustee to the Estate of Mr. Thornton to SELL by AUCTION, on the Premises, on MONDAY, November 18, at 12 o'Clock precisely, the valuable Stock upon the above Nursery, comprising about 3000 mixed Border SHRUBS, 1000 Spanish CHESTNUTS, from 2 to 3 feet; 4000 RHODODENDRONS to name, 1 foot 6 inches to 3 feet; 3400 R. PONTICUM, ditto; 800 AZALEA PONTICA, 3000 MANETTI STOCKS, 500 AUCUBAS, 100 Golden YEWS, 1000 Green and Variegated HOLLIES, from 1 to 2 feet; 150 Pyramid APPLES, 700 CURRANTS, 1500 Scotch FIR, from 1 to 3 feet, and a large variety of other Plants, including CEDRUS DEODARA, PINUS INSIGNIS, THUJA LOBBII, LARICIO, SPIRÆA, LAURELS, &c.

May be viewed and Catalogues had seven days prior to the day of Sale, on the Premises; of D. M. STEVENS, Esq., Solicitor, The Mount, Guildford, Surrey; and of Messrs. WATERER AND SON, Auctioneers and Valuers, Chertsey, Surrey.

The Nurseries, Warminster, Wilts.

IMPORTANT NOTICE of an EXTENSIVE SALE of SUPERIOR NURSERY STOCK.

MR. W. ABRAHAM is instructed to SELL by AUCTION, at the above Nurseries, by order of the Executors of the late Mr. George Wheeler, without reserve, on MONDAY, November 18, and four following days, at 12 o'Clock each day punctually, a large quantity of superior NURSERY STOCK, consisting of Rhododendrons, Azaleas and other American Plants; Standard, Bush, Pyramid and Espalier Fruit Trees; Standard and Dwarf Roses, Standard Ornamental Thorns in variety; Purple, Crested and other Beech, Cedrus Deodara, Spruce and Silver Firs, English, Irish and other Yews; Arbor-vitæs, Cupressus Lawsoniana, Cryptomeria Japonica, Picea Nordmanniana and other Coniferæ; Limes, Chestnuts, Laurels, Aucubas, Tree Box, Laurustinus, Privet, Clematis, Hardy Border Plants, Bulbs, Rhubarb, Strawberry Plants, and a variety of other Nursery Stock.

Catalogues to be obtained at the Nurseries, Warminster, or of the Auctioneer, Goldworth Nursery, Woking, Surrey.

The Stock, which is in good, healthy condition, fit for immediate planting, may be viewed seven days prior to the Sale, and will be found worthy the attention of gentlemen intending to plant.

The Shawe Nurseries, Melbourne, near Derby.

To PLANTERS, NURSERYMEN, and OTHERS.

MESSRS. OLIVER, NEWBOLD AND OLIVER, respectfully give notice that they are instructed to SELL by AUCTION, on the Premises, the Shawe Nurseries, Melbourne, near Derby, on WEDNESDAY, November 20, at 12 o'Clock, the whole of the superior and extensive NURSERY STOCK, consisting of 1,190,000 Quick, 87,000 Larch, 15,000 Hollies, 1000 Irish and English Yews, 5000 Scotch Firs, 600 Aucuba japonica, 18,000 Gooseberry and Currants, 88,000 Privet, 18,000 Spruce. The whole of the Stock is young, well-grown, clean, and in excellent condition.

Descriptive Catalogues ten days previously to the Sale, may be had on application at the Nurseries, Melbourne; or at the Offices of the Auctioneers, Wardwick, Derby.

TO BE DISPOSED OF, a FLORIST'S BUSINESS in a highly respectable suburb within a few miles of London. Well established, with a good business attached, including an excellent Leasehold Residence, Gothic style, with two Sitting-rooms, Kitchen and Scullery, and four Bed-rooms, Shop and Office, large Show-house at side, five span-roof Greenhouses, 40 feet each, and room for six more. Lease fifty-five years. Ground Rent, £6 per annum. Price £1100. Apply to

Mr. PALMER, Auctioneer, High Street, Lewisham, near Lewisham Junction, S.E.

TO BE LET, the WOOLHAMPTON NURSERIES, with immediate possession, in consequence of the death of Mr. W. Hunt. This genuine concern offers an opportunity to capitalists rarely to be met with, placed as it is close to the Midgham Station on the Berks and Hants branch of the Great Western Railway, and situate in the midst of the estates of large landed proprietors. Has not changed hands for more than fifty years. The LEASE to be SOLD, and the STOCK taken at a valuation. Midgham is situate 9 miles from the important Market Town of Reading. Full particulars of

Messrs. MECEY AND SON, Solicitors, Thatcham, Newbury; or of Mr. J. A. JOHNSTON, Estate Agent, Newbury, Berks.

To Gardeners, Florists, &c.

TO LET, a HOUSE and GARDEN (¼ of an acre), with Viney, Forcing-pits, Stabling, Piggeries, &c., well stocked with Bedding and other Plants. Also a good Lock-up SHOP in a capital thoroughfare, doing a good business. To be let at valuation.

F. ALDERTON, Florist, &c., 2 Cambridge Place, Falsgrave, Scarborough.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

METROPOLITAN EXHIBITION, 1879.

FARM AND MARKET GARDEN PRIZES.

In connection with the Exhibition of the Society for the year 1879, the following prizes are offered by the Mansion House Committee for the Best-Managed Farms and Market Gardens:

SECTION I.—Sewage Farms in England and Wales.

Class 1. Farms utilising the sewage of not more than 20,000 people. A Piece of Plate, value £100.

Class 2. Farms utilising the sewage of more than 20,000 people. A Piece of Plate, value £100.

SECTION II.—Market Gardens, within a radius of 20 miles from the Mansion House.

Class 3. Market Gardens, exceeding 10 and not exceeding 50 acres in extent. First prize, £50; 2d, £25; 3d, £10.

Class 4. Market Gardens, above 50 acres in extent. First prize, £50; 2d, £25; 3d, £10.

SECTION III.—Market Garden Farms, situated in one of the five Metropolitan Counties, viz., Kent, Surrey, Middlesex, Hertford, and Essex; or if situated in any other county, such farms to be within a radius of 50 miles of the Mansion House:

Class 5. Market-Garden Farms, on which Market-Garden crops alternate with Farm Crops, above 100 acres in extent. First Prize, £50; 2d, £25; 3d, £10.

The last day of Entry is November 20, 1878. Forms of Entry and Conditions of Competition may be had on application to

H. M. JENKINS, Secretary.

12, Hanover Square, London, W.

Roses.

CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready. The Trees are very fine this season.

Fruit Trees.

CHARLES TURNER'S select LIST of the above is also now ready. Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.

CHARLES TURNER'S CATALOGUE can be had on application. The Royal Nurseries, Slough.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal, Barbourne Nurseries, Worcester.

To Nurserymen and Others.

FOR SALE, about 70,000 strong MANETTI STOCKS, free on rail at Woking Station. ROWBOTHAM & CO., Goldworth Road Nursery, Woking.

Vines—Vines—Vines.

WM. CUTBUSH AND SON beg to announce that their stock of the above is very fine this season, both in Fruiting and Planting Canes, which are strong and well ripened. Prices on application. Special offer to the Trade.

Highgate, London, N., and Barnet, Herts.

To the Trade.

SEED NOVELTIES.—Our LIST of FLOWER and VEGETABLE SEED NOVELTIES is now ready, and will be posted on application to F. SANDER AND CO., Seed Growers, St. Albans.

HOME GROWN LILIUM AURATUM. —Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."

CHARLES NOBLE has just harvested this year's crop, and will give prices on application.

Bagshot.—October 12.

SEAKALE for FORCING.—Extra fine large roots, 90s. per 1000, and 2s. packing; under that number, 12s. per 100, and 1s. packing. A remittance to accompany all orders, addressed

ALFRED ATWOOD, Market Gardener, 8, Palk Road, Battersea, S.W.

RASPBERRY CANES for SALE.—About 20,000 to be had, cheap

For further particulars apply to H. THORNTON, 1, Maxwell Road, Fulham, S.W.

To the Trade.

NEW POTATO, "PRIDE of ONTARIO."

H. and F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application. Seed Growing Establishment, Wisbech.

GIANT LILY of the VALLEY.—Extra strong blooming roots, 2s. per dozen, 12s. 6d. per 100, package free.

E. COOLING, Mile Ash Nurseries, Derby.

To the Trade.

POTATO ONIONS, large and sound. Price on application.

HOGG and ROBERTSON, 22, Mary Street, Dublin.

To the Trade.

ROSES, Dwarf, on Manetti, fine stuff, 30s. per 100, £12 10s. per 1000, my selection.

SEAKALE, extra strong, 80s. per 1000; strong, 60s. per 1000; Planting, 30s. per 1000.

BRIERS, seedling, 1-yr., extra fine stuff, 20s. per 1000.

For cash only with orders.

R. LOCKE, Rose Farm, Red Hill, Surrey.

To the Trade.

CHERRIES, PLUMS, and PEARS (Standard), 6 feet stems, bushy heads, well set with buds; Standard WALNUTS and MEDLARS, Portugal LAURELS, Horse CHESTNUT, and Evergreen OAKS; all remove with good balls of earth. Special low prices on application to

J. GEORGE HILL (late John Scott), Royal Nurseries, Merriott, Somerset.

TO THE TRADE ONLY.

Nurserymen intending to purchase the undermentioned Plants should send their Orders to

A. M. C. JONGKINDT CONINCK,

Because of the following reasons :—

1. *Strong well-rooted plants are sold at the lowest prices.*
2. *Packing is most carefully executed, and very little charged for.*
3. **Orders to the amount of £2 are delivered free throughout Europe.**

OFTEN TRANSPLANTED.—CONIFERÆ.—WELL-ROOTED.

The best variegated varieties; height 1 foot ... ... £2 10*s.* per 100; £20 17*s.* per 1000

A List of the Names gratis and free on application.

Large Quantities of

CEDRUS ATLANTICA, CEDRUS LIBANI, CUPRESSUS LAWSONIANA and THUJA OCCIDENTALIS,

Of different sizes, at the lowest prices.

ROSA MANETTI ... ...
ROSA MULTIFLORA DE LA GRIFFERAIE } fit for immediate working ... 25*s.* per 1000; £10 per 10,000

DIELYTRA SPECTABILIS, strong clumps ... ... 25*s.* per 100; £10 17*s.* per 1000

CYCLAMEN PERSICUM FL. ROSEO, all grown in pots ... ... 25*s.* to 67*s.* per 100

NOVELTY.—SPIRÆA PALMATA ELEGANS.—NOVELTY.

A beautiful hybrid between SPIRÆA JAPONICA and SPIRÆA PALMATA, producing a large quantity of white flowers with red stamens.

Strong Plants, 5s. each; Six Plants, £1; Twelve Plants, £1 12s.

2-YR. CORDONS.—FRUIT TREES.—2-YR. CORDONS.

APPLES, on Doucin ... ... 42*s.* per 100 | PEARS, on Quince ... ... 50*s.* per 100

AZALEA PONTICA.

Strong plants, often transplanted, well rooted ... ... £2 10*s.* to £4 per 100

Large Quantities of HARDY PERENNIALS, ALPINE PLANTS, &c., at the Lowest Prices.

A List of the Names gratis and free on application.

A. M. C. JONGKINDT CONINCK,

TOTTENHAM NURSERIES, DEDEMSVAART, near ZWOLLE, NETHERLANDS.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.

Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d. ; Planting, 2s. 6d. to 5s.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

FORFORCING.
SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

To the Trade.

ROSES. — Standard and Half-Standard, extra fine. Low quotation with Purchaser's selection.
MARECHAL NIEL, in pots, very fine, 75s. per 100 ; second size, 65s. per 100.
LIST of varieties on application.
GEORGE COOLING, Nurseryman, Bath.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

Roses, Primulas, Vines, &c.

EDWIN HILLIER offers as below, all well-grown stuff :—ROSES, Tea, on Brier, 48-pots, 50s. and 60s. per 100 ; Dwarf Hybrid Perpetuals, from ground, 25s. and 30s. per 100 ; Queen of Bedders, 75s. per 100. 1000 PRIMULAS, Double White, 48-pots, 75s. per 100. POT VINES, very fine, 30s. and 60s. per dozen. CLEMATIS, best kinds, 8s. per dozen. MANETTI STOCKS, very good, 21s. per 1000. Cash required from unknown persons.—Nurseries, Winchester.

Cabbage and Lettuce Plants.

H. J. HARDY, Stour Valley Seed Grounds, Bures, Suffolk, begs to offer a quantity of strong, healthy, autumn-sown plants :—
ENFIELD MARKET and CARTER'S HEARTWELL, 3s. per 1000.
RED DUTCH, 5s. per 1000.
LETTUCE.—Brown Cos, Siberian, and Champion, 5s. per 1000.
Package and carriage free for 5000 upwards (or plants equivalent), to any Railway Station in England.
Reference required from unknown Correspondents.

EWING AND COMPANY offer to the Trade and large buyers :—
APRICOTS, dwarf maiden and dwarf trained, in quantity, extra fine.
TEA and NOISETTE ROSES, in pots, very fine, of nearly all the best kinds, in quantity.
GOOSEBERRIES, of best kinds, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted.
CURRANTS, 1-yr. cuttings, and 1-yr. and 2-yr. transplanted, of Black Naples, Red Dutch, and other best sorts.
LIMES, large-leaved red-twigged variety, with straight stems, good pyramidal heads, and (most important of all) good fibrous roots.
The Royal Norfolk Nurseries, Eaton, near Norwich.

We have about Five Hundred

POT VINES, 2-yr. old, grown without bottom-heat. For strength, vigour, ripeness, and prominence of eyes we believe they cannot be surpassed. The Trade supplied. We shall be glad to send samples to any address : 5s. each.
THE MANAGER, St. George's Gardens, St. Anne's-on-the-Sea, Lancashire.

To the Trade.

SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.
H. AND F. SHARPE, Seed Growers, Wisbech.

A. RATHKE AND SON, The Nurseries, Braust, near Danzig, Germany, have to offer, for cash :—
EUONYMUS EUROPÆUS, 1 yr. seedlings, 9s. per 1000, £4 per 10,000 ; 2-yr. seedlings, 13s. 6d. per 1000, £6 per 10,000 ; 3-yr. seedlings, 18s. per 1000, £8 per 10,000.

Offer to the Trade.

FORCING ASPARAGUS.—The Subscribers have to offer the produce of half an acre extra strong Asparagus with splendid crowns, suitable for forcing. Samples and price on application to
DICKSON, BROWN AND TAIT, Seed Merchants, 43 and 45, Corporation Street, Manchester.

Planting Season.

R. AND A. MORRISON'S Stock of LARCH and SCOTCH FIR (true native), and other FOREST TREES, being this year very large and fine, they are enabled to make low quotations for large quantities.
CATALOGUES on application.
The Nurseries, Elgin.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

TO THE TRADE.
DWARF ROSES, | MANETTI STOCKS,
BANKSIAN ROSES, | LIMES and PLANES.
Good and cheap. Prices on application to
WM. PAUL AND SON, Waltham Cross.

Edelweiss.

(GNAPHALIUM LEONTOPODIUM, Jacq.)

CHARLES SHARPE AND CO., having received a small supply of Seed of the above lovely little Alpine Plant with woolly silvery-white bracts, can offer packets post-free at 2s. 6d. each. Its cultivation presents no difficulty, and full instructions will be sent with each packet.
Seed Warehouse, Sleaford.

LARCH FIR—300,000, 2 to 3 and 3 to 4 feet, and large quantities of other Forest Trees.
NEW HEDGE PLANT, Myrobella Plum, of far more rapid growth than Quick.
FRUIT TREES, ORNAMENTAL TREES and SHRUBS, in large quantities.
Priced CATALOGUES, also terms to the Trade, on application to
J. CHEAL AND SONS, Lowfield Nurseries, Crawley, Sussex

Larch—Larch—Larch.

SPECIAL OFFER to the Trade.
500,000 LARCH FIR, transplanted, 1 to 1½ foot, 1½ to 2 feet, 2 to 3 feet.
Also Scotch FIR, Austrian PINES, Silver FIR, ELM, BIRCH, BEECH, &c., in quantity.
LAUREL, common, transplanted } All sizes, splendid
BERBERIS DARWINII, transplanted } roots, in fine con-
LAURELS, Portugal, transplanted } dition.
THORN QUICKS, seedling, fine quality.
Prices on application.
Cash or Trade References required.
The above are all well grown and in good condition for removal.
GEORGE R. DAVIDSON, Nurseryman, Newry, Ireland.

SPECIAL OFFERS TO THE TRADE.
MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

PAUL'S Hybridised POLYANTHUS, strong blooming clumps in all shades and colours. The above are a beautiful strain, and will make a great display in early spring, price 2s. per dozen, 10s. per 100, 70s. per 1000.
HARDY HERBACEOUS and ALPINE PLANTS at 30s. per 100 ; a stock of 700 species and varieties.
CYCLAMEN PERSICUM, in pots, blooming plants, 9s. per dozen.
CHRYSANTHEMUMS, covered with flower-buds, in 7-inch pots, 24s. per dozen.
EPIPHYLLUM TRUNCATUM, in six kinds, winter flowering, 18s. per dozen.
CINERARIAS, extra fine plants, in 5-inch pots, 9s. per dozen.
PELARGONIUMS, early flowering, strong cut-down plants, in 5-inch pots, will force into flower by March. These are very fine plants and the new Covent Garden strain in twenty five kinds, such as Acme of Perfection, Duchess of Edinburgh, Mrs. John Wood, &c. Price 12s. per dozen, 75s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurels in fine varieties, variegated and green Hollies, nearly every variety of Coniferæ, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree ; also a fine and select assortment of pyramid and bush Fruit Trees, Apples, Pears, Plums, and Cherries, 12-yr. old, very fine, well transplanted and in full bearing.
Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks ; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable. Address and
PROPRIETOR, Whitchurch Gardens, Edgware, London.

To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to
LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France ; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Fruit Trees.

SCOTT'S ORCHARDIST, the most useful work on Fruit Trees in the English language, free for 3s. 6d.
The Merriott Nurseries contain all the best varieties of APPLES, PEARS, PLUMS, CHERRIES, CURRANTS, GOOSEBERRIES, APRICOTS, PEACHES, NECTARINES, NUTS, FILBERTS, WALNUTS, &c. Trees of all sizes and shapes. Priced LIST free on application to.
J. GEORGE HILL, (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

Planting Season.

To NOBLEMEN, GENTLEMEN and the TRADE.
THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to
J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

SPECIAL NOTICE. — MESSRS. RUSH & YEATS, of the Eaton Road and Queen's Park Nurseries, Chester, beg to announce that they have this day DISPOSED OF the whole of their NURSERY BUSINESS, including the Trees, Plants, Stock in Trade, and all other effects belonging thereto, to Messrs. JAMES DICKSON AND SONS, of the Newton Nurseries and 108, Eastgate Street, Chester, to whom Messrs. Rush & Yeats beg to refer all CUSTOMERS for NURSERY GOODS.—October 23, 1878.

TO THE TRADE.
MANETTI STOCKS, strong, clean grown, and well-rooted, 25s. per 1000.
LIMES, 10 to 12 feet, magnificent trees, 8 to 9 inches round a foot from the ground, 25s. per dozen.
ELMS, English, 7 to 8 feet, 20s. per 100 ; 10 feet, 50s. per 100 ; 12 feet, extra stout, 12s. per dozen.
HORSE CHESTNUT, 9 to 10 feet, extra strong and straight, 9s. per dozen.
OAK, English, 10 to 11 feet, fine trees, 30s. per 100.
CHERRIES, Morello, extra fine, dwarf-trained, 20s. per doz.
H. BLANDFORD, The Dorset Nurseries, Blandford.

EVERGREENS, fine, large, finely cultivated, standing singly, well furnished to bottom, and certain to remove well :—
PINES, Austrian, 4 to 5 feet, 6s. per dozen, 40s. per 100 ; 6 to 7 feet, 12s per dozen, 75s. per 100.
YEWS, English, 5 to 6 feet, and 5 to 6 feet through, 7s. 6d. each, 60s. per dozen ; 7 to 8 feet, and 6 feet through, 10s. 6d. each.
CEDRUS DEODARA, 3 to 4 feet, fine, 3s. 6d. each, 30s. per dozen ; 4 to 5 feet, 5s. each, 45s. per dozen.
SPRUCE, English, 5 to 6 feet and 5 feet through, 3s. 6d. each, 35s. per dozen.
CUPRESSUS LAWSONIANA, 4 to 5 feet, 4s. per dozen, 35s. per 100.
YEWS, English, 2 to 3 feet, 4s. per dozen, 30s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

LARGE TREES for Immediate Effect, frequently transplanted, and will remove safely.
LIMES, 7 to 8 feet, clean stems, good heads, 8s. per dozen 50s. per 100 ; 9 to 10 feet, 12s. per dozen, 75s. per 100.
HORSE CHESTNUT, 7 to 8 feet, clean stems, 8s. per dozen, 40s. per 100.
SYCAMORE, 7 to 8 feet, clean stems, 8s. per dozen, 40s. per 100.
ELMS, English, 7 to 8 feet, 8s. per dozen, 40s. per 100.
BIRCH, Silver, 10 to 12 feet, 8s. per dozen, 40s. per 100.
THORN, Paul's Double Crimson, 5 to 6 feet, bushy, 12s per dozen, 75s. per 100.
BEECH, fine, 5 to 6 feet, fine roots, 12s. per dozen, 75s. per 100.
H. M. holds a stock of many thousands of the above.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

TODEAS.—Healthy young plants of T superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

BUDDED CAMELLIAS and AZALEAS. —Ghent Azaleas, Azalea mollis, Spiræa japonica, Lily of the Valley, Palms and Ferns for decoration, Ficus elastica, Begonias, &c. Also over one hundred large specimen Camellias, choicest varieties, splendid pyramids, 3, 4 to 5 feet high, grown in tubs, and nearly all covered with large swollen buds ready to flower, are offered at the usual moderate charges.
The new illustrated general CATALOGUE forwarded free on application.
A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

LEE'S NEW VIOLET ODORATISSIMA. —Habit dwarf and compact, quite distinct from any other variety ; colour, purplish azure, changing to pale azure when fully developed ; form, fine ; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates :—15s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

Annual A B C Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families ; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c. ; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL FOREST TREES, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.
Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to
THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.
Early orders are solicited for the above choice plants. Apply to
THE MANAGER, Calcot Gardens, Reading.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

SUTTON'S MAGNUM BONUM POTATO —Seed direct from the Raiser. True and good sample. £9 per ton, or 14s. 6d. per sack (of 168 lb.), sacks inclusive, delivered on Rail at this Station. Terms cash with order (or satisfactory reference. Cheques crossed "Wilts and Dorset," Post-office Orders payable to
H. T. BATH, Nurseryman and Seedsman, Lymington, Hants.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.

HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown : 14s. to 20s. per 100.

SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
,, double white, 12s. to 16s. per 100.
,, ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.

DIELYTRA SPECTABILIS, 20s. to 25s. per 100.

LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
,, ,, ROSEUM, 20s. to 26s. per 100.
,, ,, RUBRUM, 20s. to 26s. per 100.
,, CHINENSIS TIGRINUM, 6s. to 8s. per 100.

CHRISTMAS ROSES, (Helleborus niger), fine, 40s. to 60s. per 100.

Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.

BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.
Descriptive and Priced Catalogues for 1878 *now ready.*
Address—
CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

HARDY FLOWERS
FOR
Exhibition, Herbaceous Border, and Spring Flower Gardens.

All choice sorts, true to name.

In 12 sorts, per doz.—s. d.			In 12 sorts, per doz.—s. d.		
Carnations and Picotees			Pentstemons	3	6
Single plants ..	0	6	Phloxes	3	6
Pairs	12	0	Pinks	4	0
Clematis	9	0	Potentillas	6	0
Delphinium	6	0	Pyrethrums	5	0
Hollyhocks, from first-class seed ..	4	0	Saxifrages	3	0
Iris, German	3	0	Sedums	3	0
Pæonies	6	0	Veronicas, large bushes, 9 to 15 in. through..	6	0
Pansies, Show	3	6	Violets, Sweet	3	6

BEDDING PANSIES.—Blue King, Clevedon Blue, Purple, and Yellow ; Chieftain, Cloth of Gold, Peach Blossom, and The Tory, 2s. per dozen, 12s. per 100.

BEDDING VIOLAS.—Admiration, Amabilis, Brilliant, Golden Gem, Duke of Edinburgh, Golden Perpetual, Greivei, Multiflora, Mulberry, Purple Prince, Sovereign, Sir W. Scott, and Waverley, 1s. 6d. per dozen, 10s. per 100 ; Pilrig Park, 2s. per dozen, 15s. per 100—this is the best white.

100 fine Bedding Violas and Pansies, our selection, twelve varieties, 10s. 6d.

	Per doz.		Per 100				Per doz.		Per 100	
	s.	d.	s.	d.			s.	d.	s.	d.
Daisies, red, white or rose ..	1	0	5	0	Primrose, double crimson, very scarce ..15		0	..		
Ajuga variegata..	2	6	..		,, single pink		2	0	12	0
purpurea ..	3	0	..		,, ,, white ..		3	6	..	
Alyssum saxatile ..	1	6	10	0	,, ,, crimson		4	0	..	
Antennaria tomentosa ..	1	6	8	0	,, japonica, of sorts ..		4	0	..	
Arabis alpina ..	1	6	8	0	Phlox verna and frondosa ..		1	6	8	0
fol. var. ..	1	6	8	0	Polyanthus, fine gold-laced seedlings ..		2	6	..	
Aubrietia purpurea ..	1	6	10	0	,, ordinary do.		1	0	5	0
Canterbury Bells	1	0	5	0	,, Black Prince		5	0	..	
Dactylis elegantissima ..	1	6	8	0	,, Petstead ..		5	0	..	
Sweet Williams ..	1	0	5	0	,, President ..		9	0	..	
Gentiana acaulis	3	0	20	0	,, Rex Theodore ..		9	0	..	
Hepatica, double red and single blue ..	4	0	25	0	,, Cheshire Favourite and Exile.. each		2	0	..	
,, single white and red ..	6	0	..		Sedum acre aureum,					
,, double blue	18	0	..		acre elegans,					
Iberis corifolia ..	1	6	10	0	glaucum, and					
,, Tenoreana..	1	6	10	0	lydium ..		1	0	6	0
Mentha Gibraltaricum ..	1	0	5	0	Stellarea aurea ..		1	0	6	0
Myosotis sylvatica and dissitiflora	1	0	5	0	Veronica repens..		2	0	..	
Primrose, double white, double lilac, double sulphur ..	4	0	25	0	Sempervivum tectorum ..		1	0	6	0
					,, californicum		2	0	12	0

CATALOGUES of Fruit Trees, Strawberry Plants, Evergreen and Deciduous Trees and Shrubs, Stove and Greenhouse Plants, Florists' Flowers, Bedding and Soft-wooded Plants, Rhododendrons and Plants for Forcing, Roses, &c., on application.

WM. CLIBRAN & SON,
OLDFIELD NURSERY, ALTRINCHAM.

GEORGE COOPER, the County Seed Establishment, Hertford, begs to offer the following, of the choicest stocks, to the Trade. Special prices on application :—

BEET, Red, Cooper's Excelsior.
BROCCOLI, Hill's June.
CUCUMBER, Improved Telegraph.
PARSLEY, Curled, Cooper's Matchless.
SWEDE, Cooper's Improved Large Purple-top.
TURNIP, Improved Aberdeen Green-top Yellow.
ONION, White Spanish.
,, White Globe.
,, Bedfordshire Champion.
CELERY, Cooper's Improved White.
The above cannot be excelled for quality.

FOR SALE, a fine PALM, SEAFORTHIA ELEGANS ; height 8 feet, diameter 8 feet, leaves six.—For further particulars apply to GEORGE OLIVER, The Gardens, Hanbury Hall, Droitwich, Worcestershire.

Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices :—

ALDER, 4 to 5 feet, fine, 20s. per 1000
ASH, 2 to 2½ feet, fine, 20s. per 1000
,, 3 to 5 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
CHESTNUT, Horse, 6 to 8 feet, fine heads, 60s. per 100
,, Scarlet, 6 to 8 feet, fine heads, 100s. per 100
ELMS, Canadian, 8 to 10 feet, clear stems, with good heads, 100s. per 100
,, English (upright), 6 feet, clear stems, with good heads, 120s. per 100
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 50s. per 100 ; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100 ; 8 to 10 feet, fine, 12s. per 100
,, Lombardy, extra fine trees, 8 to 10 feet, 20s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
,, ovalifolium, 3 to 4 feet, 50s. per 100
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, strong, 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
APPLES, fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100
CATALOGUES of General Nursery Stock on application.

To the Trade.

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff :—
ROSES, Standard, 75s. per 100.
,, Dwarf, 30s. per 100.
APPLES, 2-yr. untrimmed, 50s. per 100.
PEARS, 2-yr. untrimmed, 50s. per 100.
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. to 30s. per dozen.
,, fine Maidens, 50s. per 100.
,, 1-yr. cut-back, 30s. per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 7os. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
,, NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
PINUS CEMBRA, 4 to 5 feet, 60s. per 100.
THUJA AUREA, 1 foot, 40s. per 100 ; 1 to 1½ foot, 60s. per 100.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen.
52, Market Square, Northampton.

1000 Bulbs for 20s.

MY COLLECTION of BULBS for the Flower Garden, containing 1000 sound, well-ripened roots of HYACINTHS, TULIPS, NARCISSUS, CROCUS, and SNOWDROPS, package included, forwarded on receipt of Post-office Order for 20s.
JOHN ROBSON, Altrincham, Cheshire.

The Cirencester Nurseries.

ROBERT F. DARBY begs to offer the following well-rooted Trees, &c., cheap, for a clearance :—
10 dozen ELMS, fine Chichester, very straight, 16 to 20 feet.
8 dozen LIMES, fine, very straight, 14 to 16 feet.
10 dozen BEECH, fine, very straight, 8 to 10 feet.
4 dozen ASH, fine, very straight, 12 to 16 feet.
500 HORNBEAM, 4 to 5 feet.
300 APPLE, strong bearing, bush, of best kinds.
400 YEWS, English, really good, 4 to 5 and 5 to 6 feet.
4 dozen CUPRESSUS LAWSONIANA, 6 to 8 feet.
Price on application.

PEARS on QUINCE, that have had fruit on them the past season, 12s. per dozen, 75s. per 100.
PLUMS, fine standard, in sorts, 24s. per dozen.
APPLES, fine standard, in sorts, 12s. per dozen ; fine bush do., fruiting, 12s. per dozen.
PLUMS, fine trained, dwarf, 36s. per dozen.
APRICOTS, fine trained dwarf, 36s. per dozen.
GOOSEBERRIES, Ashton, &c., fine, 8s. per 100, 70s. per 1000.
CURRANTS, Raby Castle, red, fine, 8s. per 100, 70s. per 1000.
WALNUT, fine, 6 to 8 feet, 12s. per dozen, 75s. per 100.
FILBERT, fine, 4s. per dozen, 25s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.
THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone ; also at Ashford.

SUTTON'S MAGNUM BONUM POTATO (True).—A limited quantity to offer. £10 per ton, cash.
R. B. McCOMBIE, Christchurch, Hants.

To the Trade.

HOLLIES, Green and Variegated, 1 to 4 feet ; YEWS, 9 inches to 7 feet ; LIMES, 2 to 7 feet ; Portugal LAURELS, 2 to 5 feet ; ASH, 1 to 2 feet ; Spanish CHESTNUT, seedlings. Cash prices and samples on application.
W. TRIGG, Hook Hill, Woking Station.

SEAKALE, stout, 4-yr. old, 2s. per dozen, 10s. per 100, 60s. per 1000.
RHUBARB, Johnston's St. Martin, the finest forcing sort known, 6s. per dozen, 40s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

New Catalogue.

MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for Covers, PLANTS for Winter Bedding,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
Milford, near Godalming, Surrey.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2s. 6d. ; C. Lebanon, 3 feet, 2s. 6d. ; Thujopsis borealis, 5 feet, 2s. 6d. ; Thuja gigantea, 4 feet, 2s. 6d. ; Cupressus Lawsoniana viridis, 4 feet, 2s. 6d. ; Swedish Juniper, 4 feet, 1s. 6d., 6 feet, 2s. 6d. ; Golden Retinospora, 2 feet, 2s. 6d. ; Ericoides, 2 feet, 1s. ; Gold and Silver Hollies, 2 feet, 2s. ; Picea nobilis, 3 feet, 3s. ; Pinsapo, 3 feet, 2s. 6d. ; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s., 5 feet, 5s. ; Limes, 15 feet, 2s. 6d. ; Birch, 15 feet, 1s. ; Chestnuts in variety, 1s. each ; Scarlet Oak, 15 feet, 1s. ; Araucarias, 4 feet, 20s. ; 5 feet, 30s. ; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d. ; Green Hollies 1 to 1½ foot, 25s. per 100.
E. WALKER, Farnborough, Hants.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard :—
PEARS on the Quince and Pear stock.
APPLES on the Paradise and Crab stock.
CHERRIES on the Mahaleb and Cherry stock.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock ; do., trained trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds ; do., in pots for forcing, stout and well grown plants
Descriptive Rose Catalogue free.
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Cultivators of
FRUIT and FOREST TREES
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.



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A SPECIALITY.
Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

LOUIS VAN HOUTTE,
ROYAL NURSERIES, GHENT,
BELGIUM,
Can make a Special Offer of
CAMELLIA ALBA PLENA, very nice bushy plants, with from four to seven buds, at £7 per 100 ; with from seven to ten buds, at £8 per 100.
Also the Best Two White varieties of
AZALEA INDICA — Flag of Truce and A. Borsig—1 foot to 1 foot 4 inches high, and 1 foot head diameter, at 2s. 6d each—well-grown plants.

The Camellias and Azaleas above offered are very suitable for either Table Decoration or Forcing Purposes to cut flowers from.

THE GOLDEN VARIEGATED WELLINGTONIA received Four First-class Certificates, Four First Prizes, and One Large Silver Medal. Planted by the following Royal and Noble hands :—
Their Royal Highnesses the Prince and Princess of Wales, and the Duke of Edinburgh.
Their Graces the Dukes of Devonshire, Leeds, Manchester, and Marlborough.
The Most Noble the Marquis of Waterford.
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The Lords Berwick, Donerailе, Otho Fitzgerald, Hawkshaw, Huntingfield, Kenlis, Poltimore, Powerscourt, Skelmersdale, Wrottesley.
The Ladies Langdale, Russell, Pollen, Rolle, and Tennison, &c.
Grand Specimens, 7 feet, £5 5s. ; splendid plants, 5 feet, £3 3s. ; very fine, 3 feet, £2 2s. ; stout plants, 2 feet, £1 1s. ; nice little plants, 1 foot, 10s. 6d. ; 13 for 12 ; 55 for 50 ; 115 for 100.
R. HARTLAND, The Lough Nurseries, Cork.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

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SPECIALITIES.

ROSES ..... 500,000 Plants on Sale
Standards, 15s. to 24s. per dozen, £6 to £9 per 100
Dwarf Standards, 12s. per dozen, £3 15s. to £5 per 100
Dwarfs, 9s. to 15s. per dozen, £2 10s. to £3 15s. per 100.
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Roses in pots, 10s. 6d. to 18s. per dozen, £3 15s. to £6 per 100
Ditto, prepared for immediate forcing, 24s. to 42s. per dozen, £7 10s. to £15 per 100
Roses on their own roots, 9s. to 15s. per dozen, £3 3s. to £5 per 100

BULBS ..... Hyacinths, 4s. per dozen, 25s. per 100, and upwards
Tulips, 9d. per dozen, 4s. 6d. per 100, and upwards
Crocus, 2s. per 100, 17s. 6d. per 1000, and upwards
Polyanthus Narcissus, 2s. per dozen, and upwards
Snowdrops, 2s. 6d. per 100, and upwards.

CAMELLIAS ..... Young plants, with bloom, 30s. per dozen, and upwards. Specimens from 21s. to £30 each.

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Pyramids, 18s. to 42s. per dozen, £6 to £10 per 100
Dwarfs, 9s. to 15s. per dozen, £3 3s. to £5 per 100
Espaliers, 30s. to 42s. per dozen
Dwarf-trained Peaches, Apricots, and Nectarines, 42s. to 60s. per dozen
Standard-trained ditto, 7s. 6d. to 10s. 6d. each.
Fruit trees in pots, 36s. to 84s. per dozen
Figs in pots, 24s. to 42s. per dozen
Strawberries, 3s. 6d. to 5s. per 100
A large number of handsome fruiting trees of various kinds in stock.

GRAPE VINES.... Fruiting Canes, 7s. 6d. to 10s. 6d. each; Planting Canes, 30s. to 60s. per doz.

EVERGREENS.... For planting new, or replenishing old gardens. Prices furnished on application, as these vary greatly.

PARK and ROAD-SIDE TREES Limes, Planes, Maples, Ash, Beech, Birch, Oaks, Poplars, Chestnuts, &c. Prices furnished on application.

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CATALOGUE of NURSERY STOCK,
INCLUDING
FRUIT TREES, FOREST TREES,
HARDY CONIFEROUS and TAXACEOUS PLANTS, EVERGREENS,
DECIDUOUS ORNAMENTAL TREES and SHRUBS,
HARDY CLIMBERS,
ROSES, &c.,
Is now ready, and will be sent free on application.
The Nurseries,' Huntingdon.

Large Spruce, Mulberries, Aucubas, &c.
THOMAS BUNYARD AND SONS have extra fine large specimens of the above to offer, cheap; well-rooted.
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H. CANNELL begs to announce that he has a very large Stock of fine Plants of MYOSOTIS DISSITIFLORA (Forget-me-not); White IBERIS, 8s. per 100.

Dahlias.
H. CANNELL, F.R.H.S., begs to announce that he has harvested a large quantity (400 varieties) of POT ROOTS this season, in the finest possible condition which can now be dispatched to the furthermost parts of the world in perfect safety. Purchaser's selection, 12s. to 24s. per dozen; H. C.'s selection, 9s. per dozen, 60s. per 100.
The Home for Flowers, Swanley, Kent.

HARRISON AND SONS, Royal Nurseries, Leicester, have the following stocks, all well-grown and healthy trees; will be pleased to send sample and quote prices for large or small quantities of any:—
5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 6 inches to 3 feet.
10,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
20,000 large trees for immediate effect, consisting of LIMES, ACACIA, BIRCH, ELM, POPLARS, SYCAMORES, &c.

ROSES, fine standard, from 15s. to 18s. per dozen, £5 per 100.
" fine dwarf, for beds, 9s. to 12s. per dozen, 60s. per 100.
" fine Tea, in pots, 12s. to 18s. per dozen.
" fine specimen, in 8-inch pots, for forcing, &c, 30s. per doz.
" fine dwarf, Gloire de Dijon, 9s. to 12s. per dozen, 75s. per 100.
The above Roses cannot be surpassed, and the stock consists of upwards of 20,000.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

QUEEN OF LILIES, LILIUM AURATUM. —Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6d.; No. 2, 1s.; No. 3, 1s. 6d.; No. 4, 2s. each.
ORCHIDS.—Special offer of the following fine Orchids, for £5 5s.:—1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum giganteum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Limatodes rosea.
All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to
WILLIAM GORDON, 111, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

Planting.
GREAT BARGAINS for Clearance.
A quantity of Rhododendrons, 3 to 4 feet and under; Abies Albertii, Cupressus Lawsoniana, Thuja Lobbii, Wellingtonia gigantea, all from 4 to 8 feet, in capital order for removal. A large quantity of Tritoma uvaria, fine Pyraminal Pear and Apple Trees. Lowest prices quoted on application. Good Turf for Lawns (within 200 yards of Railway Station, S.W.R.), 5s. per rod if cut by purchaser. Apply to
J. D. CRAIG, The Nursery, Camberley, Farnborough Station.

A Few Thousands of
CAMELLIAS and AZALEA INDICA, fine plants with buds, at low prices (on application).
COCOS WEDDELLIANA in single pots, 12 inches high, 30s. per dozen.
ARECA BAUERI, 12 inches high, 30s. per dozen.
Apply at once to
JEAN NUYTENS VERSCHAFFELT, The Nurseries, Ledeberg, Ghent, Belgium.

To the Trade.
JAMES BETTERIDGE, having determined to distribute his celebrated Quilled ASTER SEED this season himself and not through Messrs. Carter & Co., begs to inform the Trade that, having harvested his Seed in very good condition, he is prepared to supply the Trade only. Also his new varieties which have taken First-class Certificates at the Crystal Palace, Banbury, and Reading Shows. Terms on application to
JAMES BETTERIDGE, Aster Nurseries, Chipping Norton, Oxon.

SPECIAL OFFER TO THE TRADE.—SURPLUS STOCK on SALE, as the land must be cleared for building purposes; all fine healthy plants, many times transplanted.

FRUIT TREES.
CHERRIES, Standards, extra strong, 9s. per dozen, 60s. per 100; half do., do., 6s., per dozen, 45s. per 100.
PEARS, Pyramids, 3 to 4 feet, extra strong, 5s. per dozen, 30s. per 100; Half-standards, 4 to 5 feet, strong, 7s. per dozen, 50s. per 100.
CURRANTS, Black Naples, fine, strong, 8s. per 100, 70s. per 1000.

FOREST TREES.
BEECH, 4 to 5 feet, strong, 8s. per 100; 5 to 6 feet, 16s. per 100; 6 to 8 feet, 25s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUTS, Horse, 6 to 8 feet, strong, 16s. per dozen; 8 to 10 feet, 25s. per 100.
" " Scarlet, 5 to 6 feet, strong, 8s. per dozen; 6 to 8 feet, 10s. per dozen.
LIMES, 2 to 3 feet, strong, 4s. per 100; 3 to 4 feet, 6s per 100; 4 to 5 feet, 10s. per 100; 5 to 6 feet, 15s. per 100; 6 to 8 feet, 25s. per 100; 8 to 10 feet, 60s. per 100.

EVERGREEN SHRUBS.
BOX, Green, 1 to 1½ foot, 2s. per dozen, 12s. per 100.
RHODODENDRONS, 6 to 9 inches, 8s. per 100; 9 to 12 inches, 12s. per 100.
" fine and bushy, 1 to 1½ foot, 20s. per 100; 1½ to 2 feet, 25s. per 100.
YEWS, English, 9 to 12 inches, 10s. per 100; 1½ to 1¾ foot, 12s. 6d. per 100; 1 to 2 feet, 16s. per 100; 2 to 3 feet, 25s. per 100; 3 to 4 feet, 45s. per 100, and 9s. per dozen.
B. WHITHAM, Nurseries, Reddish, near Stockport.

RICHARD SMITH & Co. WORCESTER

FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea-scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*," and RICHARD SMITH & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6d. each. Maiden Trees, 12s. 6d. each; Bushes, 3s. each; Standards, Pyramids, and Dwarf-trained Trees, 3s. 6d. and 5s. each.

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LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST of STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for a penny stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for a penny stamp.

ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

RICHARD SMITH & Co. WORCESTER

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.
Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9-inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

CRANSTON & CO.,
NURSERIES, KING'S ACRE HEREFORD.



WM. PAUL & SON,
(Successors to the late A. Paul & Son, Established 1806,)
ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
HERTS,
Adjoining the "Waltham" Station, Great Eastern Railway.
Inspection of Stock invited.
Priced Descriptive Catalogues free by post.

SEAKALE, ASPARAGUS AND RHUBARB. —Roots for forcing, exceptionally fine. For special quotations apply to
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SATURDAY, NOVEMBER 16, 1878.

A WEEK AT THE LAKES.

AUGUST 22, 1878, will be an ever-memorable day to me as that on which I first "went North," though my destination was no nearer the Pole than Grange-over-Sands, on the shores of Morecambe Bay. One drawback there was—and only one—to the pleasures of my journey: the train went a little too fast for botanical observation. On little branch lines in the South of England I have often made goodly floral catalogues as leisurely as from the seat of an Irish car; but this is a taste not to be cultivated on the North-Western. We live in a go-ahead age. Some few notes, however, I did make. Harvest was in full progress on the chalk slopes of Hertfordshire, diversified with fields red with as fine a crop of Clover as one could wish to see. The fine Beeches of the chalk were not more striking than the numerous fine "hedgerow Elms" of the more loamy districts, whilst the Oaks attracted attention as being still in a growing state, showing young ruddy leaves, as they have done ever since the early spring.

There seemed but few wild flowers to interrupt the beautiful verdure of what may be called the Valley of the Grand Junction Canal, save a few clumps of white-trumpeted Bindweed in the hedges, and patches of golden Ragwort. Not till I reached Roade did I see the Codlins-an'-cream (Epilobium hirsutum) decking the cutting of blue liassic limestone, and further on still I passed an Alder-hung stream bright with purple Loosestrife. Near Blisworth I was much struck by a combination of the Mountain Ash and some Furze bushes—orange fruit amid bright and graceful green foliage, borne on a silvery stem rising from a blue haze of Thorns. North of Nuneaton I realised the truth of Loudon's remarks on the distribution of Elms—our English Elm becoming scarce; whilst from Lichfield, and especially round Rugeley, the drooping Wych Elm everywhere prevailed. On the triassic sandstones of Staffordshire and Cheshire pink Ling, mauve Knautia, and Furze in full bloom were set against a background of the glossy leafage of some of the finest brook-sheltering Alders I have seen, though the far larger size of this tree throughout the north-west has impressed itself on me as much as anything.

To a geologist the whole journey was of the greatest interest. It was interesting to note the varying "angle of repose," or embankment slope, of London clay, chalk, Linslade iron-sand, Oxford clay and Lias, and the "false-bedding" of the sand at Whitmore. The interest culminated when we changed at Carnforth, where excavations were in progress, and heated labourers were laying down iron rails on the spot on which some old glacier seemed to have shot its ice-born rubbish—a clay formation full of chalk-like boulders highly suggestive of a moraine. Here we first saw the step-like contours of the dome-shaped hills of carboniferous limestone, and soon we were in sight of one of the most gigantic evidences of marine denudation in the kingdom—the sand flats of Morecambe Bay. There, at the foot of the varied hills, some densely wooded to their summits, others bare sheep-walks mapped out by long lines of grey wall, lay the flat miles of sand. Some small porton reclaimed, bore a mixture of reeds and coarse grass, or, further inland, even a little corn; but there were miles upon miles of bare fawn-coloured sand, broken here and there by an irregular, winding streak of blue water, just dotted with white clusters of Sea Campion.

GRANGE-OVER-SANDS.

Grange-over-Sands is the Pisgah of the Lake district, though certainly it has a great advantage over its prototype in hotel accommodation. The village itself, once the site of the rich granaries of Furness Abbey, may now be said to consist chiefly of the hotel. Here, on the side of a thickly wooded hill, and facing a series of similar hills, is an abode of luxurious comfort, filled with the entertaining varieties of the species tourist, many preparing to invade Lakedom, many returning from the task; task it would seem to be, as they speak with much glee of having "done" it. The French Academy has not, I fear, done much to protect their language from slang, or I would pray for an English academy were it only to suppress the touristic use of the verb "to do."

Grange is essentially for the pedestrian. To climb through the woods of Fir, Ash, Sycamore, and Oak up to a little cairn of bare, grey limestone-rocks with its crannies filled with Asplenium trichomanes, Ruta-muraria, Hart's-tongue, Polypody, and Herb-Robert; to turn from the trim wind-clipped Juniper bush at your feet and look to the intensely blue mountains of the English Switzerland on the one side, or away over the bay, where the clouds and sunshine tint sand and water with every shade of brown, purple, blue, green, and silver; to toil up to the plateau of Hampsfield Fell, or over the hills to the quaint little town of Cartmell—this is to see the beauty of Grange.

These two last-mentioned spots we must not dismiss so curtly. The limestone table-land of Hampsfield Fell, in some places covered with a coarse tussocky grass, and elsewhere exposing sheets of deeply-fissured and grooved rocks, bare and level—or rather with one uniform slope as left by the great ice-plane—strongly reminded me of accounts, now of the wilds of the Falklands, now of a veritable *mer de glace*. In the deep fissures I found Polypodium calcareum, familiar on waste spots on the Cotteswolds. From a quaint little tower, christened the "Hospice," a prominent figure in the varied beauty of the landscape was the village of Cartmell, clustering round its old Priory Church, which I visited on the 24th.

HOLKER HALL AND CARTMELL.

We went by train to Cark, and walked past many a model cottage with Honeysuckle and Clematis-decked porch, and the gayest and tidiest of gardens, to the park of Holker Hall the seat of the local king, the Duke of Devonshire. Here a pale red-stone mansion of modern French style, stood out in strong contrast to the prevailing sycamore-green of the wooded background, whilst our attention was more particularly arrested first by a fine, well-grown Araucaria, and secondly by a lovely group of fallow deer reposing under Spanish Chestnuts and Sycamores—a colour-combination of subdued tone which we coveted the power of transferring to canvas.

Through a beautiful lane hung with various Ferns, over some planted hills, where Rhododendrons and Cryptomerias looked incongruous among Larch and Oak, across a few fields, and we reached the curious little town of Cartmell. Surrounded by fields which stretch at the foot of the down-like hills of Hampsfield, Cartmell appeared as if its wide market-place, flanked with numerous inns of fallen greatness had not held a tourist since the "good old coaching days." Yet the parish church, once a priory of Augustinian Canons

Regular, has been thought worthy of a bulky archæological octavo, the *Annales Caermolienses*. Of the Priory we were at once reminded by the fine old gateway, now leading to the stables of the "Cavendish Arms," and its lower half converted into a shop. The tracery of the windows remains over the single archway, and the structure is very similar to the Close gates of Salisbury, the College gates of Maidstone, or that of the Abbey of St. Albans. The west end of the cruciform Priory Church —the sight of the town—now draped in Pellitory, picked out with wall Rue, showed evident traces of a former connection with monastic buildings.

The most prominent external features of the fine old pile are the tower, which has the peculiarity of having its upper half placed diagonally across the corners of the lower, and the east window, as large as that now lost from Furness, little more than half its area being occupied by the two rows of nine fine lights. It is 45 feet high and 24 feet broad, and the interweaving of its curving lines of stonework are a poem in themselves. In it are some beautiful fragments of stained glass, rich canopywork and figures of sainted bishops in crimson chasuble bearing rich crozier. The south door is a fine dog-toothed Norman arch, and in the chancel are four other round arches of this period very richly carved, but the four great arches of the central lantern, where the transepts meet the nave and choir, are pointed like those of Furness, which they slightly exceed in height. As the choir is said to have been roofless from the Dissolution to 1640 it is hardly to be wondered at that the oak stalls are somewhat damaged or that the incumbent should have invested in what is perhaps the oldest umbrella now in England—a huge and ponderous tarpaulin "gamp," that no church dignitary either would or could wield single-handed in our degenerate days. The carvings on the stalls and their *miserere* seats, veritable stools of repentance, are very similar to those at Gloucester, and may interest even the naturalist. Animals were the *forte* of the artist, so, besides various conventional ornaments—Roses, goblins, &c.—we have a hunting-scene of a stag and two dogs, the head of a holy bull (probably that of the Nativity), that ancient emblem the elephant and castle, and the "Asian mystery," the spiral-horned unicorn, a porcupine, a peacock, a dragon with his head in a large "gin," a pelican, and an imaginary "combination" of the day—a full face, the ears of which form the noses of two profiles. Lastly, there is a king betwixt two dragons. Now this group occurs three times at Gloucester. What is its story? The *Gardeners' Chronicle*, or any other literature, should have existed in the fourteenth century to be truly valued. This is well shown at Cartmell by the handsome and elaborate tomb of Sir John Harrington of that date, at the base of which are represented in stone groups of monks reading, three to a book! The local thirst for knowledge in the seventeenth century caused the collection of a most interesting library of books, now in the vestry. Among these—joy to bibliophiles!—is a copy of the second part of the *Faërie Queen*, printed for William Ponsonby in 1596. The oldest work is a medical treatise by Bernardino de Monte Serrato, printed at Venice on the *nones* of August, 1494. There are several other fine black-letter books—*St. Augustine*, De Lira's *Vulgate*, Bacon's *Historia Naturalis*, Sir Thomas More's *Epigrams*, and the works of King Charles the Martyr. Before leaving a building of so much and so varied interest our comparative memory was once more called into play on learning that the south chancel is called the "town choir" and the north the "piper choir." The priory churches of Austin canons often had a part thus set aside for parochial use, as in the south aisle of Dorchester, near Oxford.

Furness Abbey.

If the east window of Cartmell be a sonnet in stone, at Furness a perfect oratorio stands frozen into stone. But no—instinct with music as it is, there is no idea of frost in the warm red of the triassic sandstone of the Vale of Nightshade. Built of stone quarried on the spot, many a moulding, carved by the Benedictines perhaps in the twelfth century, remains as sharp to-day as on the day it was cut. The naturally curving grain of the stone has been frequently taken advantage of in the simple and yet gracefully designed ornamentation, whilst nought could ever surpass in colour the blending of the terra-cotta-like red with bright green Ivy and the more sombre blue-green background of Sycamores. In the cloisters are holes which the guide informed us were for the beams of the "verandah!" Here, too, we saw, much eaten of slugs, the sole surviving Atropa, last scion of the noble race said to be commemorated in the old name of the valley—Bekansgill, and by various sprays of very dubious botanical affinity, which figure on the Abbey seal as affixed to the fatal deed by which, in 1537, Abbot Roger Pele and twenty-eight monks surrendered the Abbey to Henry VIII.—a deed now in the British Museum. Both Atropa and Hyoscyamus are by no means uncommon in the district, and we need hardly assume for them a monastic origin. *G. S. Boulger.*

(*To be continued.*)

ON THE GENUS MASSOWIA.

In 1832, Schott, the well-known monographer of the Aroideæ, founded in his first work on this family (*Meletemata*, p. 22) the genus Spathiphyllum, including in it two species of widely different external aspect, namely, Dracontium lancæfolium, and a previously undescribed plant, which he called Spathiphyllum sagittifolium. Towards the end of the fourth decade, and in the beginning of the fifth decade of the century, I had exceptional opportunities for studying living flowering Aroids, which resulted in my becoming very fond of the plants of this family, and paying special attention to them, and finally in my resolving to write a monograph of them. The botanic garden of Berlin, and the royal garden of Potsdam, together with the collection of M. Augustin, a zealous amateur, offered me such a wealth of material as could be found nowhere else at that period, and such as has not existed elsewhere since. To M. Augustin especially I was greatly indebted, inasmuch as his wide connections enabled him to obtain all the Aroids in cultivation at that time for his collection. At that period, too, Warscewicz, the celebrated plant collector in Tropical America, was sending, independently of other classes of plants, a large number of Aroids. Under these favourable circumstances I was able in the course of a few years to publish hundreds of new plants belonging to this important and interesting family.

But to return to the genus Spathiphyllum. There was no doubt that the two species Schott had referred to this genus could not be made congeneric without doing violence to Nature; hence the necessity for establishing a new genus for one or the other of them. As it appeared to me that S. sagittifolium agreed better with Schott's diagnosis of Spathiphyllum than S. lancæfolium, I founded in 1852 the genus Massowia, in honour of M. Massow, Inspector-General of the Royal Gardens, to whose liberality in permitting me the use of these gardens I was much indebted for a plant known in gardens, and figured in the *Botanical Magazine*, t. 603, as Pothos cannæfolia (see *Botanische Zeitung*, vol. x., p. 277).

A year afterwards Schott confirmed my view that Spathiphyllum lancæfolium and S. sagittifolium were types of two distinct genera. Dracontium cannæfolium, Jacq., or Pothos cannæfolia, *Botanical Magazine*, notwithstanding the good figure quoted, was probably quite unknown to Schott, for his Monstera cannæfolia is, on his own showing, Rudge's plant, now Philodendron Rudgeanum, Schott. Instead of accepting my published and described genus Massowia, as he should have done according to all the rules of priority and custom, he retained my Massowia in Spathiphyllum, and established the new genus Urospathum [no doubt a slip of the pen for Urospatha] for the other species designated by me as belonging to Spathiphyllum. I believe I am perfectly justified in claiming priority for my genus published the previous year. What would be said if somebody suddenly conceived the idea of retaining the name Pothos for the old Pothos cannæfolia and its allies, and as a consequence proposing a new genus for those species now recognised by science as constituting the genus Pothos?

Now with reference to the two species exhibited at the Ghent International Exhibition last spring as Anthurium Dechardi and A. candidum. The former was sent by M. Linden, and had already been figured and described under this name by my honoured friend, M. Ed. André, in the *Illustration Horticole*, t. 269. The other was from M. de Smet, Ghent, who received it from Mr. William Bull, of London, though I sought in vain for this name in his catalogue.

1. *Massowia Dechardi*, Koch.—Folia breviter petiolata; spadix cylindratus, spatha triente parte brevior, breviter pedunculatus; flores tetrameri; germen apice depressum, perigonio inclusum, stigmate trifido coronatum.

A distinct species, easily distinguished from all other species of the genus. The short petiole, such as no other species possesses, terminates in a large erect blade, which differs from that of all other species, inasmuch as its greatest breadth is not in the middle, but in the upper third, from which point downwards it narrows gradually into the petiole. The spadix is 2 inches long, seated on a stalk three lines long; and it is two-thirds of the length of the spathe, which is at first deflected though afterwards erect, and of a dazzling white inside.

M. Ed. André discovered this interesting and beautiful plant in New Grenada; and to him we are also indebted for its introduction. As already mentioned, I first saw it at Ghent, in the spring of the present year; and I there had some conversation with M. André respecting its true position.

2. *Massowia Gardneri*, Koch; *Spathiphyllum Gardneri*, Schott; *Anthurium candidum*, Hort.—Folia longissime petiolata; spadix cylindratus, dimidio spatha brevior; pedunculo ad apicem sensim crassiore; flores hexameri; germen apice depressum, periogonium longitudine æquans; stigmate trifido coronatum.

I have no doubt that my plant is the same as that imperfectly described as Spathiphyllum Gardneri by Schott in his beautiful work, *Aroideæ*. It is greatly inferior in beauty to M. Dechardi, a circumstance which may have caused Mr. William Bull to take no further notice of it. But it deviates in so many of its characters from the other species of the genus that it should find a place in every collection of Aroids. The elliptical-lanceolate blade of the leaf is about 7 inches long by 15 lines broad below the middle, and borne on a petiole equally as long or longer. The relative proportion of petiole and blade is incorrectly represented by Schott. The slender peduncle is much longer than the spathe, which is 2½ inches long by half an inch in diameter. The spadix is borne on a stalk about 3 lines long, and it is slightly curved upwards. The flowers are described in the above diagnosis. *Karl Koch, Berlin.*

TWO NEW LILIES.

Lilium maritimum, *Kellogg, Proc. Calif. Acad. Sc.* vi., p. 140.

"Leaves alternate or rarely verticillate, chiefly clustered near the base, narrowly oblong-lanceolate, subobtuse narrowing into a short petiole, 3-nerved (intermediate or secondary nerves obscure), margins scarcely a little scaberulose, quite glabrous throughout, upper cauline successively diminishing to minute linear-lanceolate, sessile leaves, barely ¼ inch long. Peduncles elongated, terminal. Flowers few (1—3), somewhat nodding, short, or equilaterally obconic-campanulate; segments lanceolate, slightly revolute, equal; style short, straight."

This differs essentially, according to Dr. Kellogg, from L. canadense, its nearest kin in the stamens being included. It is a small-flowered maritime Lily, found in low peaty meadows, exposed to the bleak, foggy climate of the coast of California near San Francisco. The flowers are deep reddish orange-brown, spotted dark purple inside.

The following is quite unknown to us, therefore we give Dr. Kellogg's account of it entirely.

Lilium lucidum, *Kellogg, l.c.*, p. 144.

Leaves whorled, scattered below and above, lanceolate or ovate-lanceolate, very short, petioled or subsessile, pseudo-triplinerved or somewhat 3-nerved, smooth throughout, short peduncled. Flowers four (or 1—6), nodding, sepals sessile lanceolate, strongly turbinate-revolute, thickened at the base; stamens and style exserted, about equal; style straight, thick, light translucent yellow-orange, the dark purple spots on the inside visible from without. June to August.

Bulb spheroid, or slightly depressed oblate-spheroid; scales thickened, lanceolate acute, strongly incurved and very closely appressed, whitish, with a yellowish green tinge, 1½—2 inches in diameter, isolated, perennial; stem central, 2—3 feet high, quite glabrous throughout; shortish thick peduncles from axils of bracteoid leaves, lower and larger leaves 1—1½ inch wide, about 3—4 inches long, diminishing above; flowers 1½ inch in expansion, 1 inch deep; style ½—¾ inch long.

A Lily from Oregon and Washington Territory, long known, but also considered by authorities as a variety of L. canadense. Without recapitulating, the isolated and peculiar bulb, the position of stem, form and colour of flower surface, equal genitalia, &c., we take these to be constant characters. Indeed the very revolute sepals remind us more of L. superbum than canadense, while the smaller, closer flowers, and thickened base are peculiar.

DO LEAVES ABSORB WATER?*

The question whether the green parts of plants can or do absorb moisture by their surfaces, as rain and condensed dew and mist, or even watery vapour, has been a subject of controversy for the last 150 years, but will, I hope, be now set at rest for ever.

History of the Question.

Hales describes an experiment (*Veg. Stat.* xlii., 1731) of placing one branch of a leafy bough in water while another branch of the same was in air, and he found they kept fresh for a much longer time than similar boughs not supplied with water at all. He thence inferred:—"This shows how very probable it is that rain and dew are imbibed by vegetables, especially in dry seasons."

This experiment has been often repeated in various ways, as by Bonnet in 1753, as well as with detached leaves laid on water, and again by myself, and always with the same result; hence Bonnet and others have came to the same conclusion as Hales.

However, several physiologists, including De Candolle, asserted (and that very positively, though they do not seem to have tested it) that Bonnet's leaves kept fresh because transpiration was stopped by the water under the leaf. Had they tried the simple experiment of fixing watch-glasses on floating leaves they would have at once proved that transpiration does go on as before; hence the freshness retained was due to the absorption from below being sufficient to balance the transpiration from above.

Duchartre, in 1856, experimenting on the absorptive power of plants in a saturated atmosphere, came to the conclusion that they could not absorb vapour, but added, "If leaves are deprived of the means of absorbing watery vapour suspended in the air, in compensation they possess the faculty of absorbing liquid water which moistens them, and which in Nature is derived from rain, and from condensed dew and mists."

In 1857 Duchartre abandoned this belief, and appears to be responsible for the change of opinion now held by other physiological botanists, as Sachs. Duchartre exposed growing plants to dew with the pots and earth protected; having first weighed them at 6.30 P.M. He weighed them again when covered with dew at 6.30 A.M., and then, having carefully wiped off the dew, or else waited till the dew had evaporated in a dark chamber, he weighed them a third time, and, as a rule, found their weights to be about the same as they were at first. Similar results followed like experiments with rain; hence he drew his conclusion that rain and dew were not absorbed.

Criticism of Duchartre's Inferences.

Since it has been repeatedly proved that transpiration is almost entirely checked by darkness, and by the deposition of moisture on the leaves, and since root absorption does not cease at night—for the temperature of the earth is not appreciably lowered—it is obvious that the tissues must become as turgid and saturated as they possibly can do, therefore that no external moisture would be absorbed is no more than what might be expected; but to infer from this that dew is never absorbed is highly illogical, and for the following reasons:—First, that the green parts of plants can absorb moisture has been proved almost *ad nauseam* by all experimenters, including Duchartre himself, from Hales to Boussingault (1877), and myself. Secondly, whenever portions of plants perfectly healthy but slightly faded by being gathered a few hours before are exposed to dew [or moist vapour in a collecting box], or when entire and growing plants, wilted through great heat and dryness, are exposed to dew (Boussingault), they invariably increase in weight, sometimes to nearly 50 per cent., by surface absorption alone. This proves, therefore, that in exceptional circumstances, in which transpiration exceeded absorption, dew is absorbed by all the green parts of plants. And what applies to dew applies also to rain and artificial watering. Thirdly, having proved that if one part of a leaf, or only a portion of one surface, be kept wet, the other part keeps fresh for various lengths of time; or when some leaves are in and others out of water, the latter are supported by the former; therefore, the conclusion I draw is that there is nothing to disprove the assertion that as soon as the sun rises and leaves begin to dry, then transpiration recommences; and the moment an efflux is set up anywhere, an influx will immediately take place in adjacent parts, and so surface absorption will supplement root-action.

In addition to mere water, Mr. Honeyman's observations (*Gardeners' Chronicle*, February 9, 1878, p. 181) show that leaves appear to absorb nutritious matter dissolved in water; and M. Boussingault has lately proved that leaves can readily imbibe salts dissolved in water (*Annales de Chimie et de Physique*, vol. xiii., p. 362), and this at once leads us to infer that ammoniacal salts brought down by rain can thus largely invigorate plants by being absorbed by the surfaces of their leaves.

Mr. Henslow's Experiments.

In support of the preceding statements I have been for some years conducting a large series of experiments to ascertain to what extent the green parts of plants can imbibe water, as follows:—

1. *The absorption of water by internodes.*—The experiment consisted of wrapping up one or more internodes of herbaceous plants in saturated blotting-paper, and in noting the effects. As a rule the leaves on the shoots rapidly perished, showing that transpiration was too great for the supply. The stems, however, kept fresh for different periods up to six weeks.

2. *Absorption by leaves to see how far they could balance transpiration in others on the same shoot.*—The general result is that as long as the leaves remain green and fresh in or on water, they act as absorbents; but that the leaves in air keep fresh or wither according as the supply equals or falls short of the demand.

3. *To test how far leaves on a shoot can nourish lower ones on the same.*—It appears that it is quite immaterial to plants whether they be supplied with water from the absorbing leaves being above or below those transpiring. Water flows in either direction equally well.

4. *Leaves floating on water.* — This experiment repeats Bonnet's, and I found that one part of a leaf can nourish another part for various periods though the edges out of water died first.

5. *Absorption of dew.*—A long series of cut leaves and shoots were gathered at 4 P.M. one day last September, then exposed to sun and wind for three hours, then carefully weighed and exposed all night to dew. At 7.30 A.M., after having been dried, they were weighed again, and all had gained weight, and quite recovered their freshness, proving that slightly wetted detached portions do absorb dew. Boussingault was fortunate enough to have an opportunity of proving that plants in Nature wilted by intense heat and drought likewise recovered on exposure to dew and rain, but without the water reaching the roots.

7. *Imitation dew.*—Like results followed from using the "spray," by which I could imitate dew exactly.

8. *Plants growing in pots*, and of which the earth was not watered, were kept alive by the ends of one or more shoots being placed in water; *e.g.*, Mimulus moschatus not only grew vigorously and developed axillary buds into shoots but also blossomed. The practical issue of the proof that plants can and do absorb surface moisture is that syringing is not merely beneficial to plants by washing off dust and insects, and by cooling the air, but that the watar is actually absorbed; so that the general practice of gardeners may now be considered as based upon scientific proof.

Preserving Cut Flowers.

Lastly, hints may be gathered as to the best method of preserving cut flowers, since green internodes and leaves can absorb. If in preparing a bouquet some plants have buds upon them, let the stalks be long, and allow a few leaves to remain on and be also immersed in the water, and the buds will then be often found to expand successively. The cut end, to be more absorbent than it otherwise would be, should be again cut off under water. If the blossoms be on a ligneous stem, as of Lilac, then the loss of water by evaporation is greater than the woody stalk can supply, so that in this case the addition of leaves in the water will greatly aid, and retain the bunch of flowers fresh for a longer time. On the other hand, if a blossom be already about to shed its petals, then the additional supply of water furnished by the leaves on the stalk appears to hasten the coming dissolution, and the flower perishes rather sooner than it would otherwise do.

If, however, allowing for exceptions, the above principles be borne in mind that it is a mere question of "supply and demand," and if a little judgment be used, a bouquet can be made to last very much longer, *ceteris paribus*, than it otherwise would do.

One caution is needed. The water must be changed every day, and the submerged leaves must be lightly wiped with a cloth, as by endosmotic action they soon become more or less coated with mucus. No leaves must be in water unless perfectly green and of vigorous growth.

* Abstract of a paper read by the Rev. George Henslow at the Linnean Society on the 7th inst.

DR. AINSWORTH'S ORCHIDS.

Those who live in the neighbourhood of large cities and manufacturing towns, and who are fond of exotic plants, find that none succeed so well as Orchids. The introduction of Lycaste Skinneri and the experiments with that and other species introduced from Guatemala by the late George U. Skinner, Esq., marked an era in the culture of Orchids. Mr. Skinner nearly twenty years ago kept Lycastes and Barkeria Skinneri in his drawing-room in flower from February to May, and from that time certain classes of Orchids have been cultivated under cool treatment with the best results. Those who do not like the steaming atmosphere of an East India house can enjoy their cool Orchids in a temperature of 45° to 50°, or in a Mexican house with a temperature of 50° to 55°, for as a rule Cattleyas are subjected to too high a temperature. I am certain that C. Mossiæ, C. Skinneri, C. Warneri, the labiata and Trianæ sections, and even Lælia purpurata, succeed quite well when the temperature is not above 50° in winter as a minimum. Some persons keep the night temperature of their Cattleya houses as high as 60° at night, but this over-stimulating temperature certainly accounts for the unhealthy condition in which some collections are found; for when a Cattleya does get unhealthy it is almost better to throw it away than to try to get it into good health again.

At Dr. Ainsworth's there are houses for all the different sections. In the cool house I noticed the Odontoglossum cirrosum growing very strongly indeed, and good varieties of this are amongst the most desirable of Odontoglossums; but for one good variety there are at least six bad ones, and a variety will come fine one year and of indifferent quality the next. The spikes, too, run up far too tall to be graceful. A stem nearly a yard long with a tuft of flowers at one end of it is not pleasing. Restrepia antennifera was in flower in the cool house. This pretty little plant ought to be grown in every collection. The flowers are singular in formation and colour. The ground colour is dark red dotted all over with minute black spots. It is easily grown and flowers very freely. Odontoglossum citrosmum, though it may be grown in the cool house in summer, will not remain in good health unless it is removed to the Cattleya-house in winter. There is a very fine specimen here with many growths, and spikes of it have produced fifty-two flowers—truly a noble plant when so grown. Orchids] in flower under Cattleya treatment comprise Lælia peduncularis. This is a

distinct and desirable species, the habit and characteristics of the plant being those of L. acuminata, but the flowers are dark purple. The plant succeeds better on a block than when grown in a pot. Cattleya Schilleriana was also in flower, and is a very useful species though rather difficult to manage. It flowers sometimes twice a year, its usual period being June or July.

Dendrobium crassinode was doing remarkably well here in baskets suspended from the roof. It grows well either in the usual baskets made of Teak wood, or, as I saw it in several places in Lancashire, in shallow perforated basins made of the usual pottery material. In all cases the plants are suspended near the glass. This is a very choice Orchid, and should be grown in every collection, its peculiarly knotted stems being one of its distinctive marks.

In a warmer house, with Vandas, Saccolabiums, &c., were some specimens which are well known at the public exhibitions. In this house was a healthy plant of a Dendrobium seldom seen but well worth growing on account of its peculiar hairy stems. The stems are not more than 6 or 8 inches in length, but the flowers are bright yellow in colour and very lasting. It grows best in small baskets. Dendrobium bigibbum was in flower in this house. The plant was of large size, and its rich purple flowers, though not large, are very pleasing. Phalænopsis Schilleriana was in very good health. It seems to succeed remarkably well in pots with the Vandas. This species succeeds well in a temperature a few degrees lower than that suitable for P. amabilis or P. grandiflora; it will do with a minimum of 55° to 60°. What I noted here was the distinct character of the foliage. No two plants are alike, and it is certainly very attractive even when not in flower. It is a useful exhibition Orchid, but flowers rather early for the flower shows, and it will not do to pinch off the flower-stem with the expectation that another one will be formed later, as would happen in the case of P. amabilis or P. grandiflora. Here also is the Vanda suavis that held the second place to Mr. Wrigley's grand Anguloa Clowesii at the last Manchester Whitsuntide exhibition. The Vanda is certainly a very fine specimen, and had no less than fifteen spikes on it at the time it was exhibited. It is pretty well known that Mr. Mitchel felt aggrieved at the decision of the judges in the case of these two plants, but after seeing both, I would be inclined to award the palm to the Anguloa, as a triumph of cultural skill, and I have no doubt that the judges were influenced to a large extent by the evidence of culture. Exhibitors in a case of this kind would do well to bear silently with a disappointment. They are not the best judges of their own productions, and it would be well for them to remember the fact that a set of experienced judges are more likely to arrive at a right decision than they themselves are. I have alluded to this because the subject was brought up amongst all the Orchid growers about Manchester. There is also a very fine specimen of Vanda Denisoniana with several growths, and the plant is quite 3 feet high from the surface of the pot. It will be interesting to Orchid growers to know that there is also a fine plant of the rare Aerides Schroderi with four growths, and an A. maculosum with a dozen. Odontoglossum vexillarium does very well here. The plants are removed to the Cattleya-house in winter, but spend the summer months in the company of the New Grenada and Peruvian species. It is also worth notice that the pretty and singular Drosera capensis grows freely amongst the live sphagnum in the Orchid pots. *J. Douglas.*

PINUS PARVIFLORA.*

HORTICULTURALLY CONSIDERED, this is a distinct ornamental Pine, of great value. I would not knowingly uphold it at the expense of other ornamental species; but there are so few of these that, owing to their size and general appearance, are calculated to adorn a lawn of moderate dimensions. The majority grow so fast, and attain to such majestic proportions, that they are out of place anywhere except in extensive parks or on mountain slopes; nevertheless, such plants may frequently be seen in small places absorbing, as it were, all smaller objects in their huge proportions, and therefore almost always out of harmony with their narrow surroundings. Fortunately we have in the subject of this note a Pine singularly well adapted for such places. It is of medium size and of neat habit, and its short twisted leaves are of a blue-green colour, which when sunlit gleam like so many silvery threads. This colour is most desirable as a contrast to the green of the lawn and the varied tints of associated foliage. The species is perfectly hardy, and grows freely in moist, loamy, sandy, or peaty soil.

The following description is drawn up from the plant in cultivation:—A medium-sized tree, 25 feet or more in height, with a bluntly pyramidal head and leaden-grey bark, which is roughened by numerous parallel, longitudinal bead-like rows of irregular blisters indicating the resin courses or canals. Branches terete, in closely placed whorls, horizontal, or slightly ascending at the extremities; branchlets numerous, short, tufted, somewhat angular, recurved, young shoots covered but not densely with a short yellowish-brown pubescence, the external bark of these of a shining semi-transparent greenish-yellow, through which the closely placed resin ducts are distinctly observable. Buds, narrow cylindrical obtuse, imbricately covered with numerous small sharply-lanceolate membranous subciliated, oily reddish brown scales that are more or less free, but not recurved at the points, and which afterwards form the bracts or fulcra to the male catkins, or of the adult leaf-buds near the base of the nascent shoots, falling off early in the first year. Leaf-sheaths composed of from 8 to 10 oblong-ovate obtuse, entire, membranous, dry scales which fall off in the first year. Leaves fascicled, in fives, exceptionally in fours, clustered at the extremities of the branchlets, falling off in the autumn of the third year, from 1¾ to 2½ inches long, and ½ line wide in the middle, tapering to both ends, stiff, brittle, incurved, twisted, or on the stronger shoots arched singly or uniformly in bundles, triquetrous, edges distantly scabrous, keel or inner angle rather stout and scabrous towards the point, but never, I believe, below the upper two-thirds, pointed but not acute, back flat or slightly convex, shining yellowish-green, with from one to three interrupted rows of stomata near the extremities, and from four to five rows of silvery-white stomata on each side of the keel. Resin canals two, situated one on each side, immediately over the epidermis of the back. Male catkins very small, sessile, oblong, pink, crowded into a cylindrical spike from 1 to 2 inches long at the base of the nascent shoots; scales auriculed, mucronate, obtuse; anthers two-lobed, opening longitudinally at the back. Cones singly and in whorls of twos and threes; when young, purplish-crimson, erect; when mature, sessile and subhorizontal, from 2 to 3½ inches long, and 1 to 1½ inch wide near the base, straight, oval-oblong, and ovate-obtuse; scales from twenty-five to fifty, ashy-brown, suffused on the exposed parts with a plum-coloured bloom coriaceo-ligneous, 1¼ inch long, and ¾ inch broad, suborbicular, cuneate at the base, rounded on the exposed edge, subincurved at the extremity, with the margins acute and undulated, convex on the back, concave on the inner face, which near the base is deeply hollowed to receive the two seeds; bracts indistinct. Seeds with a bony dark brown shell, ⅝ inch long, and ¼ inch broad, both ends obtuse, thick on the inner, and sharply angular on the outer edge, with a well-marked, short, broad, entire, brown wing, which is straight on the inner, and obliquely rounded on the outer edge. Cotyledons eight to ten.

Indigenous to the northern provinces of Japan from 36° N. latitude to the Kurile Isles in latitudes 44° to 46°, and cultivated in all the provinces of the empire.

It is one of the most distinct species of the section (Cembra) to which it belongs, for although P. koraiensis, its geographical neighbour, bears a close relationship to it, there is, nevertheless, room for several more or less distinct varieties to link them together; and these, so far as I am aware, are non-existent. Seedlings for the first few years are of unusually slow growth. It does very well grafted on P. Cembra, though slightly outgrown by it. *George Syme.*



FIG. 103.—PINUS PARVIFLORA. CONE AND TUFT OF LEAVES NATURAL SIZE.

SARRACENIA PURPUREA.

THIS singular and well-known plant is represented by two or three forms differing considerably in the size of the pitchers, and particularly in the development of the lid, which, in the variety here figured (fig. 104), is much broader and more open than it is in some of the more recent importations that have reached this country. The fine purple shade which it assumes when grown under such conditions of full exposure to the light, as are indispensable to impart to the plant its natural high colour, are present in this to a much greater extent than in the others. It is a native of North America, and can be grown in a cold frame, plunging the pots in winter, or it will succeed out-of-doors when a suitable position is found for it. I saw it during the summer of 1876 with Mr. George Paul, at his High Beech nursery, in the bottom of a hollow, showing the presence of continuous moisture by the patches of Sphagnum, Sundews, and tufts of aquatic grasses. Amongst these plants the Sarracenia was perfect in the form and colour of its pitchers; but they did not attain more than half the size they grow to under glass with medium warmth, showing that to do full justice to the plant it requires to be so treated. It succeeds perfectly under the same conditions of heat, soil, moisture, and light, as do the other species treated of at page 280 of the present volume of the *Gardeners' Chronicle.*

The gardening community as a body are slow to take to any particular description of plants which taste, fashion, or whatever it may be termed, has not made them long and intimately acquainted with.

* Pinus parviflora, Siebold and Zuccar, *Flor. Jap.*, v. ii., p. 27, t. 115 (1842); P. Cembra, Thunberg, *Flora Jap.*, p. 274, non Linn.; Parlatore, in *D C. Prod.* xvi., part ii, p. 404 (1868). A good engraving of the cone of this is given at p. 12 of Murray's *Pines and Firs of Japan. Proc. Hort. Soc. Lond.*, 2, p. 272.

To this may be attributed the comparatively small number of plant growers who have attempted the cultivation of these, and the allied group of Nepenthes. But it is a fact gratifying to those who have long appreciated the beauty, singularity, and above all the wonderful adaptation in form manifest in the plants, that their cultivation is now very much on the increase, and I feel certain that it will further extend as soon as growers fully realise the fact that such subjects as these must be treated in a way that will afford them the conditions indispensable to their existence, in place of attempting to make them conform to the treatment found sufficient for the generality of plants in cultivation. *T. Baines.*

SELECT TREES AND SHRUBS
FOR OUTSIDE WALLS.

(*Continued from p.* 599.)

Rhodoleia Championi.—This handsome shrub is a native of Hong Kong, and somewhat resembles Camellia japonica in appearance, and is said to be of about the same degree of hardiness. It is of an erect habit, with alternate oval leaves, very glaucous on the under-surface, and with reddish petioles. The flowers are borne in heads 2½ inches in diameter, each containing about five and surrounded by a double row of bracts of exquisite beauty, the outer whorl being of a silky brown, the inner of a bright rose colour, and which are produced in early spring. At present it is very rare in gardens, though it has been introduced a long time since, but it will inevitably become as popular a favourite as the Camellia when more common. A small plant is thriving well against one of the walls at Kew, which evidently tends to corroborate its reputed hardiness.

Clematis.—This beautiful genus especially abounds in this region, and it is principally from these that the numerous fine hybrids have been obtained, which from their graceful habit, and the large size, and diversity of colour in their flowers, are pre-eminently adapted for garden decoration either as wall plants or otherwise. The species pure and simple are in themselves very lovely and possess qualities not at present attainable in the hybrids. C. lanuginosa, and azurea, or patens, are good examples of the large-flowered type. The pale yellow C. graveolens (considered by some as a variety of C. orientalis, a native of North-West India), is a highly decorative species, and well suited for a wall plant. Towards the end of summer it is profusely covered with its yellowish blossoms, which are succeeded by the feathery fruit-heads, and afterwards these change to a cottony appearance, and remain on the greater part of winter. C. montana is another Indian species, with flowers about the size of, and much resembling, the pure white Anemone sylvestris; C. campaniflora, Viticella, acuminata, orientalis, florida, cylindrica, the miniature-flowered C. æthusæfolia, and a host of other climbing species, are all very desirable for a general collection. There are two of the erect-growing section that are worth especial notice; though they have deciduous stems, yet they thrive much better against a wall than in the open. C. tubulosa, a native of North China, with deep green trifoliate leaves, and bearing dense whorls of blossoms on the upper portion of the stems, which much resemble in form and colour the common wood Hyacinth, but are considerably larger. C. Davidiana, also from China, a nearly allied species, yet may be at a glance recognised by the narrower leaflets, and more spreading corolla of a deeper hue. Like the last it produces a succession of flowers during the greater part of summer and autumn. For a more detailed account of the species, varieties and hybrids, also cultivation, &c., of this genus, that excellent work, *The Clematis as a Garden Flower*, may be perused with much interest and advantage.



Fig. 104.—Sarracenia purpurea.

Chimonanthus fragrans.—The merits of this fine old garden favourite needs no comment, as it is, or should be, an indispensable adjunct of every collection, be it ever so small. The delicious fragrance of the pale yellow and red blossoms is only equalled among outdoor plants at the season at which it flowers (November till March) by the modest yet beautiful Violets. For all this it has one or two detractive points, as its flowers are stalkless, which is rather inconvenient when required in a cut state, but they last a long while if placed on wet sand. Being deciduous, and not producing leaves until after the flowering season, is another point which is probably the reason why we see them so often planted in obscure corners of the garden. The variety grandiflora has, as its name implies, much larger and more deeply coloured flowers.

Prunus triloba.—There are few deciduous Rosaceous shrubs more desirable for wall decoration than this fine species from China. When trained to a wall it thrives vigorously, producing an abundance of slender shoots, clothed in summer with ovate, coarsely-toothed leaves, and for several weeks in early spring with a profusion of its semi-double blossoms, varying from nearly white through all shades to a deep pink colour, rendering it a very attractive object at that season. It requires the preceding year's growth to be cut back after flowering, or otherwise it would soon become too straggling, and present an untidy appearance.

Kerria japonica.—The double-flowered form of this fine shrub has been a very common object of culture for many years, but not so with the type pure and simple, which is a far more elegant plant, and not introduced till within the last thirty years. It is not of such a stiff habit as the double form, but like it is nearly always in flower. The variegated form is extremely pretty, the variegation consisting of a blending of sea-green, creamy white, and pure white, rendering it very striking and very suitable for a select position against a wall.

Jasminum.—Amongst the Jasminēs there are some valuable decorative species from these parts, such as the fine, winter-flowering, deciduous J. nudiflorum, with its shoots profusely covered with its golden blossoms in the depth of winter. J. multiflorum, a Himalayan species, is a valuable evergreen wall tree, producing an abundant supply of flowers in early summer. J. revolutum, of somewhat straggling habit, but similar in other respects to the last, adds to the bright yellow colour of the flowers a delicious perfume. It is a native of Nepal, and has long been in cultivation. All the preceding are best suited for covering high walls, and should be planted in company with others of a like robust growth. There are several other kinds of Jasmine, but they so closely resemble those mentioned that their enumeration is unnecessary.

Abelia is a genus almost confined to this region, and all the species are very ornamental shrubs—would thrive well under open-air wall treatment. A. triflora inhabits the mountains of North India, and is sometimes found at an elevation of 9000 feet. It is deciduous, with rather small ovate leaves, and produces in May and June a profusion of fragrant pink and white flowers borne in clusters at the tips of the young shoots. A. rupestris is a beautiful trailing shrub found amongst rocks, &c., in the Chamoo Hills of China. It has very slender branches, and small ovate shining leaves. The flowers are borne in clusters at the ends of the young shoots, and are about 1 inch long, with a spreading mouth, and are white delicately shaded with pink. It flowers profusely, and in continuous succession throughout the summer and autumn. A. uniflora is another species from North China, with larger flowers, and also of a low bushy habit. Probably this beautiful species and also the preceding would succeed well, and be more adapted for wall training if grafted on young stocks of A. triflora.

Viburnum.—The Chinese and Japanese representatives of this ornamental genus are not less beautiful than those of other regions, indeed some of the finest are amongst them, such as the large-headed Viburnum, V. macrocephalum, an evergreen with rather small ovate, slightly toothed leaves, and producing in spring immense heads of pure white abortive flowers, which are in some instances nearly a foot through, presenting a quaint as well as an imposing appearance. V. dilatatum, plicatum, and others produce heads of flowers of the same kind, but though much smaller are all valuable for decorative purposes. Those with the ordinary kind of blossoms, such as seen in the common Laurustinus (V. Tinus), are V. Sandangka, a beautiful and little known shrub in cultivation, which inhabits the Loo Choo Islands. It has ovate, shining, evergreen leaves, and rather small corymbs of pinkish white blossoms. It was figured in the *Botanical Magazine* from a specimen which flowered in the Scilly Islands not long ago. V. Awafurki has bold evergreen foliage, the leaves being larger than any of the genus yet introduced, and are of a leathery texture, shining, and a bright green colour, which in autumn changes to various hues. V. odoratissimum is another, remarkable for the pleasant perfume of its small pinkish blossoms.

Akebia quinata is an evergreen climber which was found by Mr. Fortune, in 1845, climbing on hedges, &c., in the island of Chusan, and is remarkable not so much for the attractiveness of its flowers as for their peculiar structure and arrangement. The leaves are composed of five obovate leaflets of a deep green and alternate on the slender twining stems; the flowers were produced in spring in clusters of a dull violet colour and are unisexual, the pistillate flowers being more numerous and small, the others ¾ inch in diameter and but few in the cluster. It succeeds well in the South trained to a trellis or rambling over other shrubs in the open, but when so treated it should be afforded the protection of a mat in winter.

Wistaria sinensis.—Of course this well-known and deservedly popular climber scarcely needs description beyond mentioning that besides being well suited for covering large spaces of wall in a short time, it is admirably adapted to train at the top only, which, when seen in the flowering season is very effective, and does not at all interfere with the wall plant below it. For this

purpose all the branches should be cut away except one of the strongest, and it would soon grow to a length of 100 feet or even more, along the top of the wall. This desirable mode of training is seldom seen in this country.

Trachelospermum jasminoides is the name of a beautiful Chinese climber, generally grown in greenhouses and stoves, probably under either of its better known synonyms, Rhynchospermum, or Parechites Thunbergii. Though generally cultivated in houses it is nevertheless quite hardy with wall protection in the south-west, but does not produce its white Jasmine-like flowers so freely as when grown inside. The variegated form of it is equally hardy, and reminds one of the variegated Euonymus radicans, which is a capital wall plant, also from this region.

Hydrangea.—Japan seems to abound in species of this genus, many of which are old inhabitants of gardens. Neither of the rare or little known species can rival the well-known H. Hortensia with its numerous forms and varieties, with perhaps the exception of the comparatively new H. paniculata grandiflora, a variety having all the flowers of the barren or showy type, which form a dense pyramidal terminal panicle, white, changing to a bright rose colour, commencing to flower in early August, and lasting till after hard frosts. This, with many other species and varieties with less showy flowers, is quite hardy against a wall; but as they do not grow high they are well adapted for growing between those which are apt to become naked at the base, such as Tecoma grandiflora, &c.

Lonicera.—Most of the Honeysuckles are garden favourites, perhaps not so much for the beauty of their flowers as for their delicious fragrance, and good examples of this we find amongst the introductions from this region, as in the case of L. Standishii, which produces its sweet-scented flowers in the dull winter months, and though deciduous and presenting a somewhat naked appearance at this season, it is, however, well deserving of a small portion of a wall, but it is quite hardy enough to stand without it. The variety grandiflora is a decided improvement on the type, as it bears much larger blossoms. L. fragrantissima is another very desirable species for a like purpose.

Cydonia japonica.—This old introduction, though one of the commonest Japanese shrubs we have, should not be omitted on this account, as it has much to recommend it. Its large blossoms, which vary from a deep rose colour to white, are produced more or less profusely throughout the year. Diervilla (Weigela) rosea and its varieties also makes a capital wall shrub, producing an abundance of its showy flowers in early spring.

(*To be continued.*)

HARDY STONECROPS: SEDUMS.

(*Continued from p.* 590.)

** Leaves thick, more or less terete.

+ Leaves sharply pointed.

‡ Flowers yellow or greenish yellow.

25. S. NICÆENSE, Allioni, Fl. Pedemont. iii., 122, t. 90 (1785).

Glabrous. Root-stock thick, woody. Stems 6—8 inches, at first prostrate, afterwards ascending.

Flowering stems erect, 10—12 inches.

Leaves of the barren shoots ⅔, ascending or spreading, ½—¾ inch long, less than ½ inch wide, glaucous-green, reddish when old, ovate-lanceolate or oblanceolate, spine-pointed, scarcely auricled, rounded on the lower surface, mid-rib prominent above. Leaves of the flowering shoots appressed, lanceolate, distinctly auricled, slightly oblique.

Flowers ½ inch in diameter, greenish yellow, 5—6-merous, arranged in terminal, many-flowered, crowded leafless, umbellate cymes.

Flower-buds subglobose.

Calyx of 5—6, deltoid-lanceolate sepals forming a broad cup at the base.

Petals ½ inch, twice the length of the sepals, spreading, oblong, boat-shaped.

Stamens nearly as long as the petals, yellow, glabrous; anthers small, yellow.

Carpels glabrous, greenish, erecto-patent.

Scales whitish, oblong, emarginate.—Fl. late summer and autumn.

Syn. S. ochroleucum, Chaix, in Villars, Hist. Pl. Dauphiné, t. 1. (1786), p. 325; Smith, Prod. Fl. Græc., 312, et in Trans. Linn. Soc. x., p. 6; Baker, in Gard. Chron, viii. 1877, p. 307. S. altissimum, Poiret, Enc., v., 634 (1796); DC. Pl. Grass., t. 40; Haworth, Synops., p. 115; Wilk. et Lange, Prod. Fl. Hispan. ii., 135; Boissier, Fl. Orient. ii., p. 785; Reich. Ic. Crit. iii., 285. S. rufescens, Tenore, Fl. Nap. i., 248, t. 41 (1811). S. soluntinum, Tenore, in Guss. Syn. ii., 827. S. fruticulosum, Brotero, Fl. Lusit. ii., 206 (1804). S. altum, Clarke, *fide* Boissier. S. dioicum, Donn, Cat., ed. 3 (1804). S. Jacquinii, Haworth in Phil. Mag. (1825), p. 174. S. Salsovitzianum and dolomiticum, Hort. Sempervivum sediforme, Jacq., Hort. Vindob., i., t. 81 (1770); Misc. Nat. i., p. 135, t. 5; Aiton, Hort. Kewensis, ed. 2, vol. iii. (1811), p. 173.

Mediterranean region.

A widely distributed plant, variable in the size and form of the leaves and the appearance of the inflorescence.

We have cited what we believe to be the oldest name for the species as a member of the genus Sedum, though Jacquin had previously described it under Sempervivum in 1770. To Villars' *Hist. des Plantes de Dauphiné* Dominic Chaix, "Parochus," contributed, under the title "Plantæ Vapincenses," a list of plants found about Gap and Embrun, in the higher Alps of Dauphiny. It is noteworthy that the plants in this list are arranged according to the series of natural orders as proposed by Linnæus. Sedum ochroleucum, as it is there called, accordingly finds a place among the "Succulentæ." Our description has been drawn partly from cultivated specimens, partly from others gathered by ourselves at Mentone and at Nice.

26. S. STENOPETALUM, Pursh, ex Wats. Bot. 40 Parall., p. 101.

Glabrous. Stems 3—6 inches, erect from a decumbent base; single or somewhat branched.

Leaves numerous, crowded on the barren shoots, sessile, fleshy, lanceolate, ½ inch long.

Flowers bright yellow, pentamerous, in much branched scorpioid cymes.

Petals linear-lanceolate acuminate, twice longer than the awl-shaped sepals.—Baker, in Gard. Chron. viii., 1877, p. 307.

Rocky Mountains, 6000—8000 feet.

27. S. SARMENTOSUM, Bunge, Mém. des Sav. Étr. de St. Petersb. ii. 104.

Glabrous. Shoots slender, prostrate.

Leaves crowded, opposite or whorled, ½—¾ inch, linear, terete, or slightly flattened, apiculate, slightly gibbous at the base. Leaves of flowering-stem scattered, ascending.

Inflorescence a flat-topped, umbellate, 3—5 forked cyme, with a solitary flower in the forks, branches recurved, with flowers on the upper surface only.

Flowers numerous, ¼ inch in diameter, bright yellow.

Sepals ovate-lanceolate, fleshy, half the length of the lanceolate petals.

Stamens yellow. Anthers oblong.

Carpels yellowish, laterally compressed, gradually tapering into an erect subulate style. Scales white, emarginate.

China.

There is a variety of this with pink stems and with the leaves marked with a marginal stripe of white or cream-colour, which is much grown in greenhouses and for carpet beds or edgings under the name of S. carneum variegatum. It is figured in Henderson's *Illustrated Bouquet*, t. 60.

28. S. AMPLEXICAULE, DC. Fl. Franc. Suppl. 226; Mem. Crassul., t. 7.

Glabrous, branches 2 to 4 inches, slender, wiry, ascending, naked beneath, above club-shaped, succulent, covered with imbricating leaves.

Leaves dilated and membranous at the base, gradually tapering into a long awl-like point.

Flowering stems decumbent, ascending, terete, about 6 to 9 inches. Leaves alternate, ascending, sessile, ¼ inch long, terete, with a membranous auricle at the base, and a fine inflexed point at the apex.

Flowers numerous, golden-yellow, secund in 2-forked cymes, with a solitary flower in the fork and with a few linear auricled leaves intermixed.

Buds cylindric below, conical or prismatic above.

Sepals ovate oblong, acute, furrowed on the outer surface, united below into a shallow cup-shaped tube.

Petals ¼ inch, oblong lanceolate, keeled, twice the length of the sepals.

Filaments greenish, anthers oblong, yellow.

Carpels erect, tapering into a long style. Scales oblong retuse, white.—Fl. summer.

Wilkomm and Lange, Prod. Fl. Hispan. 2, 135 (1874).

Syn. rostratum, Tenore, Nap. 1, 139, f. 2; S. tenuifolium, Sibthorp, Flor. Græca, t. 474; S. retorridum, Hort.; S. rupestre, Linn. herb., *fide* Baker; Sempervivum anomalum, Lagasca.

Mediterranean region.

This is a most curious species. The ends of the shoots swell out into small tubers covered with scale-like leaves. In the autumn these dry up and remain in that condition during the winter, so that we have here a condition analogous to that presented by the Potato, but in this instance above, not below ground. The plant is propagated and distributed by means of these tubers. The cultivator must not be misled by their appearance, and consider them as dead. The phenomenon in question seems to be a provision for the plant to withstand the hot droughts of Spain and Algeria.

We have received specimens from Mr. Maw, both from Spain and from Algeria. The plant, when well grown, assumes twice or thrice the size represented in the figure given in the *Gardeners' Chronicle*, vi., 1876, p. 204. Mr. Maw also found in the hills above Bonghari, Algeria, a form of this species, or possibly a distinct species, with ciliate, not glabrous stems, and obovate-oblong rather acute ciliate leaves; but in the autumn the ends of the shoots become tuberous, and the leaves at this portion of the stem have a broad membranous base and a subulate-lanceolate blade.

29. S. ANOPETALUM, DC. Fl. Fr. 526.

More or less glaucous. Branches prostrate or ascending, cylindrical, of the thickness of a crowquill, 4—6 inches long.

Leaves in 8 ranks, approximate, sessile, spreading (or on the flowering shoot, ascending) ⅔ inch long, terete, awl-shaped, spine-tipped, auricled at the base, greyish green, red at the tips.

Flowers pale greenish, yellow, ½ inch in diameter, in dense, flat, or concave umbellate cymes, about 1 inch in diameter.

Bud oblong, pointed, longitudinally grooved.

Sepals 5—7, erect, deltoid, lanceolate, grooved, united below the centre in a shallow cup.

Petals erecto-patent, narrow, lanceolate, somewhat folded and keeled.

Stamens rather shorter than the petals; filaments yellow; anthers yellow, apiculate.

Carpels 6—7, erect, elongated, compressed, glabrous, nearly as long as the stamens. Scales minute, whitish. Seeds winged.—Fl. July, August.

Wilkomm and Lange, Prod. Fl. Hispan. 2, p. 135.

Syn. S. Verloti, Jordan, in Bull. Bot. Soc. France, vii., 606, is a green not glaucous form of the species; S. collinum, and S. ochroleucum, of some gardens; S. hispanicum, DC., not of L.; S. rupestre, Vill. Dauph. iii., 679, not of Linn.

South Europe and Mediterranean region.

This is a very neat habited pleasing Sedum, the regularly arranged red-tipped leaves being suggestive of those of Andromeda tetragona.

(*To be continued.*)

PLANT PORTRAITS.

ÆSCULUS RUBICUNDA BRIOTII, *Revue Horticole*, October 1, 1878, p. 370.—A seedling from the Scarlet Horse Chestnut, with flowers of a very rich red colour.

ANANAS MACRODONTES, E. Morren, *Belgique Horticole*, 1878, t. 4 and 5.—The plant known in gardens as Bromelia undulata, B. macrodosa, and Disteganthus basilateralis. The flower-spike is elongate-ovoid with imbricating dentate pink bracts. The fruit is of the same shape, about 8 inches long, 4 inches in width, with the perfume and flavour of the Pine-apple. Brazil.

ANOPLOPHYTUM STRICTUM, Beer, *Belgique Horticole*, 1878, p. 188, t. 13.—Leaves tufted, tapering from a broad base into a long linear recurved blade, of a green colour speckled with white. The flower-spikes have showy pink bracts and violet flowers. It is a fine air-plant, living suspended in the damp air of the stove.

ANTIRRHINUM HISPANICUM, Chavannes, *Botanical Magazine*, t. 6391.—A dwarf habited Snapdragon with delicate pink flowers. Native of Spain.

ARISTOLOCHIA TRILOBATA, *Botanical Magazine*, t. 6387.—An old inhabitant of our stoves, with greenish flowers mottled and striped with brown, and with the upper lip of the perianth prolonged into a long linear tail. Brazil and West Indies.

BIGARREAU JACQUET CHERRY, *Bulletin d'Arboriculture*, Sept., 1878.—A good market variety, very productive, and greatly valued in Belgium. The fruits are small, black, with the flesh firm, and consequently able to bear transport.

BROUSSONETIA BILLIARDI, *Revue Horticole*, 1878, p. 375.—A curious variety of B. papyrifera, in which the cellular portion of the leaf is suppressed, all but a slight portion at the apex of the three leaf lobes, which otherwise are represented solely by the three nerves.

CHEVALLIERA VEITCHII, E. Morren, *Belgique Horticole*, 1878, p. 177, t. 9.—This is the Æchmea Veitchii of Baker, *Bot. Mag.*, 1877, t. 6329.—The flower-spike with its recurved scarlet bracts is very handsome. The plant has continued in flower for

more than a year. New Granada. Introduced by Wallis.

Cœlogyne Hookeriana, Lindl., *Botanical Magazine*, t. 6388. — A very pretty Pleione, differing from most of its fellows by producing its leaves and flowers simultaneously. Sikkim Himalaya.

Hedysarum MacKenzii, *Botanical Magazine*, t. 6386.—A pretty Sainfoin-like plant, native of the Polar regions and the Rocky Mountains. Kew.

× Lælia Dominiana, *Floral Magazine*, t. 325, October.—The splendid hybrid raised in Messrs. Veitch's establishment between Cattleya Dowiana and some Lælia.

Lilac, Double, Lemoine's variety, *Belgique Horticole*, 1878, p. 174.—A handsome double form, named Syringa vulgaris Lemoinei.

Nicotiana suaveolens, Lehmann, *Belgique Horticole*, 1878, p. 187, t. 12.—A New Holland plant, with lanceolate leaves tapering to both extremities. Flowers large, fragrant, white, in loose panicles.

Oncidium varicosum var. Rogersii, Rchb. f., *Belgique Horticole*, 1878, p. 172.—A large yellow-flowered Oncid, with a very broad 2—3 lobed lip, figured in *Gardeners' Chronicle*, 1870, p. 277. Brazil.

Pelargoniums, Ivy-leaved, *Floral Magazine*, t. 327.—Three double-flowered varieties, 1, Elfrida, rosy lilac; 2, Mdlle. Sarah Bernhardt, double white; 3, La France, rosy pink.

Ribes alpinum pumilum aureum, *Revue de l'Horticulture*, 1878, p. 233.—A golden-leaved form of the common Ribes alpinum itself, not a very attractive shrub, but according to the figure the leaves are of a beautiful golden colour. From its dwarf habit it will serve well as an edging.

Stachys Mawæana, Ball, *Botanical Magazine*, tab. 6389.—"A tall-branched Wound Wort, conspicuous for its silvery hoary character." Flowers cream-coloured, spicate. Native of Morocco.

Sweet Pea, Butterfly, *Floral Magazine*, t. 328.—Flowers white, suffused with pale blue on the outer surface. Sent out by Messrs. Sutton.

Tillandsia brachycaulos, Schlechtendal, *Belgique Horticole*, 1878, p. 185, t. 11.—A species with tufted leaves, reddish on the upper surface, glaucous beneath, dilated at the base, and gradually tapering into long linear lanceolate recurved blades. Mexico.

Tulips, Show, *Floral Magazine*, t. 326.—The varieties figured are, 1, Dr. Hardy, flamed bizarre; 2, Talisman, feathered byblœmen; 3, Glory of Stakehill, byblœmen breeder.

Warscewiczella Wailesiana, marginata, discolor, and vittata, *Belgique Horticole*, 1878, p. 181, t. 10.—Four species once referred to Warrea, but not placed under Zygopetalum. All are in favour with Orchid growers.

Veronica Traversii, Hook. f., *Botanical Magazine*, t. 6390.—A New Zealand shrubby species of great beauty, forming when well grown a symmetrical ball, 3 to 4 feet in diameter, completely powdered with white flowers at midsummer. The decussate leaves are ovate lanceolate.

Garden Operations.

KITCHEN GARDEN.

At this season there will be an abundance of heavy work on hand in this department in the way of digging, trenching, manuring, &c. Besides these matters draining will likewise be necessary at those places where heavy adhesive soil in a saturated state exists. This operation is most essential in the case of land of such a description as being the primary means towards its amelioration and improvement. Many advantages arise from having these operations completed as early in the season as possible, and therefore we advise that such matters be pushed forward as expeditiously as convenient when the state of the weather and soil will admit of its being carried out properly at this period of the season, and when frost may be expected to prevail at any time. And under such a contingency it may not be amiss here to counsel the necessary precautionary measures being taken for any emergency in this way, so as to mitigate in some degree the disastrous consequences which naturally ensue when the subjects exposed are not sufficiently hardy or inured to withstand its operation without injury. Broccoli and Cauliflower, which are coming in now, may be enumerated amongst other subjects needing occasional supervision; so far a mere tying up of the leaves over the heads has proved effective, but now the season has so far advanced this means will scarcely suffice, and we therefore recommend the lifting with a ball of earth all those plants with heads which are fit for use and storing them in a shed or pit, where they may be secure from injury and where they can be kept cool; this will also be the case in regard to Lettuce and the curled varieties of Endive; other kinds of the latte subject, as the Batavian section, are almost hardy, and in ordinary seasons do well out-of-doors.

Other operations out-of-doors which will also demand notice now will be the plantations of Globe and Jerusalem Artichokes. In the case of the former we unhesitatingly assert that many roots are materially injured, if not killed altogether, by having too much covering applied round the crowns during the winter months, whereby decomposition is encouraged and the plants destroyed. In our opinion, wood-ashes form the best substance for this purpose, but this should not be placed higher than from 3 to 4 inches round the crowns. Before this is done all decayed leaves from about the crowns should be removed, and those which are entire should remain so and be left on the plants. The tubers of the Jerusalem Artichoke should be lifted now and stored away for use; these unquestionably keep best when they are pitted in a similar manner to Potatos or Swedes, and retain their nutritious quality far better under such conditions than otherwise. During the winter months operations out-of-doors will be frequently interrupted by the existence of adverse conditions; advantage should be taken of such opportunities to advance all kinds of indoor work, such as looking over stores of Potatos, Onions, and other roots, and to accelerate every other kind of preparatory work which can be done at such times, and which will tend to lessen the pressure at busy periods of the year.

In the forcing department increased attention will be requisite to maintain successional supplies of Mushrooms, Rhubarb, Seakale, Asparagus, French Beans, &c. By this time ample supplies of leaves will be obtainable; these when mixed with litter from the stable in equal proportions form a good basis for beds for most operations, and as pits or frames become vacant the old beds should be removed and new ones formed of these materials in readiness for crops of Potatos, Carrots, &c. See also that an ample supply of it is maintained in a warm condition for freshening up any previously made beds which require it. To have new Potatos at an early period next year it will be necessary to start a batch of sets at once; we prefer having entire moderate-sized sets, and in the first place these are sprouted, and afterwards potted or planted out in beds with a slight bottom-heat. Veitch's Ashleaf and Myatt's Prolific are both commendable kinds for very early work. Roots of Mint and Tarragon should be potted or placed in boxes for yielding an early supply. In the frame ground the chief object should be to keep the subjects as hardy as possible, for this end Cauliflower and Lettuce plants which are pricked out—also crops of Radishes, Parsley, Endive, and Broccoli laid in for use—should be fully exposed every day when favourable weather exists, and so also should similar subjects in hand-lights elsewhere. *Geo. T. Miles, Wycombe Abbey.*

FRUIT HOUSES.

Cucumbers.—The planting made in the end of September from plants raised from seed at the end of the previous month will by this time have covered the greater part of the space allotted to them. These plants should not be allowed to fruit providing they have ample scope for root-action, and the fruit is not required before Christmas. But on the other hand, if the roots are growing in a confined space, such as in pots and boxes, and which they have filled with roots, then I say it will be advisable to allow the plant to swell off a few fruits, which will be rather advantageous than otherwise to the plant, inasmuch as the partly pent-up sap will then, so to speak, be "circulated" by the slight demand made upon its organic resources in order to swell the fruit; but let the quantity be only sufficient for that purpose, and under the circumstance above indicated, for I believe that upon the judicious or unwise cropping of the plant through November and the first weeks in December hangs success or failure (other points being properly attended to) in keeping up a supply of fruit equal to the demand of the establishment throughout the winter months. Therefore crop lightly—over-cropping being a specific evil—and otherwise attend to the stopping, thinning, and tying of the shoots, and remove forthwith any decayed portion of wood or leaf that may appear, and let cleanliness prevail throughout. Damp the house and plants—avoiding the embryo fruit as much as possible, otherwise they would be likely to damp off—morning and afternoon, shutting up the house at one o'clock. See that the linings are well attended to during this inclement weather, and to prevent mildew from attacking the plants, dust some flowers of sulphur over the leaves. *H. W. Ward, Longford Castle Gardens.*

HARDY FRUIT GARDEN.

Of all operations connected with fruit culture that of root pruning is perhaps the most important, although there are few places where it receives anything like the attention or skill that is generally brought to bear on other branches of gardening. Instead of being scientifically and carefully conducted, the work is frequently entrusted to rough inexperienced hands, whose knowledge of the purposes of the different kinds of roots and the functions they serve are of the most crude character. Such men as these hack away with spade right and left, and cut all that comes in the way and at equal lengths, whether they be big or little, feeders or otherwise; and it is not surprising, therefore, that results have been anything but satisfactory to those who have had it carried out in this manner. It has, I believe, been stated by no less an authority than the late Mr. Rivers, that where you see a coarse strong shoot forming in a tree you will find a gross fibreless kind of root, either as a tap going straight down or drawing its supply of sap from cold wet soil, or other source where the conditions are not favourable. Now if this is the case, as from close observation when transplanting I believe it is, it stands to reason that if we would restore an equilibrium of growth and bring about fertility, the right way is to assail all such roots wherever they may be situated, and shorten them back considerably so as to force them to throw out a network of small ones to feed nearer the surface; and if this is done at once the trees will have a chance of making considerable progress towards it before severe weather sets in. Even a disturbance of the soil often effects much good, especially in cases where it is of a stiff wet nature, and where a little fresh turfy loam and road-scrapings can be worked in to supply the place of that dug out from below. Indeed, in all cases of root-pruning this is advisable, if only to the extent of a few barrowloads to a tree, as it is astonishing what a little assistance given in this way works for them in bringing them round to more fruitful habits. The difficulty, however, with many is, not how to check their trees, but how to get sufficient growth and strength to enable them to carry good crops, and more particularly is it so with Pears on the Quince stock trained as pyramids, which in light dry soils always have a starved look, and seldom ripen fruit fit for eating. The cause of this is, that they get checked from want of moisture just at the time they ought to be swelling fastest, and the skin in consequence becomes contracted, and the flesh hard and gritty, so that when rain comes the greater portion of them crack open, and are of no further use. The whole of ours here used to be in this unsatisfactory condition, but since we have added a quantity of clay to the soil they bear splendidly, and are in quality everything we can wish. Those, therefore, who are troubled in the same way, or are about planting, cannot do better, if they have light land to deal with, than set to work and improve it in the same manner, for although it entails considerable labour, it amply repays it in a few years, and makes the quarter in which it is done of far greater value for generations to come. The way we managed so as to raise the general level was to wheel out as work progressed about 6 or 8 inches of the sandy subsoil; and in trenching, which was done nearly a yard deep, the same quantity of clay was brought back to replace it, and scattered regularly in the lower 2 feet, where the principal portion of the roots are. Buried in this fashion, away from the surface, it parts with its moisture slowly, and always contains a good supply for the trees to feed on. In trenching these were not moved from their position or unduly disturbed, but allowed to stand on a solid base of earth over a yard through, and all the roots protruding were laid in the fresh-made soil according to the level at which they were at. This, as the trees were rather large, not only saved giving them a severe check, but prevented them settling irregularly as they otherwise would. In using the clay it should if possible be dug in when got fresh from the pit before rain has fallen on it, as then it can be chopped or broken up finer, besides being handled and incorporated with the soil at much less trouble. Although the Quince is such a moisture loving plant, I have seen Pears worked on it planted on raised mounds, which, unless on very heavy retentive lands, is the worst thing possible. Better far, instead of doing this, to allow the collars to be even at a slightly lower level, that water or sewage can be easily administered during the summer without loss. Another matter with the Quince is, that when used as a Pear-stock, it must be buried low enough for the point of union of the two to be covered with soil, or it does not swell sufficiently fast to keep pace with the top, which forms a large protuberance at the junction, and soon gets out of health. *J. Sheppard.*

Seed Adulteration. — At the meeting of the Council of the Royal Agricultural Society, held on the 6th inst., Mr. Whitehead, Chairman of the Seeds and Plant Diseases Committee, reported that the Consulting Botanist had examined many samples of seeds during the past quarter, and that he had found much unwillingness on the part of those who submit seeds for examination to supply him with information as to their source. In one case of grass seeds, which were proved to be of especially bad quality, the sender refused to say from whence he obtained them. It is hoped that the members of the Society who send samples of seed to be tested by the Consulting Botanist will not hesitate to furnish such information as may lead to the prevention of the adulteration and killing of seeds.

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 16, 1878

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 18	South London Chrysanthemum Society's Show (three days). Royal Horticultural Society: Meeting of Fruit and Floral Committee, at 11 A.M.; Scientific Committee, at 1 P.M.
TUESDAY,	Nov. 19	Southampton Horticultural Society's Show. Chrysanthemum Show at the Westminster Aquarium (two days) Gravesend Chrysanthemum Society's Show (two days). Northamptonshire Chrysanthemum Society's Show (two days).
WEDNESDAY,	Nov. 20	Liverpool Horticultural Society's Chrysanthemum Show. Saffron Walden Horticultural Society's Show. Ealing Horticultural Society's Show. Wimbledon and District Horticultural Society's Show Bristol Chrysanthemum Society's Show (two days) Webb & Son's Root Show at Birmingham (two days) Harrison's Royal Root Show at Leicester (three days).
THURSDAY,	Nov. 21	Linnean Society, at 8 P.M. Chrysanthemum and Fruit Show at Southport (two days) Kingston and Surbiton Chrysanthemum Society's Show (two days).
SATURDAY,	Nov. 23	Carter's Root Show at the Agricultural Hall. Sutton's Root Show at Reading.

AT the Linnean Society on Thursday last the Rev. GEORGE HENSLOW revived a question which the gardeners have long ago settled for themselves, but which the vegetable physiologists have not been so certain about. The question was as to the ABSORPTION OF WATER OR WATERY VAPOUR BY LEAVES. Do they or do they not possess such a power? No gardener would hesitate a moment as to the proper answer to be given to this question. His whole system of procedure is based upon it, and to tell him that leaves do not absorb water is to tell him what his daily practice contradicts. Physiologists and teachers have recognised this, and while they have felt themselves bound to accept provisionally the results of so eminent an experimenter as DUCHARTRE, and to teach accordingly, yet they have felt themselves constrained to look about for modifying circumstances which should furnish the clue to the discrepancy between the universal experience of the gardener and the more carefully conducted, but it may be none the less fallacious, experiments of the laboratory. They have evaded the difficulty by supposing that leaf-action of the kind indicated does not take place all the time that root-action is in force, but that directly some impediment is thrown in the way of root-action, then the absorption by the leaves takes place, and so forth.

They explain the incontestable good effects produced by syringing, damping down, and the like, not by the inhalation of water or watery vapour, but by the prevention of evaporation. The plant, they say, is prevented from exhaling moisture, owing to the damp atmosphere, and therefore it does not suffer. Unfortunately for this view, MCNAB'S experiments show that plants do exhale in a moist atmosphere, provided they are exposed to the action of light. Of course there is a certain measure of truth in the speculations of the physiologists, and there is still more truth in the fact that the structure of some leaves offers a decided physical obstacle to the absorption of water. The thick rind of the Cactus, the hard, dry epiderm of the Pine-apple, the waxy surface of the Cabbage, all offer obstacles to the passage of fluids either into or out of the leaf. If egress of fluid be prevented by the leaf, then of course there is all the less necessity for imbibition.

We must refer to Mr. HENSLOW'S criticisms of the inference drawn by DUCHARTRE from his experiments, and which appear to us to be specially worthy of notice. We may also call attention to the brief record of Mr. HENSLOW'S own experiments in another column, which appear to us to put the matter on a proper footing.

In the brief abstract with which we have been furnished Mr. HENSLOW does not allude to one point which, however, he dealt with effectively in his paper. We allude to the independent life possessed by the detached shoot or leaf. Objections have been raised to experiments on such detached portions of a plant, on the ground of the lowered vitality of such portions. A limb of an animal, indeed, dies immediately on removal, but in the case of the plant the detached leaf does not immediately begin to die. It maintains for a time an independent existence provided water be supplied, so that though its vitality may be lowered it is not at once extinguished by severance from the parent plant. Hence the objections alluded to have the less force.

The preservation of cut flowers in water receives incidental mention, and here again Mr. HENSLOW'S conclusions coincide with the practical experience of the drawing-room or boudoir.

From a practical point of view we entirely agree with Mr. HENSLOW'S conclusions, which are borne out by daily experience in the garden, and even by what one sees in the vasculum of the botanist or the tin case of those who have to send flowers to a distance.

—— BERKELEY PORTRAIT.—This portrait, which has been painted by Mr. PEELE at the instance of some of Mr. BERKELEY'S friends, was presented on their behalf to the Linnean Society on Thursday last by Sir JOSEPH HOOKER. Needless to say that the portrait was received with great satisfaction by the Society, and all felt that, in spite of the appropriate terms in which the gift was presented and accepted, words were not needed to express the great respect felt for Mr. BERKELEY by all who value his lifelong services to science, and respect his qualities as a man. The portrait will be open for public inspection at all reasonable hours.

—— ROYAL HORTICULTURAL SOCIETY.—We are informed that there is good reason for believing that the meeting to be held at South Kensington next Tuesday will be of a more than usually interesting character. The entries for the prizes offered for vegetables by Messrs. CARTER, HOOPER, and SUTTON, are stated to be very numerous, so that a brisk competition may be anticipated. There will also be a fine display of Chrysanthemums contributed by Mr. TURNER, Messrs. VEITCH, and other growers; and Messrs. VEITCH will again exhibit an extensive collection of winter bedding plants. To the fruit department Mr ROSS, gr. to S. C. EYRE, Esq., Welford Park, will contribute eight Smooth Cayenne Pine-apples.

—— ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—The Right Hon. the Earl of DERBY has consented to be nominated as President of the above Society at the approaching annual meeting, in the place of the late Sir JAMES WATTS. The next horticultural meeting will be held in the large room of the New Town Hall on the 26th inst.

—— A MAORI FEAST.—In the last number of *Nature* an interesting account is given of a "food feast" offered by the natives to Sir GEORGE GREY. Several hundreds of women took part in the ceremony, and performed various chants and dances when presenting the food. Among the articles employed were:—

Pohua.—The root of Convovulus sepium (?), as flowery as a Potato, with a slightly bitter taste.

Sowthistle (Sonchus oleraceus).—The Hauhaus, when compelled to use cooked Sowthistle, found to their surprise they did not lose condition on this spare diet.

Para.—The thick solid scale from the rootstock of the grand Fern, Marattia fraxinea. This edible was pinkish or pale purple when cut, solid, tough, almost tasteless, with a slightly bitter flavour.

Marnaku.—This esculent appeared in thick junks of about a foot in length; it is the mucilaginous pith of the great black Tree Fern, Cyathea medullaris. It was presented ready dressed, was soft, very sweet to the palate.

Roi.—The rhizome or root of the Bracken, Pteris aquilina var. esculenta. It was offered in the uncooked state, in which it is usually kept ready for use.

Tawha.—The prepared berries of a common forest tree, Nesodaphne Tawha.

Hakeke.—The Jew's-ear fungus, Hirneola Auricula-Judæ. It is found in the forests of Pirongia; that which grows on the Karaka is most esteemed.

—— EUPHORBIACEÆ.—Mr. BENTHAM contributed a paper on the Euphorbiaceæ at the Linnean Society meeting, November 7. He treats the subject in his usual comprehensive way. He observes that among dicotyledons Euphorbiaceæ occupies a fourth place in point of numbers, having 3000 species and 200 genera. Their evident generally tropical nature is a striking feature, and judging from various data it is conjectured that their ancient home was in the Old World. Their affinities have been repeatedly discussed by botanists, but though there are individual genera which may exhibit some one character supposed to ally to other orders, yet no real connection has hitherto been pointed out. Their isolation is produced, not so much by any one special character, as by a special combination of several. As to position in the linear series, unless the order be broken up, practically it must remain among the Monochlamydeæ, in spite of occasional presence of corolla in some forms.

—— COTONEASTER FRIGIDA, which was first introduced to English gardens by Dr. WALLICH, whose collectors found it in the mountains of northern Nepal, is a very handsome deciduous tree, retaining its leaves, however, later than most other deciduous trees. In April and May it is snow-white with blossom; its large bunches of crimson fruits, which now form the most brilliant ornament of the shrubbery and arboretum, will remain on the tree far into the winter if allowed to do so by the birds.

—— CLEISTOGAMIC FLOWERS, Mr. ALFRED W. BENNETT (Linn. Soc., Nov. 7) states that these flowers which do not open are of two kinds:—(1) Those which hardly differ from the perfect open flowers other than in the partial or entire suppression of the corolla and the closing of the calyx; and (2) those with a distinct modification in the flower to aid self-fertilisation. He supposes one has arisen by degradation, the other by a rudimentary development of the organ. Most interesting phenomena occur in the mode of emission of the pollen tubes—these travelling in a straight line from the anther to the stigma vertically upwards, as in Oxalis; horizontally in others, and creeping along the surface and even back of the ovary in Viola canina. An unseen agency directs, for none wander with uncertainty; this is all the more remarkable, for when not in proximity to the stigma, the pollen grains protrude their tubes in all possible directions.

—— FLORAL DECORATION OF LONDON BRIDGE.—On the occasion of the LORD MAYOR'S progress from the Guildhall to Westminster on Saturday last, London Bridge, over which the procession passed on its way to the Borough, was decorated in a very pleasing and becoming manner by Mr. W. WEEKS, Ita Villa, Fulham Road, S.W. Mr. WEEKS introduced about seventy large specimens of Conifers, which he placed in two rows, and so formed an avenue. The base of the plants was completely hidden by Chrysanthemums, of which about 2000 specimens were brought into use. At either end of the bridge were arches about 30 feet high, completely covered with evergreens, and having hanging baskets of flowers suspended from them.

—— THE WEST OF SCOTLAND ROSARIANS' SOCIETY.—The annual meeting of this Society was held recently, when the annual report of the Society, read by Mr. JOHN MITCHELL, and the treasurer's report by Mr. BARRON, both proved to be of a highly satisfactory nature, and were ordered to be printed and circulated among the members. Owing to the unprecedented success which has hitherto attended the exhibitions of the Society, and taking into account the liberal and hearty support which has uniformly been given to it by the inhabitants of Helensburgh and Gareloch, as well as by many patrons in other parts of the country, the meeting unanimously resolved that the next show of the Society should be held in Helensburgh, in July, 1879.

—— Renanthera (Vanda) Lowii.—Professor Reichenbach, Botanic Garden, Hamburgh, requests us to state that a new Orchid (most probably R. Rohaniana) having appeared, he is anxious to obtain fresh specimens of both kinds of flowers of Renanthera Lowii for comparison, and will be much obliged to any correspondent for the favour of the same.

—— A Severe Snowstorm in Yorkshire.—Mr. Clayton, writing from Grimston Park Gardens, Tadcaster, on the 12th inst., says:—"During the last twenty-four hours we have experienced the most severe snowstorm I have ever known. It commenced about 5 P.M. on the 11th inst., and continued, with slight intermission, until noon to-day. The snow is quite 15 inches deep on the flat. About 6 P.M. yesterday, when the snow was falling very fast, we had two or three very vivid flashes of lightning, accompanied with thunder."

—— Models of Vegetable Parasites.—The *Farmer* states that for some time past there has been on view at the Berlin Agricultural Museum a highly interesting collection of models of the various fungi injuriously affecting the various ordinary crops. Among these are the Potato disease fungus (Peronospora infestans), the Vine disease fungus (Oidium Tuckeri), the Ergot, both as Sclerotium clavus and in its later development as the Claviceps purpurea, and the Æcidium Berberidis, whose mischievous action on the food of live stock is well known to most agriculturists.

—— Elæagnus glaber of Thunberg, a native of Japan, is well worthy a place at the side of the time-honoured Laurustinus and the few other flowering evergreen shrubs which bloom normally at the present dull season of the year; it is thoroughly hardy, and



Fig. 105.—Funkia grandiflora: flowers and leaf nat. size, pollen grain mag. 320 diam. (see p. 630.)

its coriaceous foliage, deep green above and covered beneath with rich red-brown scales, gives it a different appearance from almost any other hardy shrub. Every year long sarmentose shoots, several feet in length, are developed, every portion of which is covered with ferrugineous scales; as the leaves get older the upper surface, however, becomes glabrous. The long tubular flowers, which are produced in great abundance, either singly or in clusters, are themselves covered with scales on the outside, but are creamy white within, and deliciously fragrant.

—— LIFTING DAHLIA ROOTS.—It was a maxim with many old Dahlia cultivators that "the longer the roots can be left in the ground with safety, the riper and sounder they will be." The present season is one favourable to this view of the case, as generally, in many instances at least, Dahlias have not suffered to any great degree from the effects of the late frosts. It is probably well to allow the foliage to decay naturally as much as possible, but when an early frost of unwonted severity occurs and destroys the stems it is best to cut them away soon after. Towards the end of the month the roots should be lifted; it is best done by raising the roots with a fork having four or five points, sufficiently to sever the fibres; by doing this the foliage will begin to flag, in consequence of loss of nourishment, and they will not be so susceptible of frost when it comes. This is all the more necessary after the recent heavy rains, and the continuance of an almost uninjured succulent growth. It is invariably best to allow the foliage to decay gradually, and not to cut it down if it can be avoided. If, in the act of partially lifting, any part of the tubers are exposed, some soil should be thrown over it.

—— HOW ARE OLIVES PRESERVED?—It is well known that Olives are preserved in salt and water, and that they retain much of their original colour for lengthened periods, but some observations of M. DE CANDOLLE seem to demand a fuller acquaintance with the process adopted, and which may throw light on the remarkable results recorded by that gentleman. More than half a century ago there was presented to AUGUSTE PYRAMUS DE CANDOLLE a specimen showing foliage and fruit of the Coffee, preserved in a bottle of salt and water. The colour of the plant was but little changed, and the fluid scarcely discoloured or turbid after the lapse of fifty-three years, but as the resin covering the cork was cracking, M. DE CANDOLLE thought it a good opportunity to have the liquid analysed, to see what it was that had preserved the specimen so perfectly for so long a period. On analysis it proved to be simply a solution of common salt, in the proportion of about 165 to 1000 parts. The liquid had apparently been boiled previous to use. As salt and water have frequently been used before, and with indifferent results, further information is desirable.

—— LAWNS AT THE PARIS EXHIBITION.—The success of Messrs. CARTER & CO. in this department has been made the subject of complimentary remarks in the French journals. The *Revue Horticole* pronounces their lawn to have been the best of all, and gives the following details. The seed was sown in the proportion of 3 hectolitres to the hectare (rather more than 3 bushels to the acre), and consisted of Lolium perenne sempervirens, 144 parts; Cynosurus cristatus, 72; Poa nemoralis, 9; P. annua, 9; P. sempervirens, 9; Avena flavescens, 9; Trifolium repens, 3; and T. minus, 1 part. MM. VILMORIN'S lawn, the second best, was composed of three kinds only:—Lolium perenne, 75; Poa pratensis, 10; Creselle (Cynosurus cristatus), 15. This mixture was specially contrived to produce a fine effect for a short space of time, and was not suitable where durability is required. Messrs. WEBB & CO., of Stourbridge, also sowed a plot with the following mixture:—Avena flavescens, 2½; Cynosurus cristatus, 22½; Festuca duriuscula, 9; F. ovina, 6½; Lolium perenne tenuifolium, 54; Poa nemoralis, 6½; P. sempervirens, 9; P. trivialis, 2½; Trifolium repens, 15¾; T. minus, 4½; Anthoxanthum odoratum, 2¼.

—— TROPÆOLUM CANARIENSE [ADUNCUM] SEED. — Probably seedsmen are scarcely acquainted with any other article of their trade that varies so much in price as does the popular annual so called. It should, however, be noted that it is not Tropæolum canariense at all, but P. aduncum, the error having no doubt originated from it being popularly called the "Canary Creeper" from its yellow flower. In 1876—7 the wholesale price was from 9*s.* to 12*s.* per pound. In 1877—8 it went up to as much as 20*s.* per pound; and this season there is a material advance in the price over that of last year. This Tropæolum is always in demand, and about once in three or four years there is a scarcity. A long, hot, dry summer will seriously circumscribe the harvest, and the same experience holds good in the case of the past cool, moist summer. In all probability this is owing to the ravages snails, slugs, &c., made among the young plants. The uses to which this pretty Tropæolum is put in gardens are many, one of the most striking and effective was witnessed at Muckross, Killarney, a few years ago, where hedges of the Scarlet Invincible Sweet Pea, and the Canary Creeper, intermixed, were, as also at Culford, in Suffolk, one of the features of a place full of horticultural interest.

—— EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY.—The first autumn exhibition of this Society will take place in the Drill Hall, Ealing, on Wednesday, November 20. Potatos will be a leading feature, as in addition to handsome special prizes offered by Mr. PETER MCKINLAY and others, the Society offers many. One interesting feature will be some special prizes for the best dish of cooked Potatos, the tubers to be six in number and boiled without their skins, and taken to the place of exhibition at noon.

—— ZONAL PELARGONIUMS FOR AUTUMN BLOOMING.—One of the most effective of the pink-flowered varieties which take on such a depth of colour in the autumn is Pearson's Mrs. Leavers. The flowers, which are of a deep lilac-pink in summer, are now of a very bright glow of magenta-rose; it is also a free-blooming variety, and will expand its flowers in a cooler atmosphere than some others. The striped zonal New Life appears to come better in autumn than in summer, when the weather is cooler, for then the stripes appear to be most distinct, and the pips large and bold. The great defect in this unique variety is that the stripes and splashes of colour which break up the red are apt to be salmon-coloured rather than white, the white stripes being more effective than the salmon. The old Vesuvius is a fine autumn bloomer, and it is not to be wondered at that it is so much grown for market work. The best autumn bloomers are those with pips that expand well, as some varieties cup simply, and do not open kindly and boldly.

—— KAINIT.—The *Agricultural Gazette* has received from Mr. CLEMENT CADLE, of Gloucester, the following letter, which appears to be of considerable importance, describing, as it does, what the writer calls an important discovery as to the use of this manure:—"An important discovery as to the use of this manure has been largely under my consideration and observation, from my connection with Messrs. JOHN CADLE & CO., who have imported about 1500 tons since 1871. It has been a source of much surprise to me that its effects were so peculiar, and sometimes so disappointing. We know the value of potash in its form as a carbonate (wood-ashes), and I held the general opinion that the kainit, which contains the potash as a sulphate, ought to be a good and certain manure. While the result of the seven years' experience has been varied and oftentimes unsatisfactory in the early crops, we have found the Clover crop, even two or three years later, remarkably affected after this length of time, showing that the cause is due to the sulphate of potash in the kainit not being immediately available for plant-food. After endeavouring for a long time to find out some explanation for this, my attention was aroused to the subject in reading the account given in Professor TANNER'S small work on the *First Principles of Agriculture*. This opened my eyes to the singular changes which take place in the soil in the formation of the double silicates, but when I saw the account he gave of the formation of nitre, then the difficulty disappeared, and I resolved upon the following mode of using the kainit. I consulted with Mr. EMBRY, one of the science masters in the Government Science Schools at Gloucester, and as the proposal appeared to be chemically correct, the experiment was carried out with the more confidence. A quantity of fresh horse-dung was taken to the Science Schools and placed in a large stone cistern, and between different beds of manure of a few inches thick we scattered the kainit. The smell of the dung was strong and offensive, and the pupils complained of it on the day on which it had been mixed, but in a few hours the smell entirely disappeared. On the following day and subsequently no smell was observed, and when Mr. EMBRY tested the manure chemically three months after he found a mutual exchange had been effected, and instead of sulphate of potash and carbonate of ammonia evolved from decomposed manure, we had carbonate of potash and sulphate of ammonia. It is unnecessary for me to say that the value of both of these bodies is considerably greater than that of kainit, and that both of these have a certain and prompt action. We think it right to make known these facts to our brother farmers, and as soon as I have completed some further experiments bearing upon similar modes of using the kainit I shall gladly make them public. One of the first lessons we draw from this work is, that kainit used upon and mixed in a dungheap will not only prevent a loss of ammonia as carbonate of ammonia, and which loss is continually going on, but cause the formation of two of the most valuable manurial substances we have, and that in a few years a manure heap turned up to ferment without an admixture of kainit will not be of half the value as when that substance is used. I shall be glad to hear of any one else's experience in this direction, and would especially recommend my agricultural friends to read the account of the formation of nitre beds in Professor TANNER'S little book on the *First Principles of Agriculture*, and they will see the importance of more attention to their manure heaps."

—— PHILODENDRON PERTUSUM.—Several writers have given their explanations of the origin of the singular holes in the leaves of Philodendron pertusum. The last we have seen is by FR. SCHWARZ, in the *Sitzungberichte* of the Academy of Sciences of Vienna. He states that they originate through the dying off of the tissue without any visible mechanical agency. It takes place before the cells of the tissue have become differentiated, and it takes place regularly in the bud when the leaf is about 8 millimetres long.

—— FUNKIA GRANDIFLORA.—Decidedly this is one of the noblest herbaceous plants we have. Its fine foliage, of a light green colour, and its erect spikes, of large white trumpet-shaped exquisitely scented flowers, furnish ample justification for our eulogy. Our illustration (fig. 105, p. 629), made from an imperfect specimen, may serve to enable our readers to recognise the plant, but once seen it is not likely to be forgotten. We find it quite hardy and not particular as to soil, but unfortunately the snails and slugs are exceedingly enamoured of this, as, indeed, of the other Funkias. The plant is a native of Japan. There are several other Funkias in cultivation, such as F. lancifolia, ovata, Sieboldii, subcordata, &c., for a full account of which, with their distinctive characteristics, we refer to Mr. BAKER'S papers in our volume for 1868, p. 763, 1015, 1040.

—— PROLIFEROUS PINE-APPLE.—Mr. HUNTER, of Lambton Castle Gardens, has sent us an extraordinary specimen received by him from Mr. DALE, gardener to Viscount BOYNE, Brancepeth Castle, Durham, in which the crown instead of consisting of one single terminal leafy shoot as usual, consists of a ring of shoots nine or ten in number, some free, others combined and fasciated. So far the appearance is like that of the "gills" of some Pine-apples, but in this case the "gills" are at the top of the primary fruit, and each one of the secondary shoots moreover is a flowering shoot bearing well developed though immature fruit; so that here we have the original fruit some 5 inches in diameter, surmounted by ten or a dozen smaller ones. It would have been better had this superabundant energy been concentrated in the original fruit.

—— CROTON WILLIAMSI.—This is one of the newer kinds, remarkable for the variety in the dimensions and coloration of the leaf. Mr. WILLIAMS lately sent us some leaves of this variety superbly coloured, the colour ranging from deep port-wine red, through pink to clear yellow. In the case of the lighter coloured leaves the ground colour, pink or

yellow, as the case might be, was more or less mottled with green. The general outline of the leaf was much the same in all cases, viz., oblanceolate, acuminate, tapering at the base into the stalk, which was about one-twelfth the length of the blade, stained red in the centre, but whitish or greenish at both ends.

—— Orchids in Flower. — The following Orchids are now in flower at Messrs. James Veitch & Sons', Royal Exotic Nursery, Chelsea :—

Angræcum bilobum
Burlingtonia fragrans
Calanthe Masuca
,, Veitchii, hybrid
,, vestita
,, ,, lutea
Cattleya Dowiana (aurea of many collections)
,, exoniensis, a fine plant with twenty flowers
,, fausta, a splendid hybrid
,, ,, aurea
,, ,, crispa
,, ,, superba
,, Eldorado
,, labiata
Cypripedium barbatum
,, biflorum
,, Harrisianum, hybrid
,, insigne
,, ,, Maulei, several
,, marmorophyllum, hybrid
,, Roezlii
,, Sedeni (hybrid), several
,, Schlimii
,, species nova from Borneo, in flower for first time, very fine, with beautifully spotted foliage
,, venustum
,, vexillarium, hybrid
Dendrobium bigibbum
,, ,, superbum
,, formosum, many
Epidendrum dichroum
Lælia elegans
,, præstans
Lycaste aromatica
,, cruenta
Lycaste Skinneri, in several fine varieties
,, ,, alba
Masdevallia ignea
,, Lindeni
,, Veitchiana
Maxillaria picta
Odontoglossum Alexandræ
,, cordatum
,, crispum
,, Roezlii
,, ,, album
,, Rossii
,, vexillarium
Oncidium crispum
,, Forbesii
,, holochrysum
,, Papilio Krameri
,, ornithorynchum
,, tigrinum
,, varicosum, many
Phalænopsis amabilis
,, grandiflora
,, Esmeralda, rare, now in flower for the first time
,, rosea
,, violacea, rare
Plumna fragrans
Pleione maculata
Restrepia antennifera
Saccolabium bigibbum
Stelis Brüchmüllerı
Sophrontes grandiflora
Vanda cœrulea
,, insignis (true)
,, suavis
,, tricolor
Zygopetalum Mackayi

—— Planting in Mauritius.—From the annual report on plantations on Crown lands in the island of Mauritius, made by Mr. Cantley, the Assistant Director of the Royal Botanic Garden, for the year 1877, we learn that the growth made by several varieties of trees introduced from India has been most satisfactory. The species which have grown best are Pterocarpus Marsupium, Dalbergia latifolia, Terminalia Bellerica, Albizzia stipulata, Dalbergia frondosa, Cassia florida, Mahogany, Swietenia Mahogani, Pongamia glabra, Acacia odoratissima, Azadirachta indica, Pterocarpus indicus, Adenanthera Pavonina ; Dalbergia Sissoo, Tectona grandis, and Eucalyptus calyophyllus. Many of the above, although planted only five years ago, are from 8 to 15 inches in circumference, and from 15 to 40 feet in height. Several have this year produced fertile seeds, among which are Sissoo, Pterocarpus, Terminalia, and Pongamia, and a good supply of young trees has been raised from these seeds. Mr. Horne, who was the originator of the happy idea of introducing from India trees which he considered might fairly be expected to thrive on the denuded and warmer plateau of the island, where trees of the Mauritius indigenous flora can no longer be had to grow satisfactorily, also predicted that in the year 1877 a supply of fertile seed might be expected from a variety of Eucalyptus (E. calophyllus), a variety which grows so well in the colony that the growth of some dozen plants planted about four years ago at Powder Mills has been the admiration and wonder of all who have seen them. The seed anticipated has been produced, and there are at present on hand no less than 30,000 young plants of this favourite and useful variety. Some hundreds of the above will be used during next planting season to test the practicability of an experiment already approved by the Government, namely, the growing of Eucalypti into large bushes ; in which shape they are expected to withstand the violence of the hurricanes, which is the main cause of devastating Eucalypti when an attempt is made to grow them into trees in Mauritius.

—— The Weather.—The report for the week ending November 11, issued by the Meteorological Office, states that the weather during the week was very changeable, clear bright skies alternating with heavy clouds, and showers of rain, hail, and snow. Temperature a little below the mean in all districts ; the maxima usually below 50° at all but the south-western stations, and below 40° in Scotland on the 8th and 9th. Nights cold, especially over Scotland and central England, the thermometer on grass falling to 19° in London on the night of the 7th and at Manchester on the 8th, while 25° was recorded in London on more than one occasion. The rainfall was above the mean everywhere, and considerably so in the eastern, north-western, and south-western parts of England. The heaviest amount recorded is that at Yarmouth, where 3.36 inches (or four and a-half times the mean) were measured in the course of the week. Very heavy snow showers in the North on Monday, the 11th. The wind was very boisterous generally : northerly at the commencement of the week, but backing to S.W. on Saturday, and blowing a strong gale from that quarter in all places on the ensuing night and morning, veering to N.W. on Sunday, and again blowing a gale in the north and west.

—— Correspondance Botanique.—M. Morren finds, as we do, that our botanical correspondence grows. His useful list of notables in botany and horticulture has reached a sixth edition, its size and utility have grown with each edition, so that it has become an indispensable directory in the study or office of all who are concerned with botany and the higher branches of horticulture.

—— Gardening Appointments. — Mr. F. Geary, for twelve years gardener to Mrs. Buck, Moreton House, Bideford, Devon, has been appointed gardener to the Earl of Portsmouth, at Eggesford, in the same county.—Mr. Wm. Hopkins, foreman for the last three years in the Marquis of Downshire's Garden, at Easthampstead Park, Berks, has been appointed gardener to Miss M. Ingram, Manor House, Binfield, Bracknell, Berks.

Home Correspondence.

Hibiscus syriacus.—I am pleased to see that attention has been drawn to this plant at p. 524, as too much cannot be said in its favour as an autumn-flowering hardy shrub, flowering as it does at a time when there is scarcely another shrub in bloom. There is no want of flowering shrubs from March till June, but after that the shrubbery borders become dull for the want of a few hardy flowering plants ; yet in this genus we have free-flowering plants producing a variety of colours that would prove valuable additions to any collection. Those who intend planting shrubs would do well to introduce a few of these Althæas and plant them in good soil in a sunny position. My attention was drawn in the end of August last year to a plant which was covered with flowers. This plant was probably thirty years old ; it would be about 5 feet high and 6 feet through. The individual flowers do not last long, but there is a long succession produced on one branch—I should think about five weeks from the time of the first flowers opening till they finished. I got six very small plants in 3-inch pots last spring, and one of them produced three flowers in the autumn, showing the free-flowering nature of the plant. There are two varieties of the plant that I have seen, the Hibiscus syriacus, and the plant referred to, with lighter coloured flowers, but with the same dark spot at the bottom of the petals. I have not seen the white variety referred to at p. 524, but the figure there is a very good representation of the other variety as I saw it in flower. *P. Graham, Sussex.* [There are many varieties, single-flowered and double-flowered, all of great beauty. Eds.]

The Wilson Raft.—About this time last year I wrote to you on the subject of the Wilson Raft, saying, "I hope soon to have a working drawing of an inexpensive practical metal raft which will answer every purpose." I seemed justified in saying this. We had proved with our wooden raft that the principle was correct, and that water, bog, and moist soil plants would thrive and bloom beautifully, side by side, but at different depths, on a raft. I had shown the raft to a competent engineer, and had sent him a good drawing of a metal raft prepared for me by an able engineer friend, and told him that I wanted no profit, but only the honour and glory of the name (Wilson Raft) connected with a useful gardening contrivance ; but, alas ! the Wilson Raft for public use is no nearer perfection than it was last year. The engineer has made two attempts, has given time and trouble, has been to a considerable expense himself, has put me to a cost of £14, with only to show for it a small compound metal and wood raft which will not bear the weight of enough plants to cover it. What is now wanted to push the matter on is this, that an engineer fond of gardening should take a little trouble over it ; and my principal reason for now writing is the hope of inciting such a one to look into the question. Some of our very highest engineers, among them Sir William Armstrong, Mr. Bessemer, and Mr. Latimer Clark, are not only keen gardeners, but have gardens with many new devices. If any one of them would bring his power of construction and invention to bear on the Wilson Raft, it would take a commercial shape in a very short time, and the horticultural engineer I first consulted would be prepared to make them. I will now state shortly what has to be done. My old raft made of cross-boards answered perfectly, till, becoming partially waterlogged, it would not carry the weight of plants to cover it. The floating power should, therefore, be unaffected by water, say paraffin or other casks pitched, metal tubes as in a pontoon, or metal tanks, cans, or casks. This floating power should be enough to support a stage of either galvanized iron or wood, even after becoming waterlogged, covered with boxes, pans, or pots of plants. The surface of the stage must be of different heights, and supports of different heights must be used, so that the plants requiring different depths of water for their growth will be accommodated ; some will require total immersion, others half immersion, others perhaps only the depth of an inch or less. The raft should be adjusted to the depth required when covered with the plants in their pans, blocks of stone or metal being used to represent them till they are ready, and when a plant is taken off a weight should take its place. I think I could with the aid of our local tradesmen construct a commercial Wilson Raft ; but it would take a longer time to do so than I can give at present, having already more gardening work than I can get through. *George F. Wilson.*

Garden Lanterns.—One can scarcely take up a catalogue or journal without seeing knives, scissors, thermometers, or boilers advertised, yet nowhere have I seen that necessary adjunct to a garden, a lantern, figured in the horticultural press. In a garden of any pretensions a lantern is as indispensable as a boiler, and especially are they serviceable for aiding in catching such garden pests as commit their depredations by night, to say nothing of lighting the young men round the fires, or to look at the temperatures of the houses, &c., yet how little has the lantern been improved since Alfred the Great invented his "lanthorn" for keeping the draught from his candles. All no doubt have read how King Alfred used to notch his candles, dividing them into twelve divisions, one for each hour ; but after careful consideration he found that on some days his candles burned much faster than on others because of the draughts through his glassless windows on windy days. The "hurricane" or stable lamp supplies the great want that must be felt by those who have to carry lanterns this boisterous weather. In construction it is similar to a house lamp, excepting that it has a frame or case to carry it in with a wire guard round the globe (it has no chimney). The glass globe is so constructed that it will not break through the rain falling on it, and the light will not blow out in the most boisterous of weather, hence its name ("hurricane"). We have had one here some time now, and I have tried it all ways, such as by throwing a bowl of water on the glass, slamming doors so that the violent draught blew on it, but instead of it being blown out it flared up much higher. It burns paraffin oil, gives a brilliant uninterrupted light equal to that of a small house lamp. I think no garden ought to be without one or more of these useful lanterns. I enclose a rough sketch of the lantern we have here, which cost us 5*s*. *A. Rowbottom, The Gardens, Gog Magog.* [We gave an illustration of the "hurricane" lamp in August, 1874, p. 177, and have seen nothing since then to surpass it. Eds.]

Cork-tree Bearing Acorns.—We have an enormous crop of acorns in this locality ; every tree is, or has been, quite loaded with them, and the cottagers' pigs are getting quite fat, while the deer in the breeding park were never known to be in such fine condition, and the keepers are aware that they will put both horse and hounds on their mettle when the time comes to catch them to turn into the fatting park. But now I come to what I meant to write about, which is, that two Cork-trees in the pleasure-ground have also an abundant crop. I never remember seeing this but once before. With the exception of a fortnight's very hot weather, it has been anything but a fine spring and summer, and no less than 6 inches of rain fell in August, yet here we have a shy-bearing tree with a fine crop of fruit. We live and learn, yet really how little do we know after all is said and done ? *J. Rust, Eridge Castle.*

The Carrot Crop.—For many years past we have not failed in procuring a good crop of Carrots, but this season they have turned out a very indifferent crop. The earliest sown were the worst, later sowings turning out somewhat better. We flattered ourselves that we had overcome every difficulty in the production of Carrots. It was our practice to trench a piece of ground every year for that purpose, giving

preference to such as Strawberries had been grown on. During the winter we gave a dressing of gas-lime, or the water from the gasworks, and at sowing time drew the drills deep, and filled them with wood ashes on which to sow the seed, which had previously been well rubbed out with sulphur. This past season circumstances prevented my getting the Carrot piece trenched, nor would the state of the soil at the time of sowing admit of its being so firmly trodden down as usual, to which we attributed our partial failure; but on seeing in your pages the experience of Mr. Fish and others, it rather makes me sceptical of the infallibility of my former procedure. This I do know, that in several gardens where the Carrot crop was anything but a certain one such a procedure has been attended with success. The seed this season with us came up well, and looked well till the young plants were a few inches high, when they showed symptoms of grub by flagging, when we had some soot steeped in water and run up the rows. They apparently recovered, but on taking them up, the roots are small and not clean. The Cauliflower crop with us has been all that could be desired—in fact, we have the best Veitch's Autumn Giant it has ever been my good fortune to produce. I may say that all the Brassica tribe with us are pricked out as soon as fit to handle, as Mr. Coleman relates and advises in your issue of November 2. *J. B. S.*

A Large Marrow.—On October 28 I cut a Marrow which measured 40½ inches in circumference and 24 inches in length, and weighed 43¾ lb. It was grown on the same plant that I cut the one which weighed 45 lb. on September 4, and of which I sent you a note. *Wm. Duff, Gr., Fairfield, Lancaster.*

Eucalyptus globulus.—Whilst the hardiness of this tree and its aptitude for an English climate is being discussed it may be interesting to many to know that Messrs. Spenceley & Son, florists, of New Brompton, Kent, have a tree in their ground that has stood out four winters. It is about 14 feet 6 inches high, and looks the picture of health. Messrs. Spenceley's nurseries are in an elevated and exposed situation, the soil is about 3 feet deep, and then comes the chalk, so that the ground may be considered poor. Any one who has passed a winter here will readily testify that this is a bleak place, and anything but a second Ventnor. It is possible that the excellent drainage afforded by the chalk may render the tree less sappy, and better able to stand the effects of frost. *J. H. M.*

Strawberries.—I send you a small sample of the Strawberries we are gathering at present. The variety is Underhill's Sir Harry. I have gathered a large dish for a dinner-party to-night, which I need not say are fully appreciated at this season. The plants are still bearing vigorously, but the fruit will not be so large after this date. *W. Hinds, Otterspool Gardens, November 7.*

Colouring of Grapes.—It may interest some readers to learn that a bunch of Madresfield Court Grapes grown on a Vine trained against a west wall coloured nearly as black as is the usual ripe colour of this fine Grape under glass. The bunch was nearly close to the ground, and was the first fruit produced by a young Vine. Of course they were not ripe, but were not bad eating, nevertheless. I think this fact may have interest for those who are engaged in Grape culture in the open air for wine making, for although the fruit was not ripe the flavour was brisk, and the colouring matter contained in the skins would have proved invaluable. I shall shift this Vine and some others to a south wall next year, and perhaps, should it then fruit, may see that in addition to the improved colour it may fairly well ripen also. Madresfield Court Grape throws some richly-coloured foliage in the open air, but I notice that young Vines of it, Frankenthal, and others keep their foliage green for a long time. No doubt as screen plants Vines are as valuable as any other deciduous climbers. *A. D.*

Yew Poison.—A correspondent in the *Gardeners' Chronicle* of the 9th draws attention to the fact of a donkey having been poisoned by eating Yew foliage: such cases are far from unusual. A gentleman, residing at Liss, lost two valuable horses a few weeks ago in a like manner. They had been standing under a Yew tree whilst the carts were being loaded, and the carters, busy at their work, had not noticed that the horses were eating the branches, or if they observed it were ignorant of its injurious properties, for they were allowed to crop their fill. One horse fell dead as it entered the field in which the master stood directing his men, and when they were trying to disengage him from the harness, the second horse also staggered, nearly falling on his driver. Both animals were opened, and fresh Yew leaves were discovered in their stomachs. It seems singular that so many country gentlemen, as well as their workmen, should be unacquainted with the dangerous qualities of this old English tree, for I believe it has from time immemorial been regarded as very poisonous to animals, though Gerard states that he was wont when a schoolboy to eat the fruit with impunity; but then he never swallowed the seeds, and the poisonous principle lurks in them, not in the pulp. All the old Greek writers mention the Yew as poisonous. Galen, Pliny, and Dioscorides, also attribute noxious effects to it. One ancient writer asserts that it had a pernicious effect on persons who slept under its shade, and Cæsar relates that Catibulus, king of the Eburones, killed himself by drinking the juice of the Yew, but we have not to deal at present with its effects on the head of the animal creation—man: we must go to the inferior creatures—horses, asses, and oxen, all of whom suffer if they venture to browse on the leaves. "Sheep and goats can eat them," I am told in one of my botanical books, "without suffering any evil consequences," but a lady who dined here a few days since said that she had lost several sheep some years ago through their eating some half dead loppings. Deer, too, have died from the same cause, and branches thrown into a pond will stupefy the fish to such a degree that they can be taken out of the water with the hand. Some of our English Yew trees live to a great age, and attain an enormous size. We have one very fine specimen in Liss churchyard, but it is a mere baby Yew tree compared to one I visited last Friday at Selborne—Gilbert White's famed tree, which is in a wonderful state of preservation, and throws its venerable shade on the old church, which has lately been entirely restored. Some writers conjecture that the Yew tree is called Taxus because taxica was a common appellation with the ancients for all kinds of poisons, and others are of opinion that arrows were in days of yore steeped in its juice, but it is very certain that it furnished one engine of warfare in the time of Edward IV., and that was the bow, for there were certain laws made respecting it by that king, directing that every Englishman should have a Yew-wood bough of his own height. *Mrs. Alfred Watney.*

Grapes at Charleville Forest, Tullamore.—Roberts and Charleville are familiar names to many readers of the *Gardeners' Chronicle* and other horticultural papers in connection with the production of Grapes of first-class quality, as evinced time after time at the metropolitan and provincial fruit shows, not only in the Sister Isle, but occasionally in England, and at which shows Mr. Roberts' productions invariably not only took first honours, but report says formed the centre element of attraction. No wonder then that the writer, like many other gardeners aspiring to fame in Grape culture, should be found making a pilgrimage to Tullamore. On my way from the railway station to the gardens I passed through a portion of a beautifully wooded park—the soil of which was a nice yellow loam, but of light texture. Having found Mr. Roberts, who is, notwithtanding his many great achievements in Grape culture (as amply demonstrated in many an exhibition tent), a very unassuming and gentlemanly man, I was received by him very courteously and kindly. The whole of the extensive gardens at Charleville, through which Mr. Roberts kindly conducted me, are thoroughly in character with the established reputation of the place. However, as I may have something to say of the place in general later on, with your permission I will therefore confine my remarks to the vineries, and very briefly tell your readers what I saw there—admitting that I was fully prepared to see unusually large bunches of Grapes, fine in berry and highly finished, and I was not disappointed; but I was not prepared to see a bunch of Grapes—a Gros Guillaume—measuring 2 feet 4 inches across the shoulders, and 2 feet 6 inches long, the weight of which Mr. Roberts estimated at 25 lb., truly a fine bunch in every respect, symmetrical in appearance, with good and even-sized berries, and at the time of my visit (end of September) fairly well coloured—well coloured for such an enormously big bunch. The Vine upon which this bunch was growing, Mr. Roberts informed me, was five years old, but of great thickness for that age, and this year, like most of the other varieties of Vines grown at Charleville, it has made very fine growth; the shoots, in point of size, resembling good-sized walking-sticks, the foliage being correspondingly large and of a leathery feel, and the foot-stalks of the leaves being proportionally strong. The above must not in any way be considered (in point of size) an isolated bunch, inasmuch as there were many other bunches which for size and variety would compare favourably with it. The Muscat of Alexandria (similar to those which carried away the "Veitch Memorial Prize" in Dublin in August last, and which was noticed in the *Gardeners' Chronicle* at the time) were in themselves well worth crossing St. George's Channel to see. They were large in bunch, and fine and regular in berry, and well ripened, being of a fine amber colour. The Black Prince was also very fine, large in bunch and berry, and highly coloured, reminding me very forcibly of those shown at the London shows at one time by the late lamented Mr. William Hill, of Keele Hall; Trebbiano, Syrian, Black Alicante, Black Hamburgh (of which I was too late to see the best), &c., were equally well done. Mr. Roberts, like the majority of growers, does not speak very highly of Golden Champion and the Duke of Buccleuch. I saw a very good example of the Golden Queen (Pearson's) growing in a pot, and carrying five or six bunches, good in berry and fairly good sized bunches, and very compact and well finished. Most of Mr. Roberts' Vines are planted in the outside border, and, if I remember rightly, they are brought into the house under the wall plate, and grown on the short-rod system. *H. W. Ward.*

International Potato.—I scarcely know whether Mr. Douglas is angry with me for not having said anything about the flavour of this Potato, or because I have said something in its favour. I have never said the Potato was of first-class quality, but I have said, and do say, that it is of fair average quality; whilst those who like a softish Potato—that is, not mealy or rough in the mouth, but smooth, dry, and pleasant—get it in the flesh of International. I claim for this Potato that it is at once one of the handsomest and largest cropping kidneys in commerce, equalled only in the latter respect by Magnum Bonum, which it beats by being very much earlier, and therefore can be cleared off long before the other is ripe. If it is not absolutely first-class in table quality on some soils it does not follow that it may not be so elsewhere, and this is found to be the case where it is grown in light poorish soils under ordinary culture, where it produces a splendid crop of superb table tubers. Those who have grown International hitherto have grown it to produce large samples, and therefore have in this way promoted coarseness of quality. It is to this very luxuriant mode of cultivating Potatos now that we owe the cry about lack of quality. The anxiety to get big tubers leads to gross cultivation, the result of which is lack of refinement in the flesh of the tubers, and, of course, lack of flavour. Probably next to ourselves the largest growers of International during the past year was Mr. Clarke, of Christchurch, the raiser of Magnum Bonum, who found it, he tells me, to be a splendid cropper, whilst the quality, as grown in a light peaty loam, is excellent. This testimony is of more value than is the opinion of one who admits that he has not grown it. There is no use in fighting over again the battle as to the relative quality of the newer sorts of Potatos as compared with old ones. No doubt most of us in our youthful days found everything, from ruby lips to Potatos, sweeter and more piquant than we do now that we are getting old and faded. It is not we that have lost our natural palates and found depraved ones—oh, no, not a bit of it. We have not changed with years, but things have. Fruits are not what they were; flowers do not smell as sweet; Potatos have none of the flavour they possessed in our boyish days; the world and all things in it are going to the deuce; and when we are gone it won't be worth living in. This is always the story of crabbed age. *A. D.*

Rapid Growth of Calamus adspersus.—In the large plant-stove here we have a fine specimen of this Palm upwards of 30 feet high, the growth of which during the last eighteen months has been remarkable. The plant in question was removed to the house it now occupies when it was 12 feet high, and since its removal it has grown 18 feet, and is now showing flower. Have any of your numerous correspondents succeeded in flowering this Palm? I may add that after its removal it was put into a large tub and liberally supplied with water and occasional doses of liquid-manure. *J. C. Leslie, Gr., Bolton Hall, Clitheroe.*

An Enemy of the Rose.—I have been bothered very much in the cultivation of my Tea Roses this summer with a little thrips-like insect, which, on looking at through a microscope, I found to have wings, but of which I can find no description in books on Rose culture. Anyhow it is a troublesome little pest. I can get my Roses to grow fast enough with it even in the heat of the summer, but after the first blooms are over they commence work by getting between the petals, and before the bloom is open it is utterly spoiled. I have gone over my plants and taken off all the worst infested blooms and buds, yet before the next lot could open they were as bad or worse. I have used paraffin oil, but to no purpose. I have found that isolated plants sometimes escape it, and that the Teas are the worst infested with it. I was able to compete and hold my own at a show in the neighbourhood before this pest made its appearance. It seems to me that the hot weather brings it on, because I had plenty of good Teas until about July 10. I have read with interest Mr. Prior's remarks on Roses. He says that Teas do best or require a cool and partially shaded position; now that is just what mine have, but I believe the Tea Rose will grow in a hot position and do best there, providing they have a

good depth of soil to grow in. *C. Raffill, The Gardens, Tredegar Park, Newport, Monmouthshire.*

Violets.—I quite agree with what Mr. Fish has said at p. 600, with reference to the production of Violets in autumn, spring, and winter. We have quantities out-of-doors, and have a nice lot in a frame and pots. In June we planted a north border of the enclosed variety, the name of which I should be glad to learn. The plants were kept well watered in dry weather, and grew remarkably well. In the first week in September a frame was provided for them, where they were planted as closely to the glass as possible, and were kept close and shaded for a few days until they had taken root, when the lights were taken off in mild and showery weather. We began to gather from these plants the last week in September, and have been gathering daily ever since. I have every reason to think we shall have plenty to keep us going all through the winter and spring months. Those in pots were potted at the same time as the above were planted, and kept in a close frame until they began to flower. We find them very useful for the conservatory now. We are gathering quantities of the Neapolitan variety, but I think the enclosed is superior to that variety, being much larger with us. *G. Merritt, Kimpton Hoo Gardens, Nov.* 12. [Perhaps Marie Louise. Eds.]

The Grape Tomato.—Mr. Davidson, gr. to Mrs. Marson, of Highfield Park, Winchfield, has succeeded in effecting a most valuable cross between Tomato Hathaway's Excelsior and T. Red Currant, which for productiveness rivals any I have ever seen, and for beauty cannot be matched. The fruit is borne in bunches—Grape form, which average 9 inches in length, with from sixteen to eighteen fruit on a bunch, the berries ranging from 1 to 2 inches in diameter, and of a bright red colour. It also appears to be of most robust constitution, for whilst its seed parent, Excelsior, growing on a west wall, and under precisely the same conditions, succumbed to the Tomato disease a month ago, it is still (November 9) in full fruit with foliage as green as ever. The Red Currant Tomato is also still in full fruit, and has escaped the disease; thus showing that the new seedling inherits its robust constitution from Red Currant, and the size of berries and flavour from Excelsior. Mr. Davidson has several other good hybrids from the same parents, one very similar to that just described, only that the bunches do not average more than 6 inches in length, and another with bunches slightly longer but with smaller berries; and although these are both good, the first described is so much superior that he has determined to retain that only. He has appropriately given to it the name of "Grape" Tomato. *W. W.*

Salvia patens shedding its Buds.—I have always attributed the premature shedding of buds of the Salvia patens to great heat and drought, but it is probable that it withstands the strong summer heat badly, whilst it thrives gloriously in the cool autumn. It is a grand plant in the North all through the summer, where our summer heats are not common. Moisture to the roots can be given, but the excessive heat of the atmosphere can hardly be reduced here. *A. D.*

Protecting Aloysia citriodora.—In the east front of the conservatory and west end of the Italian garden, and on either side the steps descending thereto from the terrace at Frognall, Foots Cray, the residence of Earl Sydney, in Kent, were growing some eight years ago, and I dare say are still, two fine specimens of the above much esteemed and agreeably-scented shrub, and which on the approach of winter were protected in the following manner. The shoots being tied into shape, coal ashes to the depth of 6 inches were placed on the soil immediately over the roots, then a few Hazel sticks sufficient in number, and of proportionate strength for the purpose, were stuck in the ground at about 9 inches apart, and the space (about 4 inches when closely packed) between the sticks and the plant filled with dry Bracken, the former drawn together and tied neatly and securely at the top, after the fashion of a nurseryman's plant basket, after which the whole was trimmed neatly round; thus when finished presenting the appearance of two huge cones. In this way Mr. Thomas Marsh, Lord Sydney's able gardener, made his "Lemon plants," as they are commonly called, perfectly secure, let the winter be ever so severe. They were uncovered again in the following March or April, according to the state of the weather. *H. W. W.*

Packing Flowers.—I find no better way of sending flowers to any distance than packing them in shallow boxes 3 or 4 inches deep, by about 20 inches long and 15 broad or so. The flowers should be laid in-and-in with leaves, ferns, and mosses, which in decoration will be of as great value as the flowers. For example, in the bottom of one box nearly filled to the top may be put variegated Periwinkle, and bunches of Pelargonium, Heliotrope, &c., may be stuck over this layer with ease; around the flowers on the top may be put Adiantum Fern and Selaginella, or any other soft leaves. Again, fill another box with Acacia Riceana, stud this bed of elasticity with, say, Roses; bundles of Violets, bunches of Lily of the Valley; Epacris, and Heaths may be put on the top around. Very soft and tender flowers, such as Eucharis, white Camellias, and some Orchids, and others may be put in the same boxes, but with the greater care of a sheet of cotton-wool put below and above. The principle in this mode of packing is this, that you make a bed of green on which to carry the flowers, and if carefully bunched together previously they ride wonderfully well to their destination. From two to four boxes may be corded together, and in this way they are less liable to rough usage on the rail. Where smaller quantities of flowers are wanted the same principle holds good with smaller boxes, and you have the advantage of cheapness as compared with the more elaborate mode of a large box with trays, &c., for the rough sawn wood answers perfectly. Cleanliness and as little handling as possible must be the objects aimed at; while in winter flowers may be cut in the morning and sent by day train in the summer they must be cut in the evening and sent during night by the last train. Buttonhole bouquets carry well put into tissue-paper and carefully and neatly twisted at each end. Of course, in using a word such as "put" and "carefully" more is meant than one can express here, and it all depends on the way these flowers are in reality put in these boxes and handled. Send flowers as you may there will of necessity always be a good few of them damaged, rendered useless on arrival on account of bad usage on rail, or from being sent to the station in a non-spring cart; or, as is the case often, too much fingering on packing, and the flowers too much advanced when cut. Roses should only be half opened when cut, and so with other flowers—select those most firm, budding, opening. Tin boxes may be used in summer. What I have used in this way are old powder-boxes, which are bought at a cheap rate. One side is cut open with a preserved meat-tin knife three parts round, leaving one side as a hinge, and with the lid is in reality one piece. After the Violets, Roses, or other flowers are put in the lid is simply fastened down at one corner with a flat bit of stick. One of these boxes filled with Violets mixed with their own leaves will travel from one end of England to the other of Scotland if rolled in strong brown paper, so that powder-boxes may be put to a peaceable use after they are emptied of their unpeaceable contents. *Chevalier.*

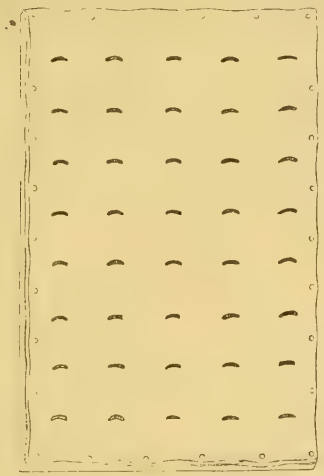


Fig. 106.—CUT FLOWER TRAY, ⅛ REAL SIZE.

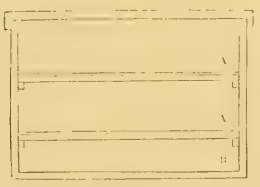


Fig. 107.—END SECTION OF A CUT FLOWER BOX.
A, A, Trays in position; B, Space for Salads, &c.

—— I send a pattern of a tray (fig. 106) and an end section of a box (fig. 107) that I have used for several years for sending flowers by rail, and which has always given great satisfaction. The tray consists of a piece of deal or other wood half an inch thick, on one side of which is placed a covering of thick flannel or felt, drilled with holes through the flannel and wood, and laced with elastic. The rows of elastic binders are about 3 inches apart, but I have some trays in which a greater width is given to suit larger flowers. I always damp the flannel well before putting the stalks of flowers under the elastic. As when so held in position they never move, I find that flowers stand the rough usage at railway stations much better than those packed in any other way; and I have sent some regularly for a distance of 600 miles, which always arrived in first-class condition. The dimensions of a box for two trays are:—Length, 28 inches; width, 18 inches; depth, 12 inches. Ssmall hooks are attached to the trays to keep them from moving. *Mac.*

Potatos: The Blue Fluke.—In answer to F. Douglas, in the last week's *Gardeners' Chronicle*, respecting a Potato suitable for ordinary field culture, I know that of all the varieties of Potatos I grow, which are not a few, for flavour I prefer the Blue Fluke. I have been an exhibitor at the International Potato shows since their commencement, and although in my success I have had little to boast of, I have had an eye to the improvements in shape, size, and other reported good qualities. But for the use of the family, after the garden stock is exhausted, and also for my own use for winter, there is no Potato I would prefer to the Round Blue or Blue Fluke, the latter the most improved type of Blue. It is quite a ball of flour in such a season as this; being of a pure white, with fine flavour, a heavy cropper, and generally pretty free from disease, and in every way quite suitable for the field, but it is all the better for having about 3 feet of a ridge. *R. Farquhar, Fyvie Castle, Fyvie, Nov.* 11.

Bulstrode Park.—I have read with pleased interest the notes upon the Bulstrode estate at p. 587, but I would submit, subject to correction, that the legend of the origin of the title of the estate given by "H. M." is not identical with that handed down in the locality by oral tradition. I am not going to assert that tradition in any shape exacts belief; it may be as lying a jade as rumour, but no doubt all traditional stories and legends have in them an element of truth, although that original truth may have become in time strangely perverted. The story current at Gerrard's Cross at the time of my residence there, more than twenty years since, was that when the troops sent to attack Bulstrode were encamped on the high-land opposite to the house the defenders gathered together at night a large number of bulls, and tying lighted torches to their tails drove them, maddened with fright and pain, into the enemy's camp, and in this novel way put the attackers to the rout. I will not say that it offered the slightest verification of the story, but it at least shows what was the nature of the local tradition when I remark, that in times gone by, on the sign of the "Bull Inn," adjacent to the park, was depicted a bull raving and rampant, with his tail in the air, bearing no indistinct resemblance to that celebrated model of the British lion when defiant that used to adorn the portals of Northumberland House. There is room for a slight correction in the statement that "the park does not contain a single level acre." When I resided at Gerrard's Cross I used often to play at cricket in the park, which was, thanks to the liberality of the Duke of Somerset, always open freely and at all times. There was a capital playground of several acres just below the "Bull Inn," and close by also was the enclosed space which was supposed to have formed the entrenched camp of the besiegers. In my time the earthworks surrounding this plateau formed the home of myriads of rabbits, and looking at the singular fecundity that characterises these active denizens of earth, no doubt their posterity are as abundant at this day. Between the Gerrard's Cross entrance to the park and the house ran a beautiful verdant valley finely timbered, and from this entrance to the Hedgerly Lodge at the farther end of the valley, about a mile distant, was a favourite drive and walk of the neighbouring residents. Gerrard's Cross lies high, and is reached by a pleasant drive of about 4½ miles from Uxbridge, or by a very nice and varied journey of about 5 miles from Slough, passing by Roke Court, Wrexham, and Fulmer, a charming little village that twenty years since might have been

mistaken for Goldsmith's "sweet Auburn." In the reverse direction the road from Gerrard's Cross leads through the Chalfonts, in one of which is still shown a some time residence of John Milton, and thence on to Amersham, where prominent lies the fine estate of the Drakes, Shardeloes, where still dwells that veteran gardener, Mr. Bailey. The high road which passes over Gerrard's Cross Common from London and Uxbridge passes within a few miles through Beaconsfield, a small place with a big and now historic name, and thence through Wycombe to Oxford, and beyond. Jaded tourists might find some new sensation if they would take to the highways of their native land and explore its many beauties. *A. D.*

Paraffin as an Insecticide.—I wish to add my testimony to the many that have already appeared in your pages as to the merits of paraffin in the destruction of mealy-bug. I had a quantity of Gardenias badly infected with this worst of all parasites. After reading Mr. Knight's note I treated them to dose No. 1, which proved very unsatisfactory, the bug next day being as lively as ever; dose No. 2 was equally unsatisfactory. It then occurred to me that the oil might be at fault, so I obtained a fresh supply, and asked to have the best. I then gave them doses 3 and 4, which has quite cleared the plants, without the slightest injury to the foliage, so that any who may have tried the remedy without success I would advise them to change the oil. *W. W.*

Liverpool and Kingston Chrysanthemum Shows.—I read with much interest the announcement of the date of the Liverpool Chrysanthemum Show, and at once applied for a schedule, with which I must confess I was somewhat disappointed. The special prizes of five, three, and two guineas are not offered for incurved blooms, as stated at p. 567 (and also some months ago when the scheme was first set on foot), but for twenty-four cut blooms of large flowered Chrysanthemums. Besides, competitors in this class (A) cannot compete for the other prizes offered in the schedule. There are only three other classes for cut blooms, viz., for eighteen, twelve and six large flowered vars. respectively, the prize money amounting to £4 19*s.*, and £17 18*s.* for Chrysanthemum plants in pots. This certainly does not say much for Liverpool, and especially as this is its sixteenth annual exhibition. Let us contrast this with our neighbouring society at Kingston, which holds its second annual exhibition on the 21st and 22d. Here we find £21 10*s.* offered for Chrysanthemums in pots; £15 4*s.*, and two silver cups, each valued at £5, for cut blooms—apart from what is offered for cottagers. The above amounts are offered in classes for Japanese, reflexed, incurved, Anemone-flowered and Pompon varieties, while at Liverpool the prizes are offered for large flowered and Pompons only. It is also worthy of remark, that at Kingston any competitor may compete in as many classes as he thinks proper to enter in—a liberal condition in the schedule that I hope may induce some of the Northern growers to pay a visit to Kingston. I wish to ask, with reference to the Liverpool show, whether we are to understand that the announcement in these pages is correct respecting the twenty-four cut blooms, or whether the schedule is to be taken as right? If the latter is correct, I suppose we may expect to see or hear of Japanese, incurved, reflexed, and Anemone Chrysanthemums (large varieties), all in harmony, in the various stands for competition, as I presume they will all be admissible according to the discretion of the competitors. Will they not? I don't see anything in the schedule to the contrary. *J. Ollerhead, Wimbledon House, S.W.* [Will the Secretary of the Liverpool please decide this question? EDS.]

Scarcity of Berries in Yorkshire.—At p. 597 I noticed a paragraph stating that Haws are plentiful, and that the birds have a good stock of food in store for a hard winter. Your correspondent does not say where this great supply of birds' food grows [a southern county]. It is not in this part of Yorkshire, for we have neither Haws, Holly berries, nor Mountain Ash berries, so that the birds have a sorry time to look forward to if we should have a hard winter. Apples and Pears had to be gathered long before they were ripe on account of the birds being so ravenous through the month of September and early part of October. Our Pears on the walls were all netted, otherwise they would all have been spoiled. In September they usually feed on the White Beam tree berries; this year we have none in the country. Then come the Mountain Ash berries, next Haws; the Holly berries are left to the last. In mild winters here, and if other food be plentiful, the latter are never eaten, which shows that they are not fond of them, but eat them because they cannot get anything else. This morning in our village—Snape—many of the cottagers have had to cut their way out of the houses, the fall of snow was so great and sudden, with a very high wind, so that the roads and doorways were blocked up in many places. I carefully measured the depth of the snow in the open in several places and found it to be 9 inches deep; this, with 9° of frost at some time in the night, has put the birds on their mettle this morning. Some are rushing there, and some there, in search of food, and find none; others are sitting in the Holly bushes in despair, as if waiting until the berries grow. While I am writing the snow is going away fast. *William Culverwell, Thorpe Perrow, November 12.*

Barbarossa and Black Alicante Grapes.—In looking through the beautiful and extensive gardens at Moore Abbey, the seat of the Marquis of Drogheda, in the county of Kildare, Ireland, a short time ago, I noticed some fine examples of the above. Truly noble-looking Grapes they were, growing on young Vines planted some two or three years since in some new vineries adjoining the new range; the bunches large and compact, the berries fine and beautifully coloured, reminding me very much of the Grapes I had seen the previous day at Charleville Forest. The Vines have made unusually fine growth this season, wood thick, short-jointed, and beautifully ripened, and showing very prominently some very plump eyes, some of which (I should not in the least be surprised to hear it) may perhaps produce some sensational bunches next year. Fruit and plants are done equally well by Mr. P. Wadd, the head gardener; some of the latter (Crotons) are the largest and finest I ever saw, of which more anon. *H. W. W.*

Foreign Correspondence.

KIEFF: *Hedges in Russia.*—Among those things which people here have no idea of as yet, either in town or country, the use and cultivation of a hedge deserve particular mention. In England a good deal has been written against the dense and innumerable hedgerows that occupy so much space, and perhaps the objections raised against them may have some foundation. But still all farmers, and gardeners especially, understand that hedges, if moderately and discriminately used, are indispensable for the protection and shelter of crops against cold cutting winds, or as fences against encroachments. Nothing, too, can be so economical in some districts or so sightly as a Hawthorn hedge by the roadside. Even when we find it necessary to have a wooden paling we consider it desirable to cover its nakedness by planting a hedge of Privet or Thorn inside. But in Russia a hedge is quite unknown, at least except in some places, where I have introduced it myself, I have never seen anything like it. In the country the common fence is made of strong uprights driven into the ground, and with Willow or Hazel branches plaited horizontally between them. Sometimes these fences are formed with great pains and even taste. They are generally very strong, but require to be renewed every five or six years, if not sooner, and the expense is considerable. For the most part, however, especially round the cottages of the peasants, who have but little money and still less taste in such matters, they are unsightly enough.

It is true that if hedges were only to be formed of Hawthorn and Privet, or of any other plant usually employed in England for such a purpose, the expense and time required would make such fences quite impossible in such a country as this, especially in the more southern provinces. But no country can be more favoured with respect to suitable plants for hedges; at least there is one which surpasses all others I have yet seen anywhere, that is, the common white Acacia [Robinia]. This species grows freely in every wood and garden all over the country. As a tree it attains the largest size, and is remarkable for its graceful form and the lively green of its foliage. Its wood is exceedingly hard and pliable, and on that account is much esteemed for every kind of agricultural implement. No spade-handle will last half so long, at least here where the peasants employed in gardens are but too ready to use a spade as they do a hatchet; for hayrakes, too, it is unequalled, as the teeth almost never break. The light carts and wooden ploughs used by the peasants are for the most part formed of Acacia. But still it is not a wood that is easy to work except with a saw, for it is so hard that it will spoil the best hatchet very soon. It is perhaps for this reason that it is but little used in the construction of the log-houses or huts of the peasants, for otherwise it would be much cheaper than the Oak used for uprights, and quite as durable.

Wherever this tree grows there are always a great many offshoots from the roots, and these in the course of a single summer attain the length of 5 or 6 feet, sometimes much more. It is indeed difficult to get rid of them altogether. By the autumn these shoots are ready for hedges, but with the second year's growth they are still more suitable, being of course much stronger; and to have an effective hedge as soon as possible, or rather at once, it is desirable to choose such as have the stems at least an inch in diameter and 4 feet high, about 8 or 10 inches apart, with younger plants between them. In this way it is easy enough to have an excellent hedge in the course of two or three years at most, especially if the Acacias are planted thickly. It is advisable to plant them in trenches at least 1 foot deep any time after September, and to leave the trenches only partially covered in so as to provide a receptacle for water or snow. But they may also be planted of any convenient size, either as hedges or trees, in the spring to the very time of budding. No plant or young tree thrives more readily; the roots seem to be imperishable, but the extremities of the young shoots are rather delicate and often killed in winter. In spring the leaves shrink with the slightest touch of frost. But it happens that this tree is always the last to come into leaf.

So easy is it to have a hedge here in a comparatively short time, and one valuable property of this hedge is that it is so covered with terrible thorns that neither man nor beast will venture to go through it. When well looked after and trimmed it becomes as pretty as it is effective, and if grown high enough—say 6 feet—it will produce innumerable panicles of flowers.

The common Laburnum, called here the Yellow Acacia, is also plentiful, and makes an excellent hedge, but it does not grow so quickly or become so strong as the white Acacia. It is very suitable for sheltering early crops, but having no thorns it does not make so good a fence as the other. But in this country people are so wedded to their old routine that it may be a long time before hedges will be adopted either for utility or ornament. The usual mode of forming external enclosures here is to make a wide, deep ditch, with a fence of branches, such as I have described, on the top of the earth thrown up. Sometimes the earth is planted with Lycium barbarum. When fairly established this sort of enclosure is also effective enough, as the Lycium grows so dense as to be quite impenetrable. This plant, however, is only suitable for the roadside, like Brambles in England. It abounds in gardens that have been long neglected, and cannot be easily extirpated. No crops will thrive where it is, and it seems that the only way of getting rid of it is to cover the ground for a year or two with plenty of manure.

To keep hedges in order, a hedge-bill of course is of the very first importance, and that is a tool of which no person here has the most remote idea, except perhaps in Toola or Moscow. Some three or four years ago I succeeded in finding after two or three days' searching, the only one to be had in all Kieff. But if people do not understand the use of it why should they require it? In this town there are plenty of hardware shops and almost everything may be had, but with respect to garden tools there is a good deal to be said, and perhaps I may trouble you with a few notes on the subject at another time for the benefit of garden tool-makers in England. *P. F. Keir.* [Please do so. EDS.]

Notices of Books.

The Herefordshire Pomona, *containing coloured figures and descriptions of the most esteemed kinds of Apples and Pears.* Edited by Robert Hogg, LL.D., &c. (Hardwicke & Bogue.) Part 1, 4to, tab. col. 6.

We have already mentioned the publication of the first part of this important publication, but its merits and interest are such as amply to justify a more extended notice. Some time since the Woolhope Naturalists' Field Club, already favourably distinguished for its good work in promoting the knowledge of the natural products of Herefordshire, and particularly of its fungi and its trees, undertook to prepare and publish a work illustrative of the Apples and Pears for which the county is famous. As time went on the interest increased, and it was determined not to restrict the scope of the work entirely to Herefordshire fruits proper but to extend it so as to include fruits more widely known and appreciated. To this end the Club

secured the services of Dr. Hogg, in order to be sure of the correct nomenclature of the varieties figured. The part before us opens with a very readable and interesting account of the early history of the Apple and Pear, put together with much pains and skill by Dr. Bull, who has availed himself for this purpose of literature, sacred and profane, from the time of Homer downwards. The legends, the folk-lore, the history are all treated of with the same fulness and with the same lightness of touch which characterised the author's paper on the Mistleto. Where so much is given, and so well, it seems ungracious to comment on the relative absence of particulars concerning what we may call the botanical history of the Apple and Pear. And yet the botanical history and the geographical distribution of the wild kinds, their original habitat, and their subsequent dispersion, are not only interesting subjects from a strictly scientific point of view, but they are interwoven in a very curious and suggestive way with the legends and the archæological history of Indo-Germanic races. De Candolle's *Géographie Botanique*, Karl Koch's papers, Decaisne's *Jardin Fruitier*, would furnish the clue to much additional matter of interest contained in less generally accessible sources. The very singular connection between the Arthurian legend of the island of berries, and the small-fruited Armorican Pear which has representatives in Persia and on our own south-western coasts, was pointed out some few years since in these columns by Dr. Phené, and forms one of the most curious illustrations of the mutual assistance and support which archæological and biological science may afford one to the other, and supplies also a basis for reasonable conjecture as to the origin of some of the best known races of Pears.

Following this article on the history of the Apple and Pear is one devoted to the career of the late Thomas Andrew Knight, illustrated by the portrait which has already appeared in these columns. The principal points in Mr. Knight's useful and distinguished career are alluded to, but little or nothing is added to what has been published elsewhere concerning the life of this eminent physiologist. This article also is the work of the accomplished and energetic Dr. Bull. In an appendix to this paper is given a descriptive list of the different Apples to which prizes were awarded by the Agricultural Society of Herefordshire from 1797 to 1809.

The two essays we have alluded to form the preface, as it were, to the systematic description of the Apples and Pears, of which illustrations are given in chromolithography, and by means of woodcuts. The chromolithographs are admirable, among the best we have ever seen. They are the work of M. Severeyns, of Brussels, and for brilliancy and fidelity of colouring leave little to be desired. The woodcuts, on the other hand, are very coarse specimens of the art, and rather deface an otherwise splendid book. The first plate is devoted to the Fox-whelp Apple (see *Gard. Chron.* 1876, vol. v., p. 273), the favourite cider Apple of Herefordshire. An interesting descriptive article is given, we presume, also from the pen of Dr. Bull. A variety of Apples and Pears are illustrated in the remaining five plates. These chromolithographs are so good that we trust the work will be continued so as to supply a long-felt want—that of a well-selected series of figures of the best and most useful Apples and Pears. It would add greatly to the value of these plates if the foliage and flowers were represented as well as the fruit. The power of recognising a particular variety by the flower or leaf is frequently as important to the amateur or to the gardener as the faculty of recognising the fruit. We trust the Woolhope Club will be liberally supported in this its last enterprise, for truly the plates are so excellent that every support ought to be given to it.

The Botany of Three Historical Records, &c. By A. Stephen Wilson. Edinburgh: David Douglas.

When it is stated that the subject-matter of this volume is devoted to Pharaoh's Dream, The Sower, and the King's Measure, it will be seen that the book is somewhat discursive. That it is of great interest may be inferred from the preface, in which we find this passage:—"If we can find out the character of the corn which Pharaoh's dream regarded as symbolical of plenty, some comparison may be made between ancient and modern views of the best forms of the cereals. If we can find out what was implied in the botanical illustrations of the parable of the Sower, the progress of Eastern civilisation 2000 years ago will become historically more vivid. If we can find out what was regarded as the weight of a corn of Wheat about the thirteenth century we may be the better able to penetrate to the meaning of the forces which sought to mould the commercial history of Britain." In the "Botany of Pharaoh's Dream" the early history of cereals in general is discussed, and the question raised as to what was the true nature of "the seven ears of corn upon one stalk, rank and good, and behold seven thin ears, and blasted with the east wind, sprang up after them, and the seven thin ears devoured the seven rank and full ears." After mentioning the various explanations that have been given of this passage the author concludes that the dream of Pharaoh "was a vision of fertile tillering—seven thick and seven thin stalks all originating from one stock."

The parable of the Sower is explained by the fact that some seeds yield better produce and more abundant yield than others, as shown by the results of selection as practised by Major Hallett:—"It was not some fields nor some good grounds which returned thirty, sixty, and a hundredfold; it was some of the seeds, all equally thrown into a common good ground, which gave these returns. Each seed was an individual personation, and according to its species, capacity of expansion, and other circumstances, it threw an ear of thirty grains, or any other number up to a hundred; the three numbers given being merely typical of good ears under the local conditions of husbandry to which the imagery of the parable appealed."

The third essay, "The Botany of the King's Measure" starts with the proposition that the weights and measures of England were initially derived from the weight of thirty-two grains of Wheat. Hence becomes important to ascertain what is the weight of thirty-two grains of Wheat. We cannot follow the author in his curious disquisition, nor in his elaborate weighings of various corns of Wheat from different varieties, it must suffice to add his final remark, as follows:—"Thus with the assumption that the thirty-two Wheat grains and the King's measure were equal to thirty-two troy grains, one large section of British metrological history becomes organic and clear."

Reports of Societies.

Meteorological: *Nov.* 7.—The second of a course of six lectures on meteorology, under the auspices of this Society, was delivered on Thursday evening, the 7th inst., at the Institution of Civil Engineers, by Mr. J. K. Laughton, M.A., F.R.A.S., the subject being "Air Temperature, its distribution and range." Mr. C. Greaves, President, occupied the chair. After calling attention to the importance of climatic knowledge the lecturer dwelt on the fact that though all heat, as affecting climate, emanates directly or indirectly from the sun, air temperatures have but little relation to latitude, except when the distances are very great. He illustrated this by reference to isothermal and other maps, and went on to speak in some detail of the several causes of the disagreement between isotherms and parallels of latitude. Locally, there is a very great difference between the temperature of adjacent localities on account of the sunny aspect or sheltered situation of one as compared to others, as is shown in an extreme degree by reference to such places as the Undercliff of the Isle of Wight, but geographically a cause of very considerable importance is the nature of the soil. The air over sandy or sterile ground is heated by direct contact and by radiation to a degree far in excess of what happens to air resting on grass-grown or verdant plains, and the heat, proceeding from an obscure source, is unable to escape through the air, just as obscure heat rays may be caught and accumulated in closed conservatories or in a glass-covered box, so that the air may be raised to a very high temperature. Several instances are on record of a temperature of 130° Fahr. being observed under such circumstances. On the other hand, when the solar heat falls on ground, whether grassy or snow-covered, that will not easily part with it the air may remain cool or even cold, as is found in our everyday experience in summer of the pleasantness of a field path as compared with a high road, and as is shown most remarkably by the great power of the direct rays of the sun in the Arctic or at elevated stations in the Alps or Himalayas whilst the snow is lying all around, and the temperature of the air is far below freezing point. But greater far than the effects of differences of soil are the effects of ocean currents, which warm the air to an almost incredible degree. Mr. Croll has calculated that the surface-water of the North Atlantic, if deprived of the Gulf stream, would be reduced to a temperature very far below freezing point; that the heat which the Gulf Stream disperses into the superincumbent air would, if converted into power, be equal to the united force of some 400,000,000 of ships such as our largest iron-clads. This heat thrown into the air is wafted by the S.W. winds over N.W. Europe and very largely over our own country. It is this that makes the extreme difference between the climate on this side the Atlantic and that on the other. That gives us green fields and open harbours during the winter, whilst in Labrador or Newfoundland they are buried in snow or choked with ice. The carrying power of water is so great, as compared with that of air, that the climatic effect of wind heated by contact with hot earth is relatively small. The sirocco of the Mediterranean, a wind heated over the great African desert, has often been referred to as the "snow eater" of Switzerland. This has been proved to be a mistake. The snow-eating wind of Switzerland is a wind from the Atlantic, warmed by the Gulf Stream, and rendered dry and hot by the condensation of its vapour as it passes over the mountains. Similar winds have been observed in many different parts of the world—in New Zealand, in Norway, in Greenland, and in North America, where their peculiar dryness, carrying off all moisture, renders the grass so inflammable that the smallest accidental spark lights up a fire which may spread over a country, and is then the cause of those immense prairies which are a distinctive feature of North American geography. But such winds are quite distinct from such winds as blow from the Sahara or the stony desert of Australia, or from many other sterile tracts of country; winds which are merely the escape of air heated to an extreme degree by contact with the burning soil. These hot winds are for the most part merely disagreeable, but cold winds are very often dangerous; in the North-west States of America a cold wind, ushering in a violent snowstorm, caused the death of more than 300 people in January, 1873; and in many other localities a cold wind, bringing in a sudden fall of temperature through 40° or 50°, is always a cause of grave anxiety. Our English Blackthorn winter in April or May is only one, and a subdued, instance of the ill-effects of such cold spells. The presence of moisture in the air by checking radiation from the ground by night or during the winter softens the rigour of the seasons, makes the summers less hot, the winters less cold. It is this that constitutes the difference between "insular" and "continental" climates; it is the want of the vapour screen which causes these excessive climates such as we read of in the East, where, as near Khiva, a summer of more than tropical fervour is succeeded by a winter of arctic rigour; in a very extreme degree the climate of Astrakhan contrasts with that of Fuegia, and yet the mean temperature of the two is about the same; but in the one the seasons are excessive, in the other the difference is but small. The difference in the produce of the two countries is thus very great; in the one hardy plants requiring great heat, but able to withstand the cold; in the other plants of a more tender nature which can flourish with a very moderate amount of warmth; in the one Grapes and corn; in the other Fuchsias and Veronicas. In studying climate, therefore, it is necessary to observe not only the greatest heat and the greatest cold, but also the mean temperature. These can only be observed by means of thermometers, for personal feelings may be the effects of many other causes, of wind or evaporation, or state of health, or peculiarity of constitution, and are absolutely no index to the state of air temperature.

The lecturer then proceeded to speak of the different kinds of thermometers, several of which were exhibited, and of the several stands for sheltering them. The Meteorological Society has decided positively in favour of the Stevenson stand, and directs its observers to record the temperature at 9 A.M. and 9 P.M., as well as the highest and lowest, as registered by the maximum and minimum thermometers. He then described some novel and ingenious contrivances for automatic registering, such as the "Turnover" of Messrs. Negretti & Zambra, and the "Chronothermometer" of Mr. Stanley; and concluded by pointing out that these instruments were but a means to an end, and that the study of climate was the study of Nature in one of her most beautiful and most varied aspects.

Scottish Arboricultural; *Nov.* 5.—The twenty-fifth annual general meeting of the Scottish Aboricultural Society was held on the 5th inst., at the Royal Botanic Gardens, Edinburgh. There was an unusually large attendance of members. Professor J.

H. Balfour, Vice-President, occupied the chair in the absence of the Right Hon. W. P. Adam, M.P., President. The Chairman, in opening the proceedings, congratulated the Society on the prosperity which had attended it during the past year. He referred to the very interesting excursion which the members of the Society had enjoyed during the summer to the woods of Scone, and to the admirable system of forest management which they had been privileged to inspect. Passing on to refer to the Edinburgh Arboretum, he complained of the tardiness of the Government in completing the arrangements for laying out the walks, &c. Until these arrangements were completed there was no chance of instituting a school of forestry here, and until the school had been established arboriculture, he contended, would never be properly or efficiently taught in Scotland.

On the motion of Mr. France, Penicuik, seconded by Mr. M'Corquodale, Scone, it was agreed that the general meeting should in future be held on the first Tuesday of October instead of the first Tuesday of November. Thirty-six new members were duly elected. Mr. George Crichton, treasurer, submitted his report for the past year, which stated that the sinking fund had been increased, and the Council had invested £276 in a Bank of Scotland share. The capital of the Society now amounted to £325. The general fund reached now £57, or an increase of £9. The report was approved of, and Mr. Crichton was appointed a trustee of the Society in room of Professor Balfour. Mr. Sadler, secretary, read a letter received from Mr. Alex. Buchan, M.A., secretary Scottish Meteorological Society, in regard to the Society's station at Carnwath Woods. He felt regret that an accident seven weeks ago, which still deprived him of the use of his right arm, would prevent him laying a report on the Carnwath observations before the Society this year. Mr. Fotheringham, the observer, had intimated some months ago that he would not be able to continue the observations, and the probability at present was that they would not be resumed. In these circumstances, the best course to follow would be to allow the matter to lie over till next year, and that the report then should go more into detail than previous reports, and go back on the observations from the commencement, so as to embody a general view of all the results to be arrived at from the observations. On the motion of the Chairman, Mr. Buchan's suggestion was agreed to. The report of the Society's excursion to Scone Woods in August was adopted, and votes of thanks were accorded to the Earl of Mansfield and to Mr. McCorquodale for their reception of the Society. Dr. Cleghorn gave in the report of the judges as to the competitive essays. The awards were as follows :—

On the planting of deer forests with timber trees for shelter (Silver Medal), D. F. Mackenzie, forester, Murthly Castle. Report on the culture and management of Picea Nordmanniana (Silver Medal), Angus D. Webster, assistant forester, Penrhyn Castle, North Wales. The forestry of Scotland (Gold Medal), R. Hutchison, of Carlowrie. (Mr. Hutchison presented the value of the medal to the funds of the Society.) The British Elms (Gold Medal), G. S. Boulger, London. Die Douglas Fichte und einige andere Nadelhölzer (Honourable Mention), John Booth, of Flotbeck Nurseries, Hamburg. Peeling and harvesting of native bark used in tanning (Silver Medal), R. Ross, assistant forester, Darnaway Castle. Report on the plantations growing on an estate (1st Silver Medal), D. F. Mackenzie, Murthly Castle. Report on the old and remarkable trees on the estate of Gordon Castle (Gold Medal), James Webster, Gordon Castle. Report on the old and remarkable trees in the Island of Bute (1st Silver Medal), Jas. Kay, Bute Estates. Report on the old and remarkable trees growing on the estate of Ardkinglas, Argyleshire (1st Silver Medal), Thos. Wilkie, Ardkinglas. Accounts, &c., of A. and B. estates (Silver Medal), D. F. Mackenzie. The forests of South Africa, by the Rev. John Croumbie Brown, LL.D., recommended for publication. Collection of cones from Kent (Gold Medal), Malcolm M'Lean, Vinters Park, Maidstone. Collection of cones (Gold Medal), James Duff, wood manager, Bayham Abbey, Kent.

The following office-bearers were elected for the ensuing year :—

President—The Right Hon. W. P. Adam, of Blairadam, M.P. Vice-Presidents—Professor John Hutton Balfour, Edinburgh ; Thomas Methven, Edinburgh ; Robert Hutchison, of Carlowrie ; Sir George D. Clerk, Bart., Penicuik House ; and Hugh Cleghorn, M.D., of Stravithie. Council—Messrs. William Gilchrist, Cluny Castle ; Malcolm Dunn, the Palace Gardens, Dalkeith ; William Gorrie, of Rait Lodge ; James Robertson, Panmure House ; Alexander Richardson, Arniston ; John M'Gregor, Ladywell ; C. Y. Michie, Cullen House ; John Grant Thomson, Grantown ; Charles S. France, Penicuik House ; D. Scott, Darnaway Castle ; William M'Corquodale, Scone ; John M'Laren, Hopetoun ; John Lamont, of Messrs. Lamont & Son, The Glen Nurseries, Musselburgh ; James Alexander, jun., of Messrs. Dicksons & Co., Edinburgh ; John Anderson, Perth. Secretary —John Sadler, Royal Botanic Garden, Edinburgh. Treasurer — George Crichton, Edinburgh. Auditor—John Ord Mackenzie, of Dolphinton, W.S. Judges—Dr. Cleghorn, Mr. James Robertson, Panmure House ; Mr. Wm. Gorrie, Rait Lodge ; and Mr. Sadler, Editor of the *Transactions* of the Society.

A ROYAL CHARTER FOR THE SOCIETY.—Mr. France, Penicuik, moved "That this general meeting pledges itself to use all the necessary means for getting a Royal charter for the Society with as much despatch as possible, and that the whole question be remitted to the Council to inquire as to the mode of procedure necessary for obtaining the charter." He dwelt on the advantages which a Royal charter would give the Society. It would give them an educational status ; for, possessed of a charter, they might appoint an examining board, and issue diplomas to competent foresters."

Mr. R. Hutchison, of Carlowrie, seconded the motion, and stated that their President quite approved of the object, and believed there would be little difficulty in securing what was desired.

After some discussion, the motion was agreed to unanimously.

THE EDINBURGH ARBORETUM. — Mr. Thomas Methven brought under the attention of the Society the condition of the Edinburgh Arboretum. The Town Council had paid £19,000 for the Arboretum, but the Government had done nothing to it, though they had promised everything, and it was now allowed to lie as a wilderness. He was quite sure that the Town Council would be glad if this question were opened up, and he suggested that a deputation from the Society should wait upon the Council to urge them to make a strong remonstrance to the Government, who had, in connection with the Arboretum, dealt most ungenerously with the city. They had all anticipated that there would have been a School of Forestry established in connection with the Arboretum. He moved that a deputation be appointed to wait on the Town Council, and also, if necessary, upon the Government.

Mr. Dunn, Dalkeith Palace, seconded the motion, and spoke of the importance of the Arboretum as an adjunct to a School of Forestry, which he contended should be established. It was utterly out of the question to compare the Arboretum with the forests of France or Germany, but he held that it would prove of much scientific benefit to a School of Forestry.

The motion was adopted, and the deputation appointed (consisted of Sir Robert Christison, Right Hon. W. P. Adam, M.P., Dr. Cleghorn, Messrs. Hutchison, of Carlowrie, Methven, Dunn, M'Corquodale, France, and the Secretary (Mr. Sadler).

PAPERS.—Mr. C. S. France read a paper on "The effect of the last two wet seasons on sylvan vegetation, as shown by the decay and sickly appearance of Spruce all over the country." The Spruce in some measure showed the diseased condition to which he referred where the soil was damp with an underlying cold and retentive subsoil, combined with a want of air and light arising from overcrowding in plantations. An examination of the rootlets showed them to be enervated, and in many cases entirely decayed from the presence of fungi. These fungi had, he held, been more than usually developed by the wet seasons of 1876 and 1877. Again, there was a want of sunlight in these years, and necessarily a want of solar radiation, which prevented the proper elaboration of the sap, and reduced the evaporation necessary for the healthy development of vegetable life. All these circumstances had, he contended, produced the disease complained of.

Mr. Sadler, Secretary, confirmed Mr. France's statements in regard to one cause of the disease being the presence of fungi. He described the appearance of the Spruce woods in some parts of Fifeshire, Haddington, and Edinburgh, which had been attacked by the fungi, and stated that in almost every case he had found the soil waterlogged. Spruce growing on dry situations were generally healthy.

Mr. M'Corquodale, Scone, said that there were other causes for the blight on Spruce, such as late frosts, succeeded during the day by great sun-heat, accompanied by cutting winds.

Mr. Wilkie, Ardkinglas, said that in his neighbourhood the blasting of Spruce was caused by frosts at night, succeeded by great heat. There was neither dampness nor fungoid growth where his trees were blighted.

Mr. Dunn, Dalkeith, said that the trees that had been diseased in his neighbourhood were recovering, and he thought their sickly condition had been due to the combination of damp soil, wet seasons, and fungi.

Mr. Gordon, Luss, stated that the Spruce were perfectly healthy in the Loch Lomond district.

After some further discussion, a vote of thanks was accorded to Mr. France for his paper.

Mr. M'Corquodale read a paper on "What is the best course of study to be followed by students of forestry in this country ?" in which he advocated as means to an end the securing of a Royal charter for the Society, the establishment of a School of Forestry, and of a board for the examination of foresters and granting certificates of proficiency. As to the education of forest pupils, they should have a liberal English education, a fair knowledge of mathematics, land measuring, plan drawing, botany, geology, entomology. Some advocated that first-class foresters should be able to read French or German, but it was difficult in remote districts for young men to acquire either of these languages, and he advocated instead the translation and publication at regular periods, by a committee of the Society, of the best modern French and German works on forestry. Every forester should have a season or two of nursery, and five years of practical, training under able foresters. If a School of Forestry were established in connection with the Edinburgh Arboretum, where forest science could be studied, then it would be quite unnecessary to send forest pupils to France and Germany for training for the Indian forest service.

A number of foresters spoke in favour of the Society issuing a curriculum of study for young foresters, and of examining them afterwards and granting certificates or diplomas.—Sir Robert Christison said that, from the experience he had had of the foresters of Scotland, he was satisfied that there was no occasion for them to go out of the country to learn their profession.—Mr. Dunn moved that it be remitted to the Council to draw up a scheme for the training and education of young foresters, with the ultimate view of granting diplomas in forestry when the Society was in possession of a charter.—The motion was seconded by Mr. Scott, Darnaway, and adopted.

Dr. Cleghorn said that before passing from this subject he wished to say that he supported the suggestion of a School of Forestry for the wants of Britain itself. He had twice visited the Continental schools, and had seen the good work done by them. They must take care to agitate in the right direction, and accept with thankfulness knowledge from all quarters, just as engineers and agriculturists did. If they got information from all quarters they could arrange a curriculum on the best plan. He could say that the Secretary of State for India was most anxious to equip the youths for the Indian forest service in the most thorough manner, and had taken advice from all sides.

Mr. Gorrie, Rait Lodge, then submitted a paper on "How to ascertain accurately by measurement the annual growth of living trees." He urged that the girth and height of trees should be carefully and regularly taken, and observations made on the geological formation, soil, subsoil, altitude, and exposure of the plantations. By these means alone could correct ideas of the progress of trees be formed, and reports rendered really useful. Measurements of girths should be made at 5 feet from the surface, unless where the branches were too low, when the narrowest part of the trunk should be taken. He dwelt on the importance of marking the spot where the measurements had been taken, and of identifying the sites of the trees so measured.

Sir Robert Christison gave some interesting details of over fifty trees he had measured in the Botanic Gardens and Arboretum, together with their rate of growth, measured to the twentieth of an inch. The best mode of marking trees was with a ring of white oxide of zinc, which did not injure the trees, and always remained white.

Votes of thanks were accorded to Mr. M'Corquodale and Mr. Gorrie for their communications.

Mr. Gorrie exhibited specimens of the Tree Mallow which he had grown in his garden at Trinity. The fibre could be utilised for paper-making, and seeds for cattle feeding. He was also of opinion that the plant would give excellent shelter, and make a good nurse for young plantations on exposed sea coasts. He also exhibited branches of Plagianthus betulinus, a New Zealand malvaceous plant, which had grown in Scoland without protection for ten years. The twigs were composed of a strong tough fibre, likely to become useful for paper-making. Mr. Hutchinson, of Carlowrie, and Mr. M. Jackson, Perth, exhibited a large collection of photographs of remarkable trees. Mr. W. W. Robertson, Blinkbonny, exhibited a mass of Elm roots taken from a drain which they had completely choked up. Mr. France exhibited three hedge-bills, one for one year's and two years' growth, and one for "cutting over." The blades are perfectly straight, and made of pure steel backed with iron. They were manufactured by Mr. Robson, blacksmith, Penicuik. They had been used for the past two seasons by the foresters on the Penicuik estate, and given great satisfaction.

The Secretary read a note from Rev. J. Croumbie Brown, in which he stated that during his late visit to Russia he obtained a quantity of the seeds of Larix sibirica and Pinus sylvestris. These he wished to distribute, and would send some of each to any member who forwarded to him an addressed stamped envelope.

There were displayed in the class-room the premium collections of cones; a beautiful series of named Indian woods recently presented to the museum at the garden by the Government, and a rustic old trunk covered with numerous specimens of named fungi, the latter being exhibited by the Secretary.

In the evening the annual dinner took place in the Albert Hotel—Mr. Hutchinson, of Carlowrie, chairman, and Mr. T. Methven and Mr. M'Corquodale, Scone, croupiers.

Florists' Flowers.

CHRYSANTHEMUMS AT THE CRYSTAL PALACE.—Amongst what may perhaps be considered as public collections of Chrysanthemums, we have as yet seen no finer this season than that which Mr. Thomson has provided for the delectation of visitors to the Crystal Palace. Mr. Thomson has grown a large collection of these showy and indispensable November flowers every year since the management of the horticultural department of the Palace passed into his hands, and though he has always been very successful we are bound to admit that the floral results obtained this year are considerably in advance of those obtained in any previous season. The proportion of large, well built, and brightly coloured flowers is a large one considering the number grown, indeed we do not remember having seen many collections of the same size which contained so few second-rate or really poor blooms.

Specimen plants, as such, are of little use at the Crystal Palace, consequently the plants are grown in such a way as to bring about the production of flowers of the finest quality individually, these being considered more desirable than a greater number of blooms on a plant, which must necessarily be of a smaller size, and consequently of a less attractive character. Before proceeding to note the leading varieties, it may be advisable to say a word or two on the subject of their cultivation. The number of plants grown is about 3000; and their propagation commences as early in November as cuttings can be obtained; but as some plants throw up suckers earlier than others the work of striking cuttings is not completed until about February. The finest blooms are always obtained from the plants earliest rooted, though those struck late come in exceedingly useful for lengthening the flowering season. From long experience Mr. Thomson has found that he obtains the best results from cuttings inserted singly in small pots, which are plunged in ashes at once in a cold frame. He submits the Chrysanthemum to no coddling treatment, and consequently the plants are never submitted to fire-heat in any stage of their growth. In the small pots the cuttings remain until March, when they are potted on into 48's in a good rich compost; and as soon as the pots become fairly filled with roots they are transferred at once into their flowering pots, which are not larger than 16's, the plants in this size pot being found to mature their buds better than when their roots have a wider range. From the time the cuttings are put in till their dead blooms are cut off, they are never pinched or stopped, but are allowed to grow at their own free will, and invariably break into four or more growths of their own accord, but their flower-buds are thinned as soon as they are large enough to get at easily.

Hitherto the greatest display has always been made in front of the Grand Orchestra, but from various reasons the collection has this year been split up into groups in different parts of the Palace—a plan which we think adds greatly to their enjoyment by the visitors. Selecting for mention such varieties as are best represented all round, we have notes of the grand, pure white Empress of India; the Golden Empress of India, a large and finely-formed, new, primrose-yellow flower, that should find a place in every collection; Striped Queen of England, white with a lilac stripe, not much grown, but a pretty decorative variety; Bronze Jardin des Plantes, an old favourite, seen here in grand form; Mrs. Dixon, the exceedingly pretty yellow sport from Mr. G. Rundle; Cherub, a fine golden flower of the Guernsey Nugget type, and valuable as a late bloomer; Mrs. Halliburton, sulphur-yellow, a pretty and useful decorative sort; Princess of Wales, white, shaded with rose, very good; Pink Perfection, an incurved pink flower, not always seen in good form, but large and fine here; King of Denmark, a pretty bronzy lilac flower; Golden Dr. Brock, pure yellow, and finely incurved; Golden Eagle, a grand incurved flower; Mount Etna, fine amongst dark reds, well worth growing for its colour as a decorative variety; Lady Talfourd, rosy lilac, extra good; Lady Hardinge, rose, and of fine form; Princess of Teck, a peach-tinted white flower, and one of the best of the late bloomers; Prince of Wales, dark violet, incurved, and of grand size; Barbara, a showy, incurved golden bronze-coloured bloom; Mottled Beverley, a very pretty little incurved flower; Prince of Anemones, the finest of its section; Beauty of Stoke, orange on the top, and bronze at the back of the petals; Gluck, golden anemone-flowered; Alfred Salter, delicate pink, and very large; Abbe Passaglia, a prettily bronzed yellow, and large incurved bloom; Prince Alfred, rosy lilac, represented by numerous grand flowers; Julia Lagravere, dark crimson, a very fine decorative variety; Golden Hermine, a fine yellow; Mrs. Forsyth, creamy white; White Globe, very large; Fingal, a large rosy lilac; and Mrs. Sharpe, a beautifully incurved pink.

In the Japanese section the leading sorts are Fair Maid of Guernsey, large, and very fine white; Peter the Great, a large and showy pale yellow flower; the well-known Elaine; James Salter, lilac, large and showy; Cloth of Gold, also a fine yellow, with strap-shaped petals; and Gloire de Toulouse, a very effective flower, rose with a white centre.

The Pompons are very numerous, the plants being well flowered, and carrying an abundance of foliage. Amongst these, the best are Mrs. Dix; Golden, Lilac, and White Cedo Nulli; Adèle; Stella, a good late flowered Anemone; Model, Mrs. Hutt, Madame Pepin, Madame Rouslin, Florence, a pretty cherry-red and very free-flowering sort; Salamon, Fairy, Mrs. Astie, one of the best yellows; Mrs. Murray, a large lilac flower; General Canrobert, Model of Perfection, Madame Marthe, Mary Lind, and Sœur Melané, a very fine white decorative variety.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 13, 1878.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION.		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Mean of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure from Mean from Average of 60 years.	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.		
	In.	In.	°	°	°	°	°	°				In.
Nov. 7	29.59	−0.21	46.0	35.0	11.0	40.2	−4.5	33.3	76	N.		0.00
8	29.37	−0.43	44.5	31.9	12.6	38.7	−5.6	25.4	89	NNW. WSW.		0.09
9	29.97	+0.17	43.0	31.2	12.7	37.7	−6.2	29.6	73	WNW.		0.00
10	29.17	−0.63	50.0	37.5	10.5	45.6	+2.1	41.2	92	S.S.W.		0.75
11	29.32	−0.47	41.3	36.0	8.3	40.1	−3.1	33.9	70	WNW. N.W. W.N.W.		0.05
12	29.25	−0.54	49.1	29.9	19.2	44.6	−8.3	27.2	74	W.S.W.		0.00
13	29.28	−0.50	40.0	31.2	8.8	35.6	−7.1	33.1	91	N.E. N.		0.06
Mean	29.42	−0.37	44.0	33.5	10.5	38.9	−4.7	33.7	82	variable		Sum 0.95

Nov. 7.—A fine bright day. Clear. Cold. Cloudless at night.
— 8.—Fine, but dull and very cloudy. Occasional rain. Cold.
— 9.—A fine bright day. Cold and wintry. Overcast at night. Lunar halo in evening.
— *10.—A bad stormy day. Heavy rains till 7 P.M. Fine, cloudless after 7 P.M. Gale of wind till evening, then moderated. Mild.
— 11.—Generally dull, fine at intervals; occasional rain. Shower of hail at 1.50 P.M. Cold. Cloudless at night.
— 12.—Beautifully fine till 2 P.M.; overcast and dull after. Fog after 4 P.M. Hoar-frost in morning. Raw cold.
— 13.—Overcast and dull throughout. A miserable day. Thin rain till evening. Cold.

* Barometer reading, November 10, 9 A.M., 29.328 in.; 11 A.M., 29.276; noon, 29.222; 0.30 P.M., 29.182; 2 P.M., 29.124; 3 P.M., 29.075; 4 P.M., 29.094; 4.30 P.M., 29.100; 5 P.M., 29.106; 5.30 P.M., 29.116; 6 P.M., 29.129; 7 P.M., 29.138; 9 P.M., 29.166; 10.30 P.M., 29.150. And the readings have continued very low up to this day (Thursday).

LONDON: *Barometer.*—During the week ending Saturday, November 9, in the vicinity of London the reading of the barometer at the level of the sea dereased from 30.24 inches at the beginning of the week to 29.68 inches by the evening of the 4th, increased to 29.81 inches by the morning of the 5th, decreased to 29.52 inches by the afternoon of the 6th, increased to 29.81 inches by the evening of the 7th, decreased to 29.40 inches by noon on the 8th, rapidly increased to 30.21 inches by the afternoon of the 9th, and was 30.13 inches at the end of the week. The mean reading for the week at sea level was 29.81 inches, being 0.02 inch below that of the preceding week, and 0.16 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 46° on the 7th, to 42½° on the 4th; the mean for the week was 44¼°. The lowest temperatures of the air observed by night varied from 31¼° both on 4th and 9th, to 35° both on the 5th and 7th; the mean value for the week was 33°. The mean daily range of temperature in the week was 11¼°, the greatest range in the day being 12¾° both on the 8th and 9th, and the least, 9¼°, on the 5th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—3d, 38°.2, —7°.6; 4th, 36°.8 — 8°.8; 5th, 39°.8, —5°.6; 6th, 39°.5, —5°.6; 7th, 40°.2, —4°.5; 8th, 38°.7, —5°.6; 9th, 37°.7, —6°.2. The mean temperature of the air for the week was 38°.7, being no less than 6°.3 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in full rays of sun, were 106° on the 5th, and 88½° on the 7th; on the 4th the reading did not rise above 46°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 25½° on the 8th, 27° on the 7th, 27½° on the 3d, and 28¾° on the 9th. The mean of the seven lowest readings was 28¾°.

Wind.—The direction of the wind was N.N.W., and its strength was brisk.

The weather during the week was mostly dull, very cold and dry, and the sky was cloudy.

Fog prevailed on the 3d, 4th, and 7th, and a *lunar halo* was seen during the evening of the 9th.

Rain fell on Friday, the 8th inst., and the amount measured was 0.09 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, November 9, the highest temperatures of the air observed by day were 53° at Truro, 50½° at Bristol, and 50° at Plymouth and Liverpool; the highest temperature of the air at Sunderland was 45°, and at Blackheath, Hull, and Bradford was 46°; the mean value from all stations was 48°. The lowest temperatures of the air observed by night were 28° at Truro, 29° at Hull, and 29½ at Bristol, Wolverhampton, and Nottingham; the lowest temperature of the air at Liverpool was 37°, and at Norwich was 34¾°; the mean value from all places was 31½°. The range of temperature in the week was the greatest at Truro, 25°, and the least at Norwich, 12½°; the mean range from all places was 16½°.

The mean of the seven high day temperatures was the highest at Truro, 51°, Plymouth 48½°, and Sheffield, 47¼°; and the lowest at Sunderland, 43¾°, and Bradford, 44°; the mean from all stations was 46°. The mean of the seven low night temperatures was the lowest at Wolverhampton, 31°, Nottingham, 32°, and Blackheath and Bristol, both 33°, and the highest at Norwich and Sunderland, both 37°, and Liverpool 39°; the mean from all places was 34¾°. The mean daily range of temperature in the week was the greatest at Nottingham, 14½°, and the least at Sunderland, 6¾°; the mean daily range from all places was 11¼°.

The mean temperature of the air for the week from all stations was 39¾°, being 9½° lower than the value for the corresponding week in 1877. The highest was 43¼° at Truro and 42° at Liverpool; and the lowest were 37° at Wolverhampton and 38¼° at Blackheath, Brighton, and Nottingham.

Rain fell on every day in the week at Truro, Norwich, Hull, and Sunderland; at Blackheath it fell on one day only. The heaviest falls were 1.62 inch at Truro, 1.56 inch at Norwich, 1.53 inch at Hull, and 1.36 inch at Sunderland; and the least falls were 0.27 inch at both Leicester and Nottingham and 0.09 inch at Blackheath; the average fall over the country was 0.85 inch.

The weather during the week was dull and very cold.

Snow fell at Wolverhampton, Cambridge, and Bradford on the 8th inst.

A *thunderstorm* occurred at Bristol on the 8th.

SCOTLAND: *Temperature.*—During the week ending Saturday, November 9, the highest temperatures of the air varied from 48° at Glasgow and Dundee, to 44° at Aberdeen; the mean value from all stations was 46¾°. The lowest temperatures of the air varied from 29° at Perth, to 33° at Leith; the mean from all places was 30¾°. The mean range of temperature in the week from all stations was 16°.

The mean temperature of the air for the week from all stations was 39¼°, being 8½° lower than the value for the corresponding week in 1877. The highest was 40°, at Glasgow, Greenock, and Leith, and the lowest 38°, at Edinburgh.

Rain.—The falls of rain in the week were the heaviest at Greenock, 1.30 inch, and Edinburgh 0.97 inch; and the least at Glasgow, 0.37 inch, and Dundee, 0.30 inch. The average fall over the country was 0.69 inch.

DUBLIN. — The highest temperature of the air in the week was 51½°, the lowest was 27¾°, the range was 23¾°, the mean was 41½°, and the fall of rain was 0.67 inch.

JAMES GLAISHER.

Obituary.

WE regret to record the death of Mr. THOMAS LEES, for many years gardener to the Earl of Haddington, at Tynninghame, in East Lothian. Mr. Lees, who was, we believe, the raiser of the Countess of Haddington Rhododendron, retired from the management of the Tynninghame gardens in 1874, when he became the tenant of the Archerfield Farm, near Dirleton, where he died of dropsy on the 4th inst., after being confined to his house for over three months.

Enquiries.

He that questioneth much shall learn much.—BACON.

DECAYING OAK TREE.—A few miles from Northwich there is a fine Oak tree, probably three centuries old, but still growing freely. A kind of external abscess led to suspicions that all was not right within the bole. So an incision was made, with the result of discovering that the interior was filled with the white spongey substance, of which I enclose a specimen, for a space 7 feet long, measured from the ground, by 3 feet in diameter. This has all been cleared out; but what beyond additional drainage can be done to save the tree? Would it be well to shorten some of the branches? *J. B.* [The white substance is fungus spawn. EDS.]

PLANTING TO ABATE A NUISANCE.—On the west side of my garden runs a ditch, or, not to mince matters, an open sewer, destined to carry off the refuse from about fifty labourers' dwellings. There being no fall, or current, instead of being carried off it remains stagnant, and sometimes emits such an effluvium that the pleasures of my garden become for the nonce imaginary. Could any of your readers favour me with advice as to what shrubs or plants, planted along the edge, would tend to mitigate the nuisance? At present I have a row of black Currant bushes, but these I find of little avail. *S., Rotterdam, Nov. 6.* [We can only suggest the planting of two or three rows of Sunflowers, or Jerusalem Artichokes. The best plan would be to cover in the ditch. EDS.]

DOUGLAS FIR.—What is the proper time to gather cones of this Fir? *R. B., Alnwick, Nov. 7.*

Answers to Correspondents.

BOTTOM HEAT: *S. E.* Clear out the old leaves and use them as a dressing for the ground. Then collect the fallen leaves and mix them into a heap with horse-dung, in the proportion of three parts of the former to one of the latter, and let the heap lie till it becomes warm before putting it in the pit, where it should be trodden down firmly.

FERN: *C. W. Y.* Dicksonia is the hardiest by far; but either this or the Cyathea would require shading in the summer.

FUNGUS ON CELERY: *D. C. Powell.* The fungus attacking the leaves sent is the too well known Celery Brand, Puccinia apii. It appears to be very plentiful this season. We know of no cure for it, and can only suggest the burning of as many of the affected leaves as possible.

NAMES OF PLANTS: *C. C. H. C.* Jasione montana.—*G. G. G.* Seems to be Aster miser.—*J. McI.* 1, Aster Novæ Angliæ; 2, A. laxus; 3, will you please send us another and better specimen of this. We have spent much time over it, but have been unable to determine even its genus as yet. Can you inform us of its native country?—*J. Jefferies & Sons.* Solanum marginatum.—*G. H., Chester.* The scraps are too small for identification.—*A. N.* Erica codonodes.—*J. G. M.* 1 and 2, both Erica codonodes, the latter in bud only.—*G. K.* Probably Mentha Pulegium gibraltaricum.—*A. Fray.* Artemisia Dracunculus, the Tarragon.

PAINT: *X. Y. Z.* A mixture of lamp-black and linseed oil.

SETTING A BOILER: *J. T. S.* You do not appear to have tried the apparatus before becoming dissatisfied with it. There seems to us to be no reason why it should not act.

VALUE OF A CAMELLIA: *Camellia.* We cannot tell you. Apply to some nurseryman who deals in these plants.

WELLS: *Invicta.* There is no doubt the gas-lime is the cause of the evil. The plan you propose to adopt is the best, we think, that tan be followed under the circumstances.

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED:—Robert Cragg (Car Colston, near Bingham, Notts), Descriptive Catalogue of Roses, Pansies, Fuchsias, and other Florists' Flowers.—Kelway & Son (Langport, Somerset), Twenty-eighth Annual Catalogue of Gladioli.—E. P. Dixon (The Nurseries, Sculcoates, Hull), Catalogue of Roses, Fruit, Forest, and Ornamental Trees, Deciduous and Evergreen Shrubs, Stove and Greenhouse Plants, &c.

COMMUNICATIONS RECEIVED:—J. S.—H. F.—J. W.—R. D.—G. L.—W. H.—Robt. Fenn.—J. C.—G. B.—C. T.—J. C.—J. M.—G. F. W.—H. G. B.—E. O., electros will be sent.—E. Boissier.—J. Tyndall.

Markets.

COVENT GARDEN, November 14.

Last week's business calls for no remark, scarcely any trade being done. The glut of common Apples seems to be over, and good late keeping varieties will now make better prices. Kent Cobs are dull. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	3 0
Cobs and Filberts, lb.	0 9	1 0	Pears, per doz.	3 0	0 0
Grapes, per lb.	2 6	6 0	Pine-apples, per lb.	2 0	4 0
Lemons, per 100	6 0	12 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Herbs, per bunch	0 2	0 4
— Jerusalem, bush.	4 0	..	Horse Radish, p. bun.	4 0	..
Asparagus, Fr. sprue, per bundle	1 6	..	Lettuces, Cos, Eng., per score	1 6	2 6
Beans, French, p. 100	2 0	..	Mint, green bunch	0 4	0 6
— runners, p. bush.	4 0	..	Onions, young, bun.	0 4	0 6
Beet, per doz.	1 0	2 0	Parsley, per bunch	0 4	..
Brus. sprouts, bush.	7 0	..	Radishes, per bunch	0 1	0 3
Cabbages, per doz.	1 0	2 0	— Spanish, doz.	2 0	..
Carrots, per bunch	0 4	0 6	— New Jersey, doz.	2 0	..
Cauliflowers, per doz.	2 0	3 0	Shallots, per lb.	0 6	..
Celery, per bundle	1 6	2 0	Seakale, per punnet	2 6	..
Chilis, per 100	2 0	..	Spinach, per bushel	2 0	..
Cucumbers, each	0 4	1 6	Sweet Potatos, per lb.	0 6	..
Endive, Batav. dozen	1 6	..	Tomatos, per dozen	2 6	3 0
Garlic, per lb.	0 6	..	Turnips, p. 12 bunch.	3 0	..

The Potato trade is dull, and prices remain the same:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Jasmine, 12 bunches	6 0	12 0
Bouvardias, per bun.	1 0	4 0	Mignonette, 12 bun.	2 0	6 0
Camellias, per dozen	3 0	12 0	Narcissus, paper-white, 12 sprays	2 0	6 0
Carnations, per dozen	1 0	2 0	Pelargoniums, 12 spr.	1 0	3 0
Cornflower, 12 bun.	6 0	9 0	— zonal, 12 sprays	6 0	2 0
Chrysanth., per doz.	2 0	6 0	Phlox, 12 bunches	6 0	12 0
— per 12 bunches.	3 0	9 0	Primula, double, per bunch	1 0	2 0
Dahlias, 12 bunch	3 0	9 0	Roses (indoor), doz.	1 6	12 0
Eucharis, per doz.	4 0	12 0	— (outdoor), 12 bun.	9 0	18 0
Gardenias, 12 blms.	4 0	12 0	Spiræa, 12 sprays	1 6	4 0
Gladioli, various, 12 spikes	1 0	4 0	Stephanotis, 12 sp.	6 0	12 0
Heliotropes, 12 sp.	0 6	1 0	Tropæolum, 12 bun.	2 0	6 0
Hyacinths, Roman, 12 spikes	2 0	4 0	Tuberoses, per dozen	1 0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Begonias, per doz.	4 0	12 0	Ficus elastica, each	2 6	15 0
Bouvardias, do	9 0	24 0	Foliage Plants, various, each	2 0	10 6
Chrysanth., per doz.	6 0	30 0	Fuchsias, per dozen	6 0	12 0
Coleus, per dozen	3 0	9 0	Hyacin., Rom., doz.	2 0	18 0
Cyperus, do.	6 0	12 0	Mignonette, per doz.	3 0	9 0
Dracæna terminalis	30 0	60 0	Myrtles, per doz.	4 0	12 0
— viridis. per doz.	18 0	24 0	Palms in variety, each	2 6	21 0
Erica Cafra, p. doz.	6 0	9 0	Pelargoniums, scarlets, zonal. doz	6 0	12 0
— gracilis, p. dozen	6 0	12 0	Primulas, per dozen	5 0	9 0
— hyemalis, p. doz.	21 0	42 0			
Euonymus, various, per dozen	4 0	18 0			
Ferns, in var., p. doz.	4 0	18 0			

SEEDS.

LONDON: *Nov.* 13.—Business in farm seeds continues to move within very narrow limits, there being as yet no speculation whatever in any variety. The reports of the American crop, received by mail, are not so favourable as formerly; trustworthy accounts from Toledo estimate the crop in the States of Ohio, Indiana, and Michigan, as 20 per cent. below that of 1877—the quality of the seed, however, being equal to that of last year. From Pennsylvania and Maryland the latest reports are also discouraging. One or two samples of the New York State seed have been received here, which show good quality, but the crop, on the whole, is badly spoken of. In Canada, moreover, the prospects are said to be inferior to those of the past season; the hot dry weather which in Ontario is specially requisite for the production of an abundant yield having this year been wanting. It is noted that at all the collecting depôts of the Western States the receipts thus far have been smaller than those for the corresponding period of 1877. As regards values there is this week no quotable change either in foreign or home-grown Clovers. A few more parcels of large grained English red have been taken for shipment to the Continent. Alsike must be noted 1s. to 2s. per cwt. cheaper: the supply is large and quality satisfactory; prices, too, are lower than they have been for many years. From Luxemburg, especially, the offerings continue on a most liberal scale. Fine white Clover is scarce, but medium qualities are plentiful, and meet with no attention. Trefoils are firm. In Canary seed there is no alteration: Hemp is abundant and very cheap. Owing to the early advent of winter the trade for boiling Peas is firmer; the supply has lately somewhat fallen off. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

The Borough and Spitalfields reports state that moderate supplies of Potatos were on offer, and trade was steady. Kent Regents, 100s. to 130s.; Essex ditto, 100s. to 120s.; Champions, 75s. to 90s.; flukes, 120s. to 140s.; Victorias, 120s. to 140s.; rocks, 70s. to 80s. per ton. The Potatos imported into London last week comprised 30,601 bags from Hamburg, 3994 bags 12 sacks Bremen, 1904 Ghent, 163 Dunkirk, 47 packages Amsterdam, and 153 Rotterdam.

TO THE TRADE.

CARTER'S NOVELTIES

For 1879.

CARTER'S TELEPHONE PEA.
Wrinkled marrow, with semi-double pods; exquisite flavour, and an enormous cropper.

CULVERWELL'S TELEGRAPH PEA.
"The largest and handsomest Pea grown."
Mr. J. GOODACRE, Gr. to the Rt. Hon. the Earl of Harrington.

CARTER'S CHALLENGER PEA.
"The best dwarf Pea I have ever used."
Mr. R. SOWERBY, Gr. to the Rt. Hon. the Earl of Macclesfield

CARTER'S LITTLE WONDER PEA.
"As its name implies, a capital variety, useful for forcing."
Mr. W. FOWLE, Gr. to Sir H. Mildmay, Bart.

KELWAY'S PARAGON CUCUMBER.
"As an exhibition variety A 1.—An enormous cropper, scarcely any neck."—*Gardeners' Magazine.*

DELL'S HYBRID MELON.
"Amongst the many exhibited this was the only green-fleshed Melon pronounced worthy of a 1st Class Certificate this year by the Royal Horticultural Society."

CARTER'S HEARTWELL MARROW CABBAGE.
"My London agent says, 'Yours are the best Cabbages in the market,' and they are Carter's Heartwell."
Mr. R. GILBERT, Gr. to the Most Noble the Marquis of Exeter.

ESCHSCHOLTZIA CROCEA, FL. PL.
First-class Certificate Royal Horticultural Society.
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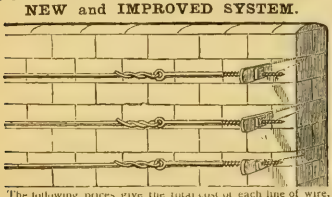
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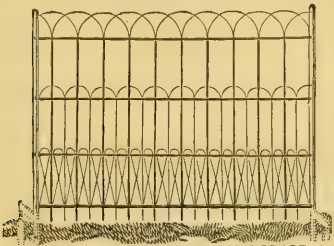
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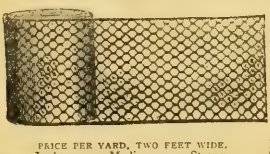
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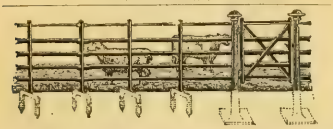


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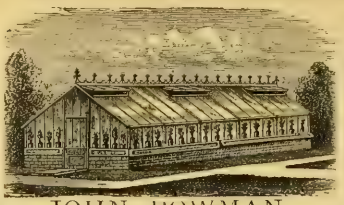
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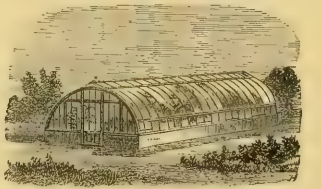


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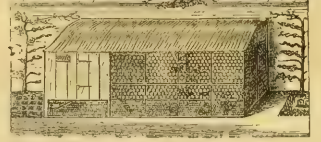


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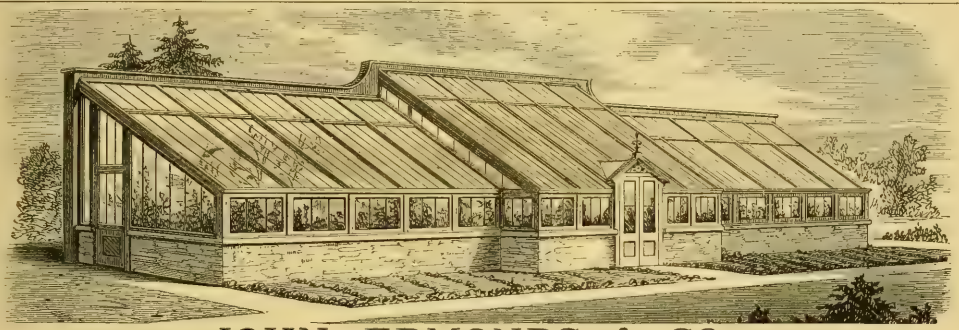


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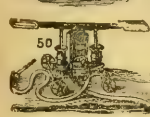
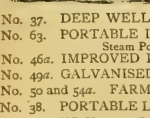
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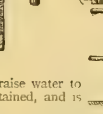
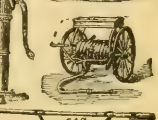
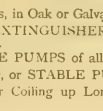
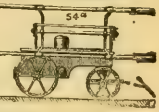
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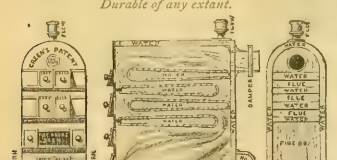
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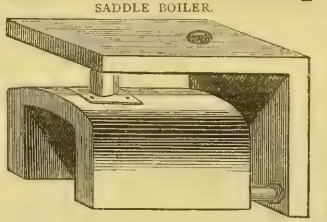
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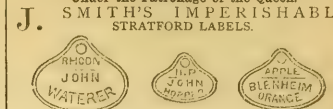
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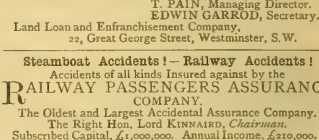
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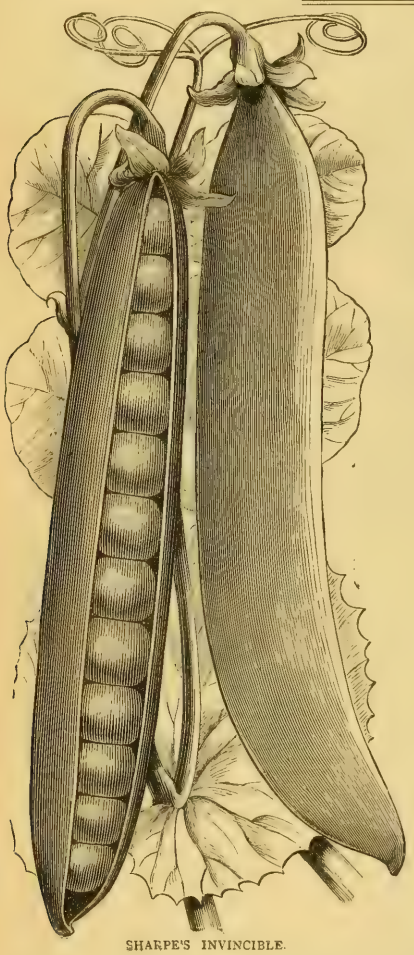
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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P. & M. will buy for those who cannot attend.

Catalogues at 98, Gracechurch Street, E.C.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 1000 choice Double CAMELLIAS and AZALEA INDICA, compact plants, 1½ to 3 feet, beautifully studded with bloom-buds; a superb assortment of 500 handsome Standard and Dwarf ROSES, selected hardy CONIFERÆ, SHRUBS and AMERICAN PLANTS; fine FRUIT TREES, together with some GREENHOUSE PLANTS in flower, sound DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Rooms, as above, on TUESDAY, November 26, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Exotic Nursery, Tooting, S.W., on TUESDAY, November 26, at 12 o'Clock precisely, a large quantity of thriving young NURSERY STOCK, remarkably well grown, comprising several thousands of choice Evergreens and Coniferæ for effective planting; beautifully grown specimen Coniferæ, a splendid assortment of Ornamental and Forest Trees, fine Fruit Trees, Hardy Climbing Plants, in pots; Spiræa japonica clumps, a few lots of Greenhouse Plants, such as specimen Rhododendrons, Camellias, Draceenas, &c.

May be viewed. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Streatham, S.W.

Three minutes' walk from the Streatham Hill Station.

EXPIRATION of LEASE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Leigham Court Read, on WEDNESDAY, November 27, at 12 o'Clock punctually, the whole of the NURSERY STOCK, comprising magnificent Araucarias, fine common and Portugal Laurels; large quantities of Box, Green Hollies, Aucubas, Poplars; Fruiting Pyramidal Apples and Pears. The whole in good condition for removal.

Now on view. Catalogues on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Acton, W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Uxbridge Road, Acton, W., on FRIDAY, November 29, at 11 for 12 o'Clock precisely, by order of Mr. John Reeves, a large quantity of NURSERY STOCK, consisting of an assortment of choice Border Shrubs, 1500 Golden Arbor-vitæ, 1 to 3 feet; 2000 Green and Variegated Euonymus, 1 to 2½ feet; a considerable number of Ornamental Trees, Standard and Dwarf Roses, Fruit Trees in bearing condition, &c.

May be viewed any day prior to the Sale. Catalogues can be had on the Premises, and of the Auctioneers.

Lewisham, S.E.

Ten Minutes' walk from the Station.

FINAL CLEARANCE SALE, the Land being immediately required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. B. Maller to SELL by AUCTION, on the Premises, The Eastdown Park Nursery, Lewisham, on TUESDAY, December 3, at 11 for 12 o'Clock precisely, the whole of the thriving NURSERY STOCK, in fine condition for removal, having been transplanted within two years, consisting of 3 fine assortment of choice Border Shrubs, including 303 Cedrus Deodara, 3 to 4 feet; 1000 Green Box, and other Evergreens; 1800 Golden and Green Euonymus; 5000 Ornamental Trees; 700 trained Fruit Trees; 2500 strong Ivies; 700 Virginian Creepers; 500 Standard Roses, &c.

On view the day before the Sale. Catalogues on the Premises, at the Seedshop, The Pavement, Lewisham, and of the Auctioneers.

Brunswick Nursery, Tottenham,

PEREMPTORY SALE.—Under notice to quit from the Great Eastern Railway for the extension of their line.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, on THURSDAY, December 5, the whole of the GENERAL NURSERY STOCK.

Further particulars next week.

Tooting, S.W.

Re Wm. Rollisson & Sons in Liquidation.

FINAL CLEARANCE SALE of OUTDOOR STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, without reserve, on the Premises, the Nursery, Tooting, S.W., on FRIDAY, December 6, at 12 o'Clock punctually, the whole of the remaining outdoor NURSERY STOCK, comprising a large quantity of Border Shrubs, choice Rhododendrons, including many best named kinds, Ornamental Trees, trained Fruit Trees, Ivies in pots, &c. Now on view.

Catalogues had on the Premises; of G. WHIFFIN, Esq., the Trustee, 8, Old Jewry, E.C.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Finchley, N.

Close to the Station.

IMPORTANT SALE of beautifully-grown NURSERY STOCK, the whole in excellent condition for removal, consisting of many thousands of Ornamental Trees, including 1000 very fine Limes, 2000 Poplars of sorts, 5000 Scarlet Thorns, Evergreen and Coniferæ Shrubs, 2000 Green Hollies, 4 to 5 feet; selected dwarf trained and standard Fruit Trees, standard and dwarf Roses, and other Stock.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Finchley Nursery, Long Lane, Finchley, on SATURDAY, December 7, at 12 o'Clock precisely, by order of Messrs Cutbush & Son.

May be viewed at the Highgate Nurseries, where Catalogues may be obtained, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

To Seedsmen and Others.

IMPORTANT SALE of 44 Bales of Naples ONION SEED, comprising altogether about 2 Tons, and consisting of the following varieties:—Rocca, Late White, Red Giant, Early White, Marzajola, and Queen.

MESSRS. PROTHEROE AND MORRIS have received instructions from M. G. V. de Luca, in consequence of his relinquishing this branch of his business, to SELL by AUCTION, at the Mart, Tokenhouse Yard, near the Bank of England, London, E.C., on MONDAY, December 16, at 2 o'Clock (unless previously disposed of by private treaty).

An order to view the Seed, together with samples, may be obtained on application to the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

ASPARAGUS (Gravesend Giant), for forcing, 5*s.* per 100.
RHUBARB, Victoria and Albert, 16*s.* per 100.
Cash and packing included.
T. EVES, Gravesend Nurseries.—(Established 1810.)

MULBERRIES, in large or small quantities, in good condition for transplanting.
PONSFORD AND SON, Loughborough Park Nurseries, Brixton, Surrey.

CHRISTMAS TREES.—A quantity for Sale. For particulars apply to
J. GEO. HILL (late John Scott), Royal Nurseries, Merriott, Somerset.

Fit for Immediate Working.

ROSA MANETTII and R. MULTIFLORA DE LA GRIFFERAIE, 25*s.* per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

GIANT LILY of the VALLEY.—Extra strong blooming roots, 20. per dozen, 12*s.* 6*d.* per 100, package free.
E. COOLING, Mile Ash Nurseries, Derby.

To the Trade.

POTATO ONIONS, large and sound. Price on application.
HOGG and ROBERTSON, 22, Mary Street, Dublin.

To the Trade.

DWARF H.P. ROSES, 30*s.* per 100, £12 per 1000, best sorts, package included.
H. BENNETT, Manor Farm Nursery, Stapleford, Salisbury.

To the Trade.

CHERRIES, PLUMS, and PEARS (Standard), 6 feet stems, bushy heads, well set with buds; Standard WALNUTS and MEDLARS, Portugal LAURELS, Horse CHESTNUT, and Evergreen OAKS; all remove with good balls of earth. Special low prices on application to
J. GEORGE HILL (late John Scott), Royal Nurseries, Merriott, Somerset.

SEAKALE for FORCING.—Extra fine large roots, none to excel the size of them in growth this season, 90*s.* per 1000, and 2*s.* packing; under that number, 10*s.* per 100, and 1*s.* packing. A remittance to accompany all orders, addressed
ALFRED ATWOOD, Market Gardener, 8, Palk Road, Battersea, S.W. Cheques crossed London and County. P. O. O. payable High Street, Battersea, S.W.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.

Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5*s.* to 10*s.* 6*d.*; Planting, 2*s.* 6*d.* to 5*s.*

AUCUBA, 1½ to 2, and 2 to 2½ feet.
LAURUSTINUS, 1 to 1½, and 1½ to 2 feet.
COTONEASTER MICROPHYLLA, 1 to 1½, and 1½
LAURELS, Colchic, 2 to 3 and 3 to 4 feet. [to 2½ feet.
" caucasica, 2 to 2½ feet.
" common, all sizes up to 3½ feet.
Prices on application.
THOMAS SMITH, Nurseries, Stranraer.

FOR FORCING.
SPIRÆA JAPONICA, 20*s.* per 100.
" PALMATA, 25*s.* per 100.
" An immense stock, finely ripened. Smaller palmatas, for planting, 10*s.* 6*d.*, 15*s.*, and 20*s.* per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

TO THE TRADE.
MANETTI STOCKS, 21*s.* per 1000.
MUSSEL STOCKS, 45*s.* per 1000.
CRAB STOCKS, 35*s.* per 1000.
Samples of the above may be had on application to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

PANSIES AND PRIMROSES.

PANSIES, best varieties, named, including Prince of Wales, Duchess of Edinburgh, Countess of Dudley, Sportsman, Black Gem, 4*s.* per dozen, 30*s.* per 100, by post 6*d.* per dozen extra.

PRIMROSES, double and single, twelve varieties, 7*s.* per dozen, free by post 6*d.* extra.

Trade LIST on application,
FREDERICK PERKINS, Regent Street, Leamington.

CHOICE EARLY FLOWERS.

Sweet-scented RHODODENDRONS, flowers of most beautiful form, pure white, and deliciously fragrant.
The Hardy Sweet AZALEA DAVIESII, and DAPHNE INDICA RUBRA, healthy plants, to flower about Christmas.
Descriptive Priced LIST of the above and other Novelties, also Abridged List of General Nursery Stock, on application.
ISAAC DAVIES, Nurseryman, Ormskirk, Lancashire.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35*s.* per 100, packing included for cash.
JAMES HOLDER AND SON, Crown Nurseries, Reading.

STANDARD THORNS, Paul's Crimson, Double Pink, and Single Scarlet, very strong; Weymouth. PINE, from 5 to 10 feet; CRYPTOMERIA ELEGANS, 4 to 5 feet; Black Italian POPLAR, 10 to 15 feet, to be Sold cheap, to clear the ground. Price and sample of any of the above on application.
RICHARD MASON, Windlesham Nursery, Bagshot, Surrey

To the Trade.

ROSES, Dwarf, on Manetti, fine stuff, 30*s.* per 100, £12 10*s.* per 1000, my selection.
SEAKALE, extra strong, 80*s.* per 1000; strong, 60*s.* per 1000; Planting, 30*s.* per 1000.
BRIERS, seedling, 1-yr., extra fine stuff, 20*s.* per 1000.
For cash only with orders.
R. LOCKE, Rose Farm, Red Hill, Surrey.

WILLIAM WALKER has a quantity of DEODARS to dispose of, 3 to 5 feet; likewise PORTUGAL LAURELS, 2½ to 3½ feet. Prices on application.
Also some thousands of GREEN TREE BOX, 3 to 4½ feet, at 20*s.* per 100.
Packington Nursery, 1 mile from Ashby-de-la-Zouch Station.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

To the Trade.

ROSES.—Standard and Half-Standard, extra fine. Low quotation with Purchaser's selection.
MARECHAL NIEL, in pots, very fine, 75*s.* per 100; second size, 65*s.* per 100.
LIST of varieties on application.
GEORGE COOLING, Nurseryman, Bath.

OVAL or BROAD-LEAVED PRIVET, nice bushy stuff, 2 to 2½ feet, 8*s.* 6*d.* per 100. COMMON LAUREL, fine, 3 to 4 feet, 20*s.* per 100. RHODODENDRON PONTICUM, bushy, 12 to 15 inches, 15*s.*; 15 to 20 inches, 18*s.*; 18 to 24 inches, 25*s.* per 100. AUCUBA JAPONICA VERA (the green-leaved, berry-bearing variety) 12 to 15 inches, 10*s.*; 15 to 18 inches, 15*s.* per dozen. HOLLY, Shepherdii, fine, 1½ to 2½ feet, 12*s.* per dozen; Golden Queen, fine, 12 to 18 inches, 18*s.* per dozen. LIST on application.
J. J. MARRIOTT, Highfield Nurseries, Matlock.

Established Upwards of a Century.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, 1, Waterloo Place, Edinburgh, beg to call the attention of those about to plant to their extensive Stock of FOREST TREES, SHRUBS for Game Coverts, FRUIT TREES, &c., which have been grown in exposed situations.

D. & Co. are now sending out their Bedding VIOLAS and PANSIES (of which they hold the largest stock in the country), Early and Late PHLOXES, &c.

Descriptive CATALOGUES free on application.

FRUIT TREES, &c.—Fine strong 2-yr. old White Smith and improved Crown Bob GOOSEBERRIES, transplanted, 12*s.* per 100, £5 10*s.* per 1000; Standard APPLE TREES, fine stuff, my selection, 10*s.* per dozen; Pyramid ditto, extra large fruiting trees, 12*s.* per dozen. For cash with order.
CATALOGUES on application. Samples if required.
N. LAWRENCE AND SON, Burnsfield Nurseries, Chatteris, Cambridgeshire.

ADIANTUM CUNEATUM, strong, in 48's, £3 per 100.
PELARGONIUMS, strong, in 60's, all the leading varieties, such as Grand Duchess, Digby Grand, Rob Roy, Captain Raikes, Queen Victoria, Beauty of Hoxton, &c., £1 4*s.* per 100.
HOLLIES, gold and silver, worked last autumn, £1 10*s.* per 100.
W. L. MAITLAND, Merton Abbey Nursery, Merton Abbey, Surrey.

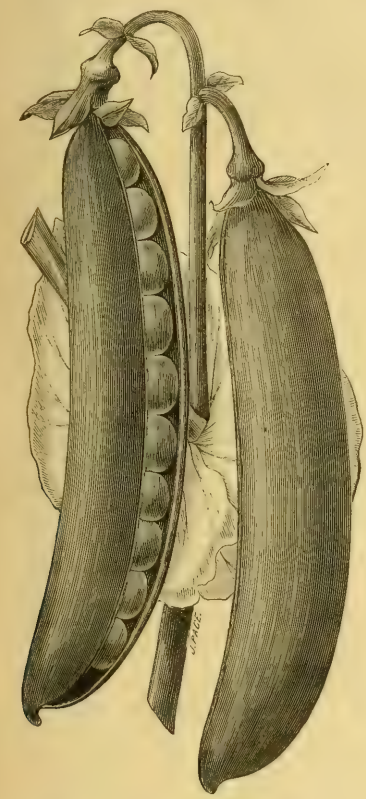
NEW PEA, "MARVEL" (Laxton).

FIRST-CLASS CERTIFICATE, ROYAL HORTICULTURAL SOCIETY.

JAMES VEITCH & SONS

HAVE MUCH PLEASURE IN INTRODUCING THIS

GRAND MAIN CROP PEA.



The plant is of robust branching habit and growth, about 3 feet in height. The pods are produced in pairs in great abundance, and are very large, from 4 to 4½ inches in length, full rounded, much curved and pointed, of a light green colour, and contain from nine to eleven very large Peas of exceedingly fine quality. A remarkably handsome, large, and exceedingly productive White Marrow Pea.

Mr. R. GILBERT, The Gardens, Burghley, writes:—

"Four years back I was presented with a small package of this Pea (Laxton's Marvel), from the raiser. I am so well satisfied with it that for two seasons past I have grown no other for mid-season supply. This Pea grows from 3½ to 4 feet high, and its branching habits are so dense that it completely covers the stakes with its fine marbled foliage, bearing its pods in pairs, which literally hang from top to bottom. Each pod contains from eight to ten Peas of the finest marrow-like flavour. I shall recommend 'Marvel' to all my gardening friends, feeling sure that where once grown it will be fully appreciated."

Mr. SHINGLES, The Gardens, Tortworth Court, says:—

"'Marvel' was sown under the same circumstances as other first-class Peas, and the results are very decided in its favour. It is an enormous cropper, and grows with me 3 feet, producing pods in pairs, and from eight to eleven Peas in a pod. When boiled they are a good colour and a most delicious flavour, and is by far the best Pea with which I am acquainted. I had a row about 4 yards long, and it was a grand sight."

Mr. W. WHALLEY, The Gardens, Addington Park, says:—

"We grew your new Pea, 'Marvel,' alongside many of the standard varieties that are grown in this country, and after testing its merits carefully and fairly, as regards a cropper, cooker, and flavour, we found it to be very excellent. It is also a beautiful growing Pea and very prolific, and there is very little doubt but it will become a general favourite, not only in private gardens, but also in market. We intend to grow it largely."

Mr. COLEMAN, The Gardens, Eastnor Castle, says:—

"Upon receipt of a small parcel of your 'Marvel' Pea, on March 6, a sowing was at once made by the side of 'Perfection' and 'Dr. McLean,' two of the best Peas in cultivation, and the result justifies me in saying it is worthy of all that can be advanced in its favour. When planted thinly it assumes the robust branching habit of 'Perfection,' grows about the same height, and produces an abundance of large, handsome pods, evenly filled with about ten Peas in each. The flavour, when cooked, being delicious, I have no doubt this fine Pea will soon become a general favourite, alike with the amateur, the exhibitor, and grower for market."

Mr. DUNN, Dalkeith Palace Gardens, says:—

"The Pea, 'Marvel' which you sent me for trial last spring, has proved to be of a nice dwarf, sturdy habit, averaging when well grown about 3 feet high. Sown in the last week of March, along with several other good mid-season sorts, it was one of the first ready for gathering, in the third week of July, and lasting three weeks in fine condition for table. It is a very prolific bearer, with well-filled, large-sized pods, and the Peas equal in flavour 'Veitch's Perfection.' I consider it an acquisition amongst the dwarfer growing Peas, and intend to grow more of it next season."

Price 5s. per Quart.

Trade Price of above and other Novelties to be had on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

Now Ready, a New and thoroughly Revised Edition of the

COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

OPINIONS OF THE PRESS.

"It has been carefully revised by an experienced gardener, and the lists of vegetables, fruit, and flowers have been corrected by the substitution of the most approved modern kinds, in place of those which were mentioned in the first edition, and many of which have ceased to be worthy of cultivation. It is a thoroughly sound, practical treatise; but it has been so long before the public, and so deservedly appreciated, that any special commendation of it now is unnecessary."—*Midland Counties Herald.*

"This is a handy volume, consisting of seventy pages of letterpress and illustration, containing much and varied information likely to prove useful to all cottagers, &c., who possess a garden. To all such, who require a cheap and reliable book of reference, we heartily recommend it."—*Lloyd's.*

"We are quite glad to see this useful little book once more, and it is like a whiff of perfume from the heather in bloom to read on the wrapper 'two hundred and twenty-first thousand.' We advise all who are interested in the promotion of cottage gardening to sow this little book broadcast."—*Gardeners' Magazine.*

"The information conveyed in this little book is well adapted for all persons having small plots of ground. The necessary operations for each month are clearly laid down, and are of a thoroughly practical nature. The sorts of both fruit and vegetables are well selected, many of them being excellent in quality. To our readers who are interested in the cultivation of their flower and kitchen gardens, we can safely recommend this as being a most concise and useful work."—*Bell's Messenger.*

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

New Catalogue.

MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application. It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS, Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS, CHEAP EVERGREENS for COVERS, PLANTS for WINTER BEDDING, CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c., all in splendid condition for removal.

☞ The Nurseries are about one hour by rail from Waterloo Station.

Milford, near Godalming, Surrey.

GEORGE COOPER, the County Seed Establishment, Hertford, begs to offer the following, of the choicest stocks, to the Trade. Special prices on application:—

BEET, Red, Cooper's Excelsior.
BROCCOLI, Hill's June.
CUCUMBER, Improved Telegraph.
PARSLEY, Curled, Cooper's Matchless.
SWEDE, Cooper's Improved Large Purple-top.
TURNIP, Improved Aberdeen Green-top Yellow.
ONION, White Spanish.
,, White Globe.
,, Bedfordshire Champion.
CELERY, Cooper's Improved White.
The above cannot be excelled for quality.

Kent, the Garden of England.

FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.

THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone; also at Ashford.

To the Trade.

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff:—
ROSES, Standard, 75s. per 100.
,, Dwarf, 30s. per 100.
APPLES, 2-yr. untrimmed, 50s. per 100.
PEARS, 2-yr. untrimmed, 50s. per 100.
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. to 30s. per dozen.
,, fine Maidens, 50s. per 100.
,, 1-yr. cut-back, 30s. per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 4 to 5 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
,, NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
PINUS CEMBRA, 4 to 5 feet, 60s. per 100.
THUJA AUREA, 1 foot, 40s. per 100; 1 to 1½ foot, 60s. per 100.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen 52, Market Square, Northampton.

Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices:—
ALDER, 4 to 5 feet, fine, 20s. per 1000
ASH, 2 to 2½ feet, fine, 20s. per 1000
,, 3 to 4 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
CHESTNUT, Horse, 6 to 8 feet, fine heads, 60s. per 100
,, Scarlet, 6 to 8 feet, fine heads, 100s. per 100
ELMS, Canadian, 8 to 10 feet, clear stems, with good heads, 100s. per 100
,, English (upright), 6 feet, clear stems, with good heads, 120s. per 100
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 5os. per 100; 6 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100; 8 to 10 feet, fine, 12s. per 100
,, Lombardy, extra fine trees, 8 to 10 feet, 20s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
,, ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, strong, 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
APPLES, fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100
CATALOGUES of General Nursery Stock on application.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.
HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown: 14s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
,, double white, 12s. to 16s. per 100
ULMARIA AUREA, ful. variegata, 40s. to 45s. per 100.
DIELYTRA SPECTABILIS, 50s. to 75s. per 100.
LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
,, ,, ROSEUM, 20s. to 25s. per 100.
,, ,, RUBRUM, 20s. to 25s. per 100.
,, CHINENSIS TIGRINUM, 5s. to 8s. per 100.
CHRISTMAS ROSES, (Helleborus niger), fine, 40s. to 60s. per 100.
Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.

BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

SPECIAL OFFER TO THE TRADE.—SURPLUS STOCK on SALE, as the land must be cleared for building purposes; all fine healthy plants, many times transplanted.

FRUIT TREES.

CHERRIES, Standards, extra strong, 9s. per dozen, 60s. per 100; half do., do., 8s., per dozen, 45s. per 100.
PEARS, Pyramids 3 to 4 feet, extra strong, 5s per dozen, 30s. per 100; Half-standards, 4 to 5 feet, strong, 7s. per dozen, 50s. per 100.
CURRANTS, Black Naples, fine, strong, 8s. per 100, 70s. per 1000.

FOREST TREES.

BEECH, 4 to 5 feet, strong, 8s per 100; 5 to 6 feet, 16s. per 100; 6 to 8 feet, 25s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUTS, Horse, 6 to 8 feet, strong, 16s. per dozen; 8 to 10 feet, 25s per 100.
,, ,, Scarlet, 5 to 6 feet, strong, 8s. per dozen; 6 to 8 feet, 10s. per dozen.
LIMES, 2 to 3 feet, strong, 4s. per 100; 3 to 4 feet, 6s. per 100; 4 to 5 feet, 10s. per 100; 5 to 6 feet, 15s. per 100; 6 to 8 feet, 25s. per 100; 8 to 10 feet, 60s. per 100.

EVERGREEN SHRUBS.

BOX, Green, 1 to 1½ foot, 2s. per dozen, 12s. per 100.
RHODODENDRONS, 6 to 9 inches, 8s. per 100; 9 to 12 inches, 12s. per 100.
,, fine and bushy, 1 to 1½ foot, 20s. per 100; 1½ to 2 feet, 25s. per 100.
YEWS, English, 9 to 12 inches, 10s. per 100; 1½ to 1½ foot, 12s. 6d. per 100; 1 to 2 feet, 16s per 100; 2 to 3 feet, 25s per 100; 3 to 4 feet, 45s. per 100, and 9s. per dozen.
B. WHITHAM, Nurseries, Reddish, near Stockport.

A Few Thousands of

CAMELLIAS and AZALEA INDICA, fine plants with buds, at low prices (on application).
COCOS WEDDELLIANA in single pots, 12 inches high, 30s. per dozen.
ARECA BAUERI, 12 inches high, 30s. per dozen.
Apply at once to
JEAN NUYTENS VERSCHAFFELT, The Nurseries, Ledeberg, Ghent, Belgium.

Planting.

GREAT BARGAINS for Clearance.

A quantity of Rhododendrons, 3 to 4 feet and under; Abies Albertii, Cupressus Lawsoniana, Thuja Lobbii, Wellingtonia gigantea, all from 4 to 8 feet, in capital order for removal. A large quantity of Tritoma uvaria, fine Pyramidal Pear and Apple Trees. Lowest prices quoted on application. Good Turf for Lawns (within 200 yards of Railway Station, S.W.R.), 5s. per rod if cut by purchaser. Apply to
J. D. CRAIG, The Nursery, Camberley, Farnborough Station.

HARRISON AND SONS, Royal Nurseries, Leicester, have the following stocks, all well-grown and healthy trees; will be pleased to send sample and quote prices for large or small quantities of any:—
5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 2 inches to 3 feet.
20,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
10,000 large trees for immediate effect, consisting of LIMES, ACACIA, BIRCH, ELM, POPLARS, SYCAMORES, &c.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard:—
PEARS on the Quince and Pear stock.
APPLES on the Paradise and Crab stock.
CHERRIES on the Mahaleb and Cherry stock.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock; do., trained trees,
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds; do., in pots for forcing, stout and well grown plants
Descriptive and Illustrative Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3d.
Miniature Fruit Garden, 3s. 6d., free by post.

The Following are Offered at a Low Price by

W. H. ROGERS, Red Lodge Nursery, Southampton:—
RHODODENDRONS, choice named.
AZALEAS, fine Ghent, and seedling.
RETINOSPORA PISIFERA AUREA.
,, LEPTOCLADON
CUPRESSUS LAWSONIANA DENSA.
TAXUS ELEGANTISSIMA.
CUPRESSUS THYOIDES VARIEGATA.
,, LAWSONIANA VARIEGATA.
THUJOPSIS DOLABRATA.
,, BOREALIS, 3 to 5 feet.
WELLINGTONIA GIGANTEA, 2 to 6 feet.
PINUS CEMBRA, 3 to 6 feet.
PERNETTYA MUCRONATA.
ARBUTUS UNEDO, 2 to 3 feet.
DESPONTAINEA SPINOSA, in pots.
EUGENIA UGNI and APICULATA, in pots.
EUONYMUS OVATA AUREA, in pots.
,, RADICANS VARIEGATUS.
GRISELINIA LITTORALIS, in pots.
LIGUSTRUM OVALIFOLIUM, 2 feet.
OSMANTHUS ILICIFOLIUS.
SKIMMIA JAPONICA, berried.
RHODODENDRON PONTICUM, bedded, 6 to 12 in.
CAMELLIA STOCKS, in single pots.
COTONEASTER SIMONSII, 1 to 2 feet.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ. The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane, Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

Annual A. B. C. Bulb Guide.

THOMAS S. WARE has much pleasure in announcing that the present year's issue of the above is now ready, and will be posted free on application. It includes complete collections of Liliums, Narcissus, Gladiolus, Iris, and numerous other families; also selections of Bamboos and Ornamental Grasses, Aquatic and Bog Plants, Herbs, &c.; and a fine collection of Hardy Orchids, to which is added a few choice Perennials, adapted for present planting.
Hale Farm Nurseries, Tottenham, London.

LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates:—25s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

TO THE TRADE.

MANETTI STOCKS, strong, clean grown, and well-rooted, 25s. per 1000.
LIMES, 10 to 12 feet, magnificent trees, 8 to 9 inches round 4 feet from the ground, 25s. per dozen.
ELMS, English, 7 to 8 feet, 20s. per 100; 10 feet, 50s. per 100; 12 feet, extra stout, 12s. per dozen.
HORSE CHESTNUT, 9 to 10 feet, extra strong and straight, 9s per dozen.
OAK, English, 10 to 11 feet, fine trees, 30s. per 100.
CHERRIES, Morello, extra fine, dwarf-trained, 20s. per doz.
H. BLANDFORD, The Dorset Nurseries, Blandford.

Fruit Trees.

SCOTT'S ORCHARDIST, the most useful work on Fruit Trees in the English language, free for 3s. 6d.
The Merriott Nurseries contain all the best varieties of APPLES, PEARS, PLUMS, CHERRIES, CURRANTS, GOOSEBERRIES, APRICOTS, PEACHES, NECTARINES, NUTS, FILBERTS, WALNUTS, &c. Trees of all sizes and shapes. Priced LIST free on application to.
J. GEORGE HILL, (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

To the Trade—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to
LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurel of many varieties, variegated and green Hollies, nearly every variety of Coniferæ, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree; also a fine and select assortment of pyramid and bush Fruit Trees, Apples, Pears, Plums, and Cherries, 12-yr. and 15-yr. old, well transplanted and in full bearing.
Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable. Address
PROPRIETOR, Whitchurch Gardens, Edgware, London.

Cheap Kentish Fruit Trees, etc.

On Ground that must be Cleared this Season.
SPECIAL OFFER.
15,000 APPLES and PEARS, Standards and Pyramids, from 60s. per 100.
20,000 PLUMS, Standards and Pyramids, from 30s. per 100.
5,000 CHERRIES, tall Standards, 75s per 100; Maiden Morello, 30s. per 100; trained, from 18s. per dozen.
LIMES and SYCAMORES, 10 to 12 feet, from 35s. per 100.
A van-load delivered free in or near London.
T. EVES, Gravesend Nurseries.—(Established 1810.)

Special Offer—Very Cheap.

THE GROUND MUST BE CLEARED.

WILLIAM KNIGHT begs to call attention to his very fine Stock of splendid CONIFERÆ TREES, all recently transplanted, viz.:—Araucaria imbricata, 5 to 8 feet, Cedrus Deodora, all sizes from 3 to 12 feet; Cupressus Lawsoniana, 10 to 12 feet; Picea amabilis and P. lasiocarpa, 10 to 12 feet; Picea nobilis, 6 to 8 feet; also P. Nordmaniana, 3 to 6 feet, &c. Price on application. Intending planters would do well to inspect the above.
CATALOGUE (52 page.) of General Nursery Stock sent free on receipt of three penny stage stamps.
Floral Nurseries, adjoining Railway Station, Hailsham, Sussex.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara 3 feet, 2s. 6d.; C. Lebanon, 3 feet, 2s. 6d.; Thujopsis borealis, 5 feet, 2s. 6d.; Thuja gigantea, 4 feet, 2s. 6d. Cupressus Lawsoniana viridis, 4 feet, 2s. 6d.; Swedish Juniper, 4 feet, 1s. 6d., 6 feet, 2s. 6d.; Golden Retinospora, 2 feet, 2s. 6d.; Ericoides, 2 feet, 1s.; Gold and Silver Hollies, 2 feet, 2s.; Picea nobilis, 3 feet, 3s.; Pinsapo, 3 feet, 2s. 6d.; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s., 5 feet, 5s.; Limes, 15 feet, 2s. 6d.; Birch, 15 feet, 1s.; Chestnuts in variety, 1s. each; Scarlet Oak, 15 feet, 1s.; Araucarias, 4 feet, 20s.; 5 feet, 30s.; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d.; Green Hollies 1 to 1½ foot, 25s. per 100.
E. WALKER, Farnborough, Hants.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
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TREE FERNS, Alsophila tomentosa, rare, newly imported, for Sale. Also ORCHIDS, Arundina chinensis (hardy greenhouse), and Phalænopsis grandiflora aurea, Saccolabium species, and others. Address
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QUEEN OF LILIES, LILIUM AURATUM. —Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6d.; No. 2, 1s.; No. 3, 1s. 6d.; No. 4, 2s. each.
ORCHIDS.—Special offer of the following fine Orchids, for £5 5s.: - 1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum giganteum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Limatodes rosea.
All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to
WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

Plants for Winter Flowering and Decoration.

MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following:— (per dozen.
AZALEA INDICA, fine plants, and well budded, 24s. to 42s.
BOUVARDIA, in variety, 18s. to 24s per dozen.
CARNATION, Miss Jolliffe, La Belle, and others, 24s. per doz.
EPACRIS, in variety, 24s. to 30s. per dozen. (per dozen.
ERICA HYEMALIS, fine plants, full of bloom-bud, 15s. to 30s.
LILY OF THE VALLEY, single crowns, 8s. per 100.
PELARGONIUMS, 18s. to 24s. per dozen.
PINK, Lady Blanche, 9s. per dozen.
POINSETTIA PULCHERRIMA, 18s. per dozen.
ROSES, in pots, great variety, 24s. to 42s. per dozen.
SOLANUMS, well berried, 15s. per dozen.
PALMS and DRACÆNAS, 24s. to 42s. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30s. per dozen; besides a large general stock of STOVE and GREENHOUSE PLANTS.
CATALOGUES of which may be had on application.
Royal Nurseries, Ascot, Berks.

To Gardeners and Flower Forcers

RHODODENDRON NOBLEANUM, from 2 to 3 feet high, and 2½ to 4 feet through, with from thirty to ninety flower-buds each. Compact plants and well furnished.
NOBLEANUM is apparently not so well known in England as it deserves to be; invaluable where flowers are in demand in Winter and Spring; forces easily in greenhouse or other warmer structure, and flowers very early out-of-doors. There is probably no other plant, size for size, yields such a bulky return of lively coloured early flowers. These vary from light pink to bright red.
DRUMMOND BROTHERS, Larkfield Nursery, Edinburgh

CHARLES NOBLE, Bagshot, Surrey, in a re-arrangement of his Nursery, finds he has an overstock of the undermentioned, which he will sell at 50 per cent. discount for cash, taken in quantities of 100 or upwards in variety at one time. Sample 100, if desired, sent.
Standard Apples, Pears and Cherries, finest named kinds; Gooseberries, White Currants, and Cob Nuts.

8, 10, and 12 feet high.	Various Heights.
Horse Chestnut.	Portugal Laurels.
Scarlet Chestnut.	Common Laurels.
Scarlet Oaks.	Colchic Laurels.
,, Maple.	Mahonia Aquifolia.
,, Thorn.	Rhododendron ponticum.
Laburnum	,, hybrids
,, Purple.	,, hybrids, named.
Lombardy Poplars.	Andromeda floribunda.
Italian Poplars.	Kalmia latifolia.
English Elms.	Azalea pontica.
American Elms.	Cupressus Lawsoniana,
Service Trees.	Picea Nordmanniana.
Sycamore.	Dwarf Roses.
,, Purple.	Erica carnea.

Come and See.

MY CHRYSANTHEMUMS.—Never was there such a collection in such order and correctness, such a display out-of-doors (450 named varieties flowering), such a stock, such health, such facilities in executing orders as you will find at Swanley. Send for H. C.'s ILLUSTRATED CATALOGUE of the above, and you will find it the most correct, best classified, and containing the best and briefest Treatise on their cultivation ever published. Post-free, six stamps. H. C. is again and has been engaged as Judge every season now for nearly twenty years.

Chrysanthemums.

ALL those preparing Plants for Exhibition or even Decoration, should see H. CANNELL'S FLORAL GUIDE, as it shows you a perfect cut bloom, and how dwarf incurved specimens and standard plants should be to carry off the first prize, together with other invaluable information. Post-free for six stamps.

"*Naseby Woolleys, Rugby.*

"Dear Sir,—At the Northampton Chrysanthemum Show I exhibited very fine blooms, and gained the following prizes:—
Special Prize for 12 Cut Blooms .. .. First.
12 Cut Blooms, incurved.. .. .. First.
6 Cut Blooms, incurved.. .. .. First.
6 Cut Blooms, Japanese, Anemones, and Reflexed First.
6 varieties, 3 in a bunch, large flowers .. .. .. Second.
The above were all cut from plants that I got from you.
"Yours respectfully, H. HARRIS,
"*Gardener to* Capt. G. Ashby Ashby."

Now is the time to see the Zonals in grandest Form AND COLOUR.

NONE without seeing can form the slightest idea of the splendour of my 100-feet house, blazing from end to end with WINTER-FLOWERING ZONAL PELARGONIUMS Such a display of colour was never before seen. White Vesuvius, Striped Vesuvius, Salmon Vesuvius, Guinea, and Dr. Denny, all grand new colours, &c., almost beyond description. One plant of each sent post-free for 10s. 6d.; twenty-four for winter flowering sent in strong plants for 20s.
H. CANNELL, The Home for Flowers, adjoining the Station, Swanley, Kent.

SWEET VIOLETS.
BLANDYANUM, Double.
BELLE DE CHATENAY, new.
KING OF VIOLETS, Double.
MARIE LOUISE, best Double.
NEAPOLITAN, Double.
REINE DES VIOLETS, Double.
NEAPOLITAN, Single.
WHITE CZAR.
VIOLET CZAR.
VICTORIA REGINA, best Single
The above are large clumps, suitable for potting, forcing, or forming beds and clumps in flower gardens; 6s. per dozen, 40s. per 100.
PRINCESS MARIE DE SAVOY, new, 3s. 6d. each.
PATRIE, 1s. each.
One plant each 12 vars. free by post, 7s. 6d.
Trade LIST on application. P. O. O. payable to
FREDERICK PERKINS, Regent Street, Leamington.

WM. MAULE AND SONS, The Nurseries, Bristol, beg to call the attention of Planters to a few large extra-sized EVERGREEN TREES they have in their nurseries to offer, so desirable for planting new grounds or forming screens or blinds so as to produce an immediate effect:—
CEDRUS DEODARA, 8 to 10 and 10 to 12 feet, 10s. 6d. each.
ABIES DOUGLASII, 10 to 15 feet, 3s. 6d. each.
PICEA PINSAPO, very bushy, 8 to 10 feet, 7s. 6d. each.
SPRUCE, Norway, 6 to 8 ft., 1s. 6d.; 8 to 10 ft., 2s. 6d.; 10 to
FIR, Silver, 8 to 10 feet, 2s. 6d. each. [12 ft, 3s. 6d. ea.
JUNIPERUS SINENSIS, 6 to 8 feet, 3s, 6d. each.
THUJOPSIS BOREALIS, 6 to 8 feet, 3s. 6d. each. [each.
WELLINGTONIA GIGANTEA, 4 to 5 ft., 5s.; 6 to 8 ft., 7s 6d.
ARBOR-VITÆ, Chinese, 6 to 7 ft., 2s. 6d.; 8 to 10 ft., 3s. 6d. ea.
CUPRESSUS Lawsoniana, 6 to 8 ft., 2s 6d.; 8 to 10 ft., 3s.6d. ea.
THUJA GIGANTEA, or CRAIGEANA, 8 to 10 ft., 3s. 6d. ea.
RHODODENDRON, Catawbiense and Ponticum vars, 4 to 5 feet, very bushy in proportion, 3s. 6d. and 5s. each.
AZALEA PONTICA, 4 to 5 ft, bushy in proportion, 2s. 6d. ea.
LAURELS, Portugal, 4 to 5 feet, 2s 6d.; 5 to 7 feet, 5s. each.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

THORNS.—Strong, 2 and 3-yr. old, in large quantities. Samples and prices on application.
RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

GERMAN LILY OF THE VALLEY, single crowns, extra strong, in splendid condition; delivery at once. Price and samples on application to
CHARLES PUTTFARKEN, Bradford, Yorkshire.

YEWS, 3½ to 4½ feet, 90s. per 100, well rooted, for Hedges, &c. GREEN HOLLIES, 1½ to 2 feet, 27s. per 100, all well rooted, &c.
JOSH. SPOONER, Goldworth, Woking.

Large Spruce, Mulberries, Aucubas, &c.

THOMAS BUNYARD AND SONS have extra fine large specimens of the above to offer, cheap; well-rooted.
The Nurseries, Maidstone, Kent.

Roses—Roses—Roses.

FINE DWARFS on MANETTI, all the leading varieties, 35s. per 100.
WILLIAM IRELAND, Pilton Nurseries, Barnstaple.

To the Trade.

SEED NOVELTIES.—Our LIST of FLOWER and VEGETABLE SEED NOVELTIES is now ready, and will be posted on application to
F. SANDER AND CO., Seed Growers, St. Albans.

QUICK, LARCH, &c.—A quantity of very good transplanted 2-yr. old QUICK, at 10s. per 1000.
LARCH, transplanted, 2 to 3 feet, 25s. per 1000.
For cash with order. Samples on application.
N. LAWRENCE AND SON, Burnsfield Nurseries, Chatteris, Cambridgeshire.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

Planting Season.

MESSRS. JOHN STANDISH AND CO. beg to call the attention of those engaged in planting to their extensive and well-grown stock of EVERGREEN and DECIDUOUS PLANTS, FOREST TREES, &c. All are without exception well rooted and in fine condition for removal. The following list comprises a few of those Trees, of which they grow immense quantities:—

FOREST TREES.
Acacia, 3 to 4 and 10 feet.
Birch, 3 to 4 feet and 10 to 15 feet.
Chestnut, 2 to 4 feet.
Pinus Laricio, 1 to 2 feet.
Pinus austriaca, 1 to 1½ foot.
Scotch Fir, 1 to 1½ foot.
Spruce, 1½ to 2½ feet.
Weymouth, 3 to 4 feet.
RHODODENDRON, fine named varieties.
,, seedling, 2 to 4 feet, fine.
,, ponticum, 12 to 18 inches, very bushy.
YEW, English, 2, 3 and 4 feet.
,, Irish, 3, 4 and 5 feet.
BOX, 2 to 2½ feet.
AUCUBAS, green and variegated.
BERBERIS, Darwinii.
,, Aquifolium.

LAUREL, common, 2 to 2½ feet.
,, ,, 3 to 4 feet.
,, caucasicum, 2 to 2½ feet.
,, obovata, 1½ to 2 feet.
,, latifolia, 1 to 2½ foot.
,, Portugal, 1½ to 2½ feet.
,, ,, 3 to 4 feet.
HOLLY, Green, 1 to 1½ foot.
,, hybrid, 1½ to 2 feet.
,, ,, 2 to 3 feet.
,, variegated, in variety.
ROSES, H.P., in variety, Standards.
,, ,, Half-standards.
,, ,, Dwarfs.
,, Tea, in pots, in great variety.
,, Gloire de Dijon, extra strong.
,, Marechal Niel, extra strong

CLEMATIS, IVIES, and other CLIMBING PLANTS, and a vast variety of EVERGREEN and DECIDUOUS SHRUBS. Also
FRUIT TREES.—Pyramid Apples, Pears, Plums; Trained Apples, Apricots, Cherries, Nectarines, Pears, Peaches and Plums.
Samples and quotations on application.
Royal Nurseries, Ascot, Berks.

ODONTOGLOSSUMS, CATTLEYAS, &c.

HUGH LOW & CO.

Have a large Stock of the undermentioned ORCHIDS, which they can offer by the dozen or hundred.

Prices on application. Inspection invited.

ODONTOGLOSSUM ALEXANDRÆ
,, CERVANTESI
,, CIRRHOSUM
,, HALLI
,, INSLEAYI LEOPARDINUM
,, ROEZLI
,, SCHLEIPPERIANUM
ODONTOGLOSSUM ROSEUM
,, VEXILLARIUM
CATTLEYA DOWIANA
,, GIGAS
,, LABIATA, Varieties
,, LODDIGESI
DENDROBIUM BENSONIÆ
DENDROBIUM WARDIANUM
MESOSPINIDIUM VOLCANICUM
ONCIDIUM KRAMERI
,, VARICOSUM, Varieties
PHALÆNOPSIS SCHILLERIANA
PILUMNA (TRICHOPILIA) FRAGRANS

CLAPTON NURSERY, LONDON, E.

WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS, HERTS,

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

RICHARD SMITH & Co. WORCESTER

FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea-scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease; Planting Canes, 3*s.* 6*d.* to 5*s.* each; extra strong Fruiting Canes, 7*s.* 6*d.* to 10*s.* 6*d.* each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*," and RICHARD SMITH & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6*d.* each. Maiden Trees, 1*s.* 6*d.* each; Bushes, 3*s.* each; Standards, Pyramids, and Dwarf-trained Trees, 3*s.* 6*d.* and 5*s.* each.

HARDY HERBACEOUS and ALPINE PLANTS, their scientific and English names, height, colour, time of flowering, and other useful information. Descriptive Price List for a penny stamp. Collection of 100 beautiful hardy varieties for Garden Beds, Borders, or Rockeries, for 30*s.*

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST of STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for a penny stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for a penny stamp.

ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

RICHARD SMITH & Co. WORCESTER

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
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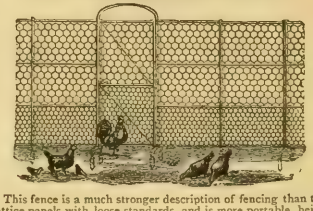
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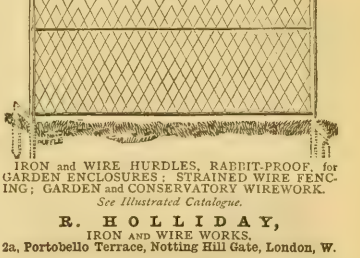


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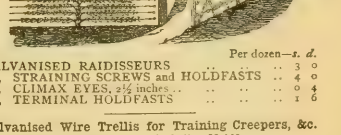
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FOR TIGHTENING THE WIRES.



One required for each line of Wire.
Price 4*s.* per dozen, with Holdfasts complete.

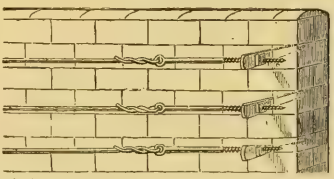
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Spaced about 10 feet apart for guiding the Wires on the Wall.

1½	2	2½	3	3½	4½ inches long.
2*d.*	3*d.*	4*d.*	5*d.*	7*d.*	9*d.* per dozen.

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No. 14 Gauge Wire	1*s.* 0*d.*	1*s.* 7*d.*	2*s.* 1*d.*	2*s.* 7*d.*	3*s.* 1*d.*	No. 13 Gauge Wire	1*s.* 2*d.*	1*s.* 10*d.*	2*s.* 5*d.*	3*s.* 0*d.*	3*s.* 7*d.*

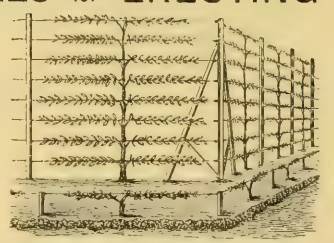
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	s. d.	*£ s. d.*
4 feet high	9 0	0 14 0
5 ,, ,,	10 6	0 16 0
6 ,, ,,	11 6	0 17 0
7 ,, ,,	16 0	1 2 0
8 ,, ,,	19 0	1 6 0

INTERMEDIATE STANDARDS, No. 160.

4 feet high	1 5	0 2 2
5 ,, ,,	1 8	0 2 11
6 ,, ,,	2 0	0 3 6
7 ,, ,,	2 3	0 3 9
8 ,, ,,	2 6	0 4 3



The arrangement of these Trainers is much improved, and is now rendered so simple that they can be readily fixed by inexperienced hands. The self-fixing bases of the Terminating and Intermediate Standards are of Iron, and *require neither wood nor stone to attach them to.* The wires are usually placed about 8 inches apart.

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For tightening the Wires.
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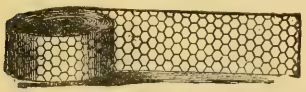
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REDUCED PRICES.



Prices per Lineal Yard, 24 inches wide :—

Mesh.	Light.	Medium.	Strong	Ex. Strong
	s. d.	*s. d.*	*s. d.*	*s. d.*
2 inches	0 2½	0 3½	0 4½	0 5½
1½ inch	0 3½	0 4	0 4½	0 6
1½ inch	0 4	0 4½	0 6	0 7½
1¼ inch	0 6	0 7½	0 10	1 0
1 inch	0 7½	0 9	1 0	1 4
½ inch	0 10	1 0	1 3	1 8

Usual widths kept in stock, 12, 18, 24, 30, 36, 48 inches.
2 inch Mesh kept in stock 72 inches wide. This will be found very convenient for erecting Poultry Yards.
All Hoop Iron Charged at Proportionate Prices.
SOFT GALVANISED TYING WIRE, 6*d.* per lb.
CUTTING NIPPERS, 1*s.* 3*d.* per pair, very useful for Cutting Wire Netting, &c.

NEW POULTRY FENCING.

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No. 508.



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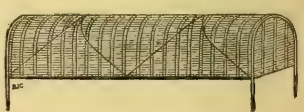
This ornamental Fencing is easily fixed or removed by any labourer, without extra cost.

Price—6 feet high, 5s. 9d. per yard.
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Including the Iron Standards and the Bolts and Nuts for securing the Panels to the Standards. Doors are charged 3*s.* extra except when 12 yards are ordered, in which case a door is included.

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"As its name implies, a capital variety, useful for forcing."
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"A charming annual with pretty puce or mauve coloured flowers; very distinct."

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"Greatly admired here."
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SATURDAY, NOVEMBER 23, 1878.

A WEEK AT THE LAKES.

(*Concluded from p. 622*)

WINDERMERE.

So pleasant were the outskirts of the promised land that, in spite of the wicked leers of a grotesque stone demon at Furness, we started almost reluctantly for Windermere on the 26th, when our week at the Lakes properly commenced. But, though with a beauty different in kind from that of Grange and its neighbourhood, the Switzerland of England soon made us change our minds. It is useless, however, to dilate on the well-worn theme of the varied hues of the deep-looking water of the lake on whose surface silver and azure flash in rippling conflict with dark olive-greens and browns; useless, too, to tell again of the clouds furling from those mastheads and yardarms of earth, the peaks of Coniston, Old Man, and Langdale Pikes, and the ridge of High Street. As a botanist, I was led to the many bogs of the hills, and a view over one of these may be less in the beaten tourist track. The dark slate rock, though peeping out occasionally, was nearly covered by the red flowers of the Ling, but here and there was grey with lichens, orange-patched, save where the lighter waxen pink of the cross-leaved Heath or the bright yellow Furze lit it up. Here some dead Heather was a rich brown, there a sheet of green Bracken was broken by patches of lighter shades of the same colour where a frond or two was dead; whilst in the foreground the black soil of the bog peeped out between little pools of water, clumps of pale green sphagnum, dark green Rushes with rich chocolate clusters of blossom, the flame-red fruit-spikes of the Asphodel (Narthecium), and, above all, the delicate white stars of the lovely grass of Parnassus. August 28 was a red-letter day to me. Seizing, in the marshes between Troutbeck and Kirkstone, my first opportunity of observing this beautiful flower in plenty, and, a few days later, at Grasmere, I could not but wonder that Wordsworth should have preferred to hymn the Lesser Celandine to singing the glories of Parnassia palustris. For days I examined some hundreds of these blossoms in every stage of development—observing their method of fertilisation, and looking for evidence as to their alleged carnivorous function. I was greatly impressed by the economy of the flower. It is markedly protandrous, the large anthers being fully formed and covering the immature apex of the ovary with their backs when the corolla first expands. The flowers are remarkably variable in diameter—from under three-quarters of an inch to over 1½ inch. In this earliest stage all the subulate filaments are bent back towards the centre of the flower. The secretion of the glands seems never very copious; it has a sweet taste, and I never detected any acid in it. What I saw led me to conclude that it was produced more freely in sunshine than on dull days; but it was by no means quickly replaced when removed. I observed a considerable number of insects—thrips, ants, and small flies—crawling aimlessly about the corolla, but in no single instance did I see an insect impeded by the secretion, nor did I ever find dead insects within the flower. The anthers mature singly, each filament in turn, straightening itself, and moving slowly outwards till it lies horizontally between two petals, the anther thus describing an arc of over 120°. The anther falls off after discharging its pollen, while the stout and now rigid filaments are more persistent than the petals. Not till all the anthers have ripened does the stigmatic secretion indicate its maturity, cross-pollination is, therefore, essential. The Droseras were far less common than the Pinguiculas, which at Kirkstone seemed to be growing on a face of bare, dry, hard slate rock. On going to gather it, however, one soon found that the rock, though bare, was anything but hard or dry; it was in fact a perfect sponge, built up of splintery fragments of the black clayey slate. Burying its roots deep down in similar watery crannies, the Parsley Fern luxuriates amidst the spray of the Ghyll, that dashes down the Patterdale side of the well-marked watershed of Kirkstone Pass, into the placid tarn of Brothers' Water, near whose shore the Purple Loosestrife competes with the glory of the white Water Lily. The bare mountain peaks reflected in the lakelet give grandeur to a scene unsurpassed for romantic beauty.

STOCK GHYLL FORCE: VANDALISM.

Naturally shunning tourist haunts one would not like to miss the charms of Stock Ghyll Force, so fatally near the town of Ambleside. Nothing in my holiday was more charming than the clamber from stone to mossy stone, up the bed of the quick babbling streamlet as it leapt from pool to pool along the bottom of the ravine it has during countless ages been cutting for itself—a ravine now covered with nut bushes, draped with Fern and overhung by the Fern-like leaves and coral berries of the Mountain Ash. Though not so large as Niagara it would have been pleasant to stand and watch the white foamy cataract at the head of the glen, but for a piece of true British vandalism. A Mr. Allan Mackereth is, it seems, the proprietor of the Fall, and has most munificently placed along the banks one or two wooden benches and an iron railing for intending suicides to hang their overcoats on. He has also decorated the trees with various notices—has enclosed the Fall with a stout fence, within which he munificently allows the public to enter on paying 3*d.* a head; and he, moreover, kindly offers a choice assortment of photographs and Ferns for sale, the latter in lieu of those growing in profusion around, which visitors are "requested not to gather," as they are for sale. Lord Dufferin has protested against the desecration of Niagara by Yankee "enterprise," so perhaps I may be allowed to enter a humbler protest on behalf of this humbler fane of Nature against the sacrilege of the canny Scot.

GRASMERE AND RYDAL.

From Ambleside it is but a short walk to the two beautiful lakes, Rydal Water and Grasmere—sacred to the memory of Wordsworth. In the quiet churchyard of the latter village, under a venerable Yew and close to the clear bubbling river Rothay, he rests side by side with his wife, his sister, his sister-in-law, his infant son and daughter, a nephew, and the unfortunate young friend, son of a great contemporary, Hartley Coleridge. The quaint little church is dedicated to Saint Oswald, as we learn from a carved oak poor-box inscribed "S. OSWADYS POOR-BOX. 1648;" and within it is a tablet bearing this inscription:—"To the memory of William Wordsworth, a true philosopher and poet, who, by the special gift and calling of Almighty God, whether he discoursed on man or Nature, failed not to lift up the heart to holy things, tired not of maintaining the cause of the poor and simple; and so in perilous times was raised up to be a chief minister, not only of noblest poesy, but of high and sacred truth." Below is a bust in relief between a Daffodil and a Celandine; but, alas! that

Mr. Woolner, whose signature, "T. Woolner, sc., London," appears below, did not consult a botanist. The Chelidonium majus, or Greater Celandine, is represented; a beautiful plant, it is true, but very unlike Wordsworth's favourite Ranunculus Ficaria, the Lesser Celandine.

From his tomb at Grasmere I walked towards his home at Rydal, and between the two lakes I sat me down on a round mossy stone by the brawling stream, whose waters, dark green and olive-brown, flecked with silver light and snowy foam, dashed along between grey boulders, green-crowned with moss, chocolate-crested reeds, glossy-leafed Alders, a ferny wood-slope, and a green meadow, whilst the moorhen popped in and out of the banks, and saw opposite me a broken mass of dark grey rocks emerging here and there through a bright coat of bracken, which varied it with streaks of rich orange-brown. A little further, and in a marshy pool I found the curious little Bladderwort (Utricularia minor) spreading its tiny eel-traps. The wall by the roadside was gay with Sedum Rhodiola, while from the garden wall of that home, so suitable in its creeper-hung walls and view-commanding site for a poet's abode —Rydal Mount—I gathered one among the many plantlets of Herb-Robert, a wilding after Wordsworth's own heart.

Such were some of the scenes I noted in a week at the Lakes—scenes that I left with regret for the very different beauties of the Forest of Dean. *G. S. Boulger.*

New Garden Plants.

LYCASTE WITTIGII, *n. sp.**

This is an unusual case of the most astonishing mimicry. When I opened the last Borwickian case I took out *inter alia* a four-flowered inflorescence of short, olive-green, broad, blunt-chinned, shining flowers, striped with brown, smelling like Quinces, with sepals and petals upright. It was Lycaste tetragona, Lindl., a well-known old plant—not the least doubt occurred to me, so close was the resemblance.

The duty of a sincere monographer is, however, never to believe in his own infallibility, never to rely on his memory, always to watch and to dissect. Having, therefore, opened a flower, What did I see? In lieu of a concave, sharp, three-toothed shining lip I had a convex one, with a blunt emarginate middle lobe covered with hairs, not greenish, but beautiful dark violet. It was quite startling! But what could I do? I made a water-colour sketch, full analyses, and enjoyed the unexpected lesson I had obtained once more. The lip is unusually pretty, the prettiest in all the group; the outside is white, with small purplish dots on the middle lacinia; the side laciniæ are acute, rather large, rounded outside, striped with dark purplish veins *à la* zebra; and the disk is dark violet-purple. At the base of the anterior lacinia is a brown emarginate depressed lamella. The column is whitish, yellow under the stigma, and full of hairs there, with the three violet stripes on the foot. The petals are light olive, with a few brown streaks.

I made a curious observation on the smell. I thought it like that of Quinces, just as in L. tetragona. I asked a very acute visitor his opinion. He said, with great emphasis, "Ah, what a strong smell of Roses!"

The novelty is Brazilian, and was grown by Mr. Walton. I have to thank for it its enthusiastic possessor, Mr. Alfred Borwick, who kindly informs me that it was discovered by M. Emil Wittig, of Rio Janeiro, a gentleman who has spent much time in hunting for Orchids, and to whom it is dedicated, at Mr. Borwick's request. *H. G. Rchb. f.*

MAXILLARIA CALOGLOSSA, *n. sp.*†

This is a novelty in the way of Maxillaria setifera, Lindl., with a certain mimicry of Maxillaria grandiflora, Lindl., having a strong chin and broad lateral sepals. It is yellowish, and has a lip with velvet on the disk, and purplish lines on the side laciniæ. It has ligulate ancipitous bulbs and cuneate ligulate leaves of the texture of parchment. It is possibly Neogranadian. I have to thank for it Sir Trevor Lawrence, who flowered it in April last. *H. G. Rchb. f.*

* *Lycaste Wittigii*, n. sp.—Aff. Lycastidi tetragonæ, Lindl.—Labello trifido, laciniis lateralibus semiovatis acutis; lacinia mediana ovata emarginata convexa pilosa, callo depresso emarginato in basi laciniæ anticæ; antheræ lobis lateralibus obtusis, nec acutis.—Brazil. *H. G. Rchb. f.*

† *Maxillaria* (luteo-alba) *caloglossa*, n. sp.—Aff. Maxillariæ setiferæ, Lindl.—Pseudobulbo ligulato ancipiti, folio chartaceo cuneato oblongo; floribus brevi pedunculatis; bracteæ ampliuscula obtusa ovario pedicellato æquali; mento angulato valido; sepalo impari ligulato acuto; sepalis paribus lato ligulatis acutis; tepalis lineatibus acutis; labello trifido, laciniis lateralibus obtusangulis; lacinia media triangula acute carnosa crenulata, longe porrecta, callo depresso oblongo ligulato in basi laciniæ mediæ; disco inter lacinias laterales velutino.—Flos flavidus. Labellum pallidius striis purpureis in laciniis lateralibus. Columnæ antice purpurea. Anthera apiculata. Sir Trevor Lawrence Dorkingensis excoluit. *H. G. Rchb. f.*

THE RHUBARB OF COMMERCE.*

SINCE the publication of the *Rhabarbarology* by Tilling (Frankfurt-a-M., 1679, 4) it has been the endeavour of a good many writers to furnish further evidence as to the origin of the different kinds of Rhubarb in medical use. Nevertheless, a certain mystery still shrouds this question. Even since Professor Baillon introduced his Rheum officinale, and Dr. von Regel the Rheum palmatum var. tanguticum to the botanical world and into several gardens in Europe, the question as to the origin of this valuable drug has remained an open one, so that further contributions to the subject will still be received with interest.

At the end of 1873 Professor Münter obtained from the German Consul in Shanghai, M. Lueder, two strong roots packed up in two native baskets with the original loamy soil in which they grew. Though a severe frost which occurred on the journey from Hamburgh to Greifswald had injured the heads of these roots they soon began to show life, and a few months later they were in good health. Professor Münter, as well as the late Professor A. Braun, who had supposed them to belong to the Rheum officinale, Baill., now found characters which are the exclusive attributes of the tribe with undivided leaves.

In M. Lueder's letter we find the following remarks:—"Our interpreter, M. Franzenbach, found the plants in that part of the country of the Moguls situated in a north-western direction from the Chinese province Schensi, and the Moguls assured him that they furnished the Rhubarb of commerce. The temperature of that region falls to —3° R. = 25° F; snow falls but little, and the winter generally lasts eight months; the summer heat varies from 18° to 20° R. (73°—77° F).

"The root attains a length of 3 feet, more or less, and about 4 inches in diameter. At least six years are required before the roots are of any use, then the Moguls cut them off, 4 inches below the surface. They are exposed to the air or placed in the vicinity of fire-places, to get them gradually dried. Thus prepared, they are sold to the Chinese, who, after having peeled them, bring them into commerce."

Besides these two original roots there were two packets of seeds enclosed in the baskets. One kind, which had been collected by the Chinese in the province Sczechuan, and which was said to furnish good Rhubarb, proved to belong to the genus Rumex; but the other kind, which was gathered in the same locality and at the same time as the roots, turned out to be a true Rheum. Of both a good portion was sown in the spring of 1874, and they germinated well. As to the seedlings of Rumex, they presented in their leaves, stalks, flowers, and even in the form of their seeds, a great similarity to our European Rumex crispus. But a careful examination after a four years' trial showed evidence that they did not even come into the same tribe as that in which Meissner (DC. *Prodromus*, xiv.) places the species of Europe. After comparison with a great many other species from Europe, America, and Asia, no relationship was traced, and undoubtedly a new species was in the field, called Rumex Luederi.

Without entering into a diagnosis or a very detailed description of this species, I shall only allude to the following points—The yellow orange-like colour, which most parts of the plant possess, the harsh and peculiar bitter taste of the roots, and the presence of numerous crystalline conglomerations in conjunction with starch. As these are points met with in the officinal kinds of Rhubarb, they give room to the conjecture that we have to deal with a plant used as a drug in China and which, perhaps as a substitute for true Rhubarb, is sold as "Rhubarb from Canton."

Coming now to the two original plants from the country of the Moguls, and the seedlings from the same region, Professor Münter, after five years' close observation, was at last convinced that the former, as well as the latter ones, all belonged to one species, which abounds in forms, and which turned out to be a new species — Rheum Franzenbachii, Mtr.; R. Franzenbachii, β mongolicum. There cannot exist any doubt that M. Franzenbach visited a part of the interior of Asia which no European had entered before him. It is a pity that this new species of Rheum does not belong to such a typical form with palmate leaves as Rheum officinale and R. palmatum var. tanguticum do. The exact habitat of these two species has not yet been ascertained, and for the present it seems impossible to indicate with any degree of accuracy the geographical distribution of the species of Rheum with divided palmate leaves. It is not at all improbable that we have obtained in Rheum Franzenbachii and its variety a species which, in combination with those with palmate leaves, supplies the substratum of the finest Chinese, formerly Russian, Rhubarb.

As for the diagnosis and detailed description of this new species we can only refer the reader to Professor Münter's memoir, which indicates the probability that R. Franzenbachii, with its variety, and R. palmatum var. tanguticum, both grow on the south margin of the Gobi desert. *Goese, Botanic Garden, Greifswald.*

* *Beitrag zur Rhabarbarologie.* Von Professor Dr. Julius Münter. Extrait des Actes du Congrès International de Botanistes, &c., tenu à Amsterdam en 1877.

ORNAMENTAL PLANTING.*

IN laying out ornamental plantations the first and great principle which ought to guide us, is to take a view of the general outlines not only of the ground proposed to be planted, but of the peculiar conformation of the surrounding country. Who is the great mother of taste? Nature, of course; and what better preceptor can we have, then, to imitate? Speaking of the laying out of plantations it may be interesting and perhaps necessary that I should lay down certain of the leading principles in their general formation. If the country generally in which such plantations are to be formed is hilly or rolling, the great object which the planter ought to have in view is to make the outlines as irregular and unformal as circumstances and good taste will permit. While at the same time distributing the plantations on the most exposed parts of the ground so as to render mutual shelter to each other and to the lower parts, they ought also to possess the appearance at various points in the landscape of one continuous plantation, while from other points they should present to the eye vistas and harmonious views, which by their informality and irregular outlines may be duly appreciated by educated taste. While this refers more particularly to the most extensive branch of planting, the same principles, on a smaller scale, may be applied to the more circumscribed areas of ornamental grounds. Let us take an example: it is proposed to ornament a newly-built villa with shrubs and other ornamental plants. We shall presume that the whole ground attached to the villa only extends to an acre or two, or perhaps even less than an acre. What should be the first object of the landscape gardener? It is to give extent to this limited space by the proper distribution of shrubs and clumps of plantation.

How can this be attained? First, by distributing your clumps in such an irregular manner that the views, either looking from the mansion or entering upon the grounds, will be intercepted by these clumps, and preclude the possibility of seeing at a glance the full extent of the ground. Again, one object which ought ever to be borne in mind is, that where it is necessary to inclose your ground by either a wall or unsightly fence, these should as quickly as possible be masked by some low planting of shrubs or low-growing trees; and if the surrounding country or neighbouring possessions are of a suitable nature, you can then take possession of the view outside of your own ground, and thereby give or convey to the observers the idea of greater extent. This principle, although given in reference to a residence with a small area of ground attached, is still quite as applicable to grounds of larger extent; and, while in some cases this may be varied to suit particular circumstances, I consider it the basis upon which ornamental planting should be carried out.

Straight avenues of ornamental trees on flat ground are in perfectly good taste, so long as they are distri-

* Extract from a paper read by Mr. C. S. France, Penicuik, at the meeting in Edinburgh on November 5 of the Scottish Horticultural Association.

buted with the object of obtaining vistas, and showing off to the best advantage the symmetry of the trees employed. But to plant avenues or straight lines on hilly or rolling ground, I consider quite out of character. Were it necessary, and had I sufficient time, I might have gone into the distribution of the different kinds of trees and shrubs in an ornamental plantation. As, however, this must vary very much with the particular locality and nature of the soil and climate, I prefer to leave this part of the subject untouched in the present paper, my object being more to indicate the outlines of certain leading principles than to lay down dogmatic rules on this important subject.

I am aware of having very imperfectly dealt with the whole matter, but if I have by merely hinting at a few of the abstract principles of ornamental planting, evoked a spirit of enquiry and observation, I shall feel satisfied that I have at least done something to help the progress of knowledge.

SPECIMEN CHRYSANTHEMUMS FOR EXHIBITION.

THE annual series of London and suburban Chrysanthemum exhibitions are valuable as keeping alive the old fire—a desire to excel on the exhibition stage. This, like the sacred fires of old, must not become extinguished, and thus as old growers drop aside, we find younger men, who have caught something of their old spirit, come on to succeed them. We are thankful it is so.

One of these young growers is Mr. James Levesley, Spring Grove Lodge, Isleworth, assisted by his able lieutenant and successful florist, John Wiggins. There are some specimens at Spring Grove Lodge worthy the highest work of the ablest past grand master in Chrysanthemum culture—specimens from 4 to 5 feet through, grandly grown and splendidly bloomed, and with much more of that natural habit of growth than is sometimes seen in exhibition plants. There are some twenty-five specimens in 11½-inch pots, averaging in not a few instances from 100 to 150 flowers—size, shape, foliage, and blooms, all first-rate.

What striking illustrations these plants afford of the principle of rapid development in the Chrysanthemum. Early in January last these plants were bought from a nursery in thumb-pots; they were pushed on into growth, shifting them from smaller to larger pots till they were finally put into their blooming pots in the last week in June. This was the fourth shift—from thumbs to 60's, then 48's, then 32's, and then to the larger size.

The fine development of foliage and flower Mr. Levesley attributes to Clay's Fertiliser, a patent manure, which is being much used by market growers. None of this was mixed with the soil used during the shifts, but it has since been freely applied in the form of surface-dressing. Next year it will be used with the potting soil. This manure is simply applied as in the case of other fertilisers of a similar character, sprinkling a tablespoonful on the surface and watering it in. The rich, deep olive-green of the foliage, stout and hard in substance, is attributed to this manure; the fine development of the flowers, seen in their number, size, and colouring, is attributed to the same source. There is not a plant but is well furnished to the very base with a fine, free, healthy growth, and the balance of foliage and flowers is well adjusted.

A list of the varieties may be instructive. There is one red variety — Julia Lagravère, a magnificent specimen, fully 5 feet through, shrouded in flowers. Of lilac varieties—Beauty of Stoke Newington, very fine; Lady Hardinge and Lady Slade. White: Venus, Empress of India, a really grand plant, and Mrs. Geo. Rundle; Elaine and Fair Maid of Guernsey, two free flowering Japanese varieties also come under this heading. Yellow: Jardin des Plantes; Mrs. Dixon, the fine golden sport from Mrs. Geo. Rundle; Gloria Mundi, and Golden Empress of India. Bronze: Jardin des Plantes, with the straw-coloured George Glenny. Lord Derby, dark purple, deserves special mention for its fine and striking hue of colour.

The stems of the plants are supported by stakes, almost entirely hidden from view by the foliage; no framework else of any kind is employed in getting the plants into shape.

Equally fine in development are the Pompon varieties, which, from the nature of their free growth, are trained in a more formal manner, of a convex shape, the centre of the plant being scarcely more than a foot above the surface of the soil, the circumference below the level of the bottom of the pot. Opinions may differ as to this mode of training, but in regard to the fine development of the plants there can be no difference of opinion. The profuse growth permits of no glimpse of the framework to which the shoots are tied.

Of red-flowered Pompons there are Bob, that fine old variety that for brilliancy of colour is not beaten yet—if it were only a little earlier in getting into bloom it would be more useful; Prince Victor, chestnut-red, a little dull in colour; and Fanny, intermediate between the two in point of tint, a capital grower, good habit, and earlier than Bob. Yellow: St. Michael (pure gold in colour), Antonius, and General Canrobert—the three best of this colour for show purposes. Lilac: Ernst Benary, a beautiful variety when the flowers are fully expanded, but it requires a lot of getting out, there being so much stuff in the flowers; and Lilac Cedo Nulli. Rose: Rosinante, Duruflet, very fine: an immense plant of this is coloured in the flowers beyond what is usually seen; and Prince of Orange, late, but good. Purple: Cinderella, very fine; and La Parnasse, pucy purple, very fine and distinct; and, lastly, the bronzy purple Cedo Nulli.

Some standard Pompons are remarkable for the splendid heads of bloom they carry. They are on clean stems, 2 to 2½ feet in height, the flowering heads taking a bush form, and they are much less formal in appearance than plants tied out to metal supports. Such plants are invaluable for conservatory decoration at this time of the year. There are not only large heads of bloom, but such blooms! The varieties are Madlle. Marthe, white; St. Michael, White Trevenna, a truly snow-white Chrysanthemum; Matthias Bois, bronzy crimson, very good; and two or three other fine varieties, unknown.

Some of the newer Pompon varieties are to be found in this collection, viz., Figaro, a hybrid Anemone, gold and cinnamon, very fine and effective, and a good exhibition variety; Odoratum purpureum, rich purple, very fine bright colour, capital habit, and sweetly fragrant; Madame Reine Verne, white, with golden centre; Pania de Belocca, white, a delicate and very fine variety; and Maréchal de Creyne, golden-yellow, very fine bold flowers, and excellent habit of growth.

Mr. Wiggins was not far wrong when he said that success with the Chrysanthemum depended to a great extent on the attention given to the plants during the summer. The plants under notice were kept growing on in a cold frame till May to guard them from check from cold winds; they were never plunged at any time, and they were constantly watered and syringed during the summer. *R. D.*

EUCALYPTUS GLOBULUS.

IT is now more than twelve years since I became intimately acquainted with the famous Blue Gum from Tasmania. At that time I began to reside in the beautiful South, and the more I saw and heard of that splendid tree the more I became convinced that it would by-and-bye turn out the *princeps* of the arborescent vegetation in Southern Europe. Leaving Portugal at the end of 1876, I did not say farewell to my old favourite, but tried, though on a much smaller scale, to introduce it to the conservatories of our northern clime. As even young seedlings possess strong aromatic properties to a high degree, the thought was not so very far fetched that they might be tried as air-refreshers.

Lately the director of the Greifswald hospital, Professor Mosler, has made some successful experiments with the cultivation of baby-like Eucalyptus in the infirmaries, especially in those where contagious maladies are treated, in order to neutralise, through the aromatic odour, which even the quite herbaceous leaves exhale, the miasma always concentrated in such localities. Four or five young plants about 1 metre in height were sufficient to impart a very agreeable perfume to a somewhat large room, and the poor sick seemed to be very fond of the peculiar smell. Further trials on a much larger scale have been commenced, and it is to be hoped that the medical staff of other hospitals will follow the example.

Would it not also be advisable to try the well-famed qualities of the Blue Gum in schools and other localities where many people are assembled? Experience would soon show if this is an illusion, and if not nurserymen might be engaged to raise thousands of plants by seeds. These can easily be procured, and as the young plants require but very little care the public would purchase them at a very moderate price. *E. Goeze, Botanic Gardens, Greifswald.*

NEW PLANTS CERTIFICATED

AT THE ROYAL BOTANIC SOCIETY'S EXHIBITIONS, 1878.

*** B.C., Botanical Certificate; F.C., Floricultural Certificate; both being equal to a First-class Certificate.*

Abutilon Lady of the Lake	Osborn & Sons, Mar. 27—B.C.
Adiantum cyclosorum	Veitch & Sons, May 22—B.C.
,, Lawsonianum	Veitch & Sons, April 24—B.C.
,, tetraphyllum gracile	Bull, June 12—B.C.
Alocasia Thibautiana	Veitch & Sons, June 12—B.C.
Alsophila plumosa	(See Athyrium scandicinum)
Amaryllis Medeia	Veitch & Sons, May 22—F.C.
Anemidictyon Phyllitidis tessellata	B. S. Williams, Mar. 27—B.C
Anthurium Dechardi	B. S. Williams, May 22—B.C.
Aralia venusta	Bull, June 12—B.C.
Areca flava	B. S. Williams, June 12—B.C
,, gracilis	Veitch & Sons, May 22—B.C.
,, purpurea	B. S. Williams, June 12—B.C.
Athyrium scandicinum	B. S. Williams, May 22—B.C.
Azalea (ind.) Mad. Lefebvre	C. Turner, April 24—F.C.
Begonia Baron Leguay	Laing & Co., June 12—F.C.
,, Davisii	Veitch & Sons, June 12—F.C.
,, Duchess of Teck	Veitch & Sons, June 12—F.C.
,, Lælia	Laing & Co., May 22—F.C.
,, Symmetry	Veitch & Sons, June 12—F.C.
,, Pearcei vitellina	Laing & Co., June 12—F.C.
,, President Burelle	Laing & Co., May 22—F.C.
Bellea cœlestis	Veitch & Sons, June 12—B.C.
Bowenia spectabilis serrulata	Bull, June 12—B.C.
Calyptronoma Swartzii	B. S. Williams, May 22—B.C.
Carnation A. Alegatière	Veitch & Sons, Mar. 27—F.C.
Cattleya Mardelii	Veitch & Sons, June 12—B.C.
,, tricolor	Veitch & Sons, June 12—B.C.
Cibotium Chamissoi	Bull, June 12—B.C.
Cœlogne corymbosa	Bull, June 12—B.C.
Coffea liberica	Bull, June 12—B.C.
Coleus George Bunyard	Veitch & Sons, May 22—F.C.
,, Kentish Fire	B. S. Williams, May 22—F.C.
Crinum Verschaffeltianum	Veitch & Sons, May 22—B.C.
Croton Challenger	Veitch & Sons, June 12—B.C.
,, Hanburyanus	Veitch & Sons, June 12—B.C.
,, Prince of Wales	B. S. Williams, May 22—B.C.
,, Queen Victoria	B. S. Williams, May 22—B.C.
,, Rex	Bull, June 12—B.C.
Cyclamen persicum Brilliant	R. Clarke, March 27—F.C.
Cyphokentia macrophylla	(See Ptychosperma rupicola)
Cypripedium superciliare	Veitch & Sons, June 12—B.C.
Cypripedium porphyreum	Veitch & Sons, March 27—B.C.
Dactylis glomerata longissima aurea	E.G. Henderson, June 12—B.C.
Davallia elata	Veitch & Sons, June 12—B.C.
,, fijiensis	Veitch & Sons, June 12—B.C.
Dendrobium bigibbum superbum	B. S. Williams, May 22—B.C.
,, superbiens	B. S. Williams, May 22—B.C.
Dieffenbachia Carderi	Bull, June 12—B.C.
Dioscorea retusa	Veitch & Sons, April 24—B.C.
Doodia aspera multifida	Bull, June 12—B.C.
Dracæna Bausei	B. S. Williams, April 24—B.C.
,, Berkeleyi	B. S. Williams, May 22—B.C.
,, Frederici	B. S. Williams, May 22—B.C.
,, Mrs. Bausé	B. S. Williams, April 24—B.C.
,, Renardii	B. S. Williams, April 24—B.C.
,, Scottiæ	B. S. Williams, May 22—B.C.
,, vivicans	Bull, June 12—B.C.
Echinocactus cylindraceus	Bull, June 12—B.C.
Erica obbata expolita	Rollisson&Sons, June 12—B.C
Grevillea discifolia	Rollisson&Sons, April 24—B.C.
Glomera jasminiflora	B. S. Williams, April 24—B.C.
Gloxinia Unique	Veitch & Sons, June 12—F.C.
,, Countess Amelia	Fisher, May 22—F.C.
,, Coupe d'Hebe	Veitch & Sons, May 22—F.C.
,, Duc de Cazes	Bull, June 12—F.C.
,, Madamoiselle Angelina Martin	Bull, June 12—F.C.
,, Maggie Wright	Fisher, May 22—F.C.
Hæmanthus Kalbreyeri	Veitch & Sons, April 24—B.C.
Hyacinth Grand Maitre	Veitch & Sons, Mar. 27—F.C.
,, King of the Blacks	Veitch & Sons, Mar. 27—F.C.
,, Queen of the Blues	Veitch & Sons, Mar. 27—F.C.
Iris (germanica) Darius	R. Parker, June 12—F.C
Ixora hybrida	B. S. Williams, April 24—B.C.
Juniperus virginiana alba spica	E. Holmes, June 12—B.C.
Kentia rupicola	(See Ptychosperma rupicola)
Lastrea aristata variegata	Veitch & Sons, April 24—B.C.
Macrozamia Mackenzii	Bull, June 12—B.C.
	Veitch & Sons, June 12—B.C.
Magnolia Halleana	Veitch & Sons, Mar. 27—B.C.
Microlepia hirta cristata	B. S. Williams, May 22—B.C.
	Veitch & Sons, Mar. 27—B.C.
Nephrodium extensum	B. S. Williams, June 12—B.C.
Odontoglossum cirrhosum Klabochorum	Veitch & Sons, March 27—B.C.
Pansy Fred Perkins	H. Hooper, April 24—F.C.
Pavonia Wiotii	Veitch & Sons, March 27—B.C.
Pelargonium Criterion	C. Turner, June 12—F.C.
,, Douglas	Rev. A. Mathews—June 12—F.C.
,, Henry	Rev. A. Mathews, June 12—F.C.
,, Illuminator	C. Turner, June 12—F.C.
,, Osmin	Rev. A. Mathews, June 12—F.C.
,, Rose Levesley	J. Levesley, June 12—F.C.
Picotee Ne Plus Ultra	C. Turner, July 10—F.C.
,, Lady Rosebery	C. Turner, July 10—F.C.
,, Sultana	C. Turner, July 10—F.C.
Pink Rosa Bonheur	C. Turner, July 10—F.C.
Polystichus Admiral Hornby	G. Smith, April 24—F.C.
,, Duke of Wellington	G Smith, March 27—F.C.
Platycerium Hillii	Veitch & Sons, May 22—B.C.
Ptychosperma rupicola	B. S. Williams, May 22—B.C.
	Veitch & Sons, May 22—B.C.
	Bull, June 12—B.C.
Rhipidopteris peltata gracillima	Veitch & Sons, April 24—B.C.
Rhododendron (jasm.) Crown Princess of Germany	Veitch & Sons, May 22—F.C.
Rose (H.P.) Boieldieu	W. Paul & Son, April 24—F.C.
,, (H.P.) Countess of Rosebery	W. Paul & Son, July 10—F.C.
,, (H.P.) Harrison Weir	C. Turner, July 10—F.C.
,, (H.P.) Mrs. Laxton	Paul & Son, April 24—F.C.
Sadleria cyatheoides	B. S. Williams, May 22—B.C.
Sarracenia Chelsoni	Veitch & Sons, June 12—B.C.
Saxifraga valdensis	E. G. Henderson, June 12—B.C.
Wallichia zebrina	B. S. Williams, April 24—B.C.
Xeronema Moorei	Veitch & Sons, June 12—B.C.
Zamia Lindeni	Bull, June 12—B.C.
Zygopetalum Sedeni	Veitch & Sons, June 12—B.C.

FRUIT-ROOMS.

A CORRESPONDENT having asked for a plan of a fruit-room best calculated to preserve fruits for as great a length of time as possible, we have thought well to reproduce from the *Journal of the Horticultural Society*, vol. vi., a valuable paper, with illustrations, by the late Mr. Robert Thompson, of Chiswick, on a fruit-room belonging to the late Josiah Moorman, Esq., of Clapham Road; and from the *Book of the Garden* a description, with an illustration, of the fruit-room at Dalkeith. As both sets of observations are published in books not now readily accessible to the general practitioner, yet are too valuable to be forgotten, we need make no apology for transferring them to our columns.

Mr. Thompson's description of Mr. Moorman's fruit-room states that the room was not originally constructed for a fruit-room, but, by a little adaptation Mr. Moorman succeeded in rendering it a most excellent one, as is proved by the prizes awarded for the productions exhibited from it, not in any one year, but repeatedly year after year.

"It is a partioned-off portion of a loft, which extends over a coach-house and stable, and is that part which is above the coach-house. It was originally fitted up for a harness-room, the walls, as is usual in such places, being lined with wood. The roof is slated, the range of buildings is detached, and faces the south.

"It will be observed that there is a cavity, *c*, between the boarding of the walls; this, I believe, is an important circumstance, and so is the wooden lining, because air and wood are known to be slow conductors of heat. The ceiling on the north side is double, and the floor is wood above a ceiling. We may therefore conclude that a uniformity of temperature in the interior of the room is insured to a considerable extent.

"There is a small stove, *d*, but it is seldom used, and never with the view of warming the air of the room, unless the temperature is actually below freezing. The fruit is, therefore, kept cool.

"The swing window, *e*, is occasionally a little opened, but it is at all times covered with a roller-blind, so that the fruit is kept in the dark. A little fire in the stove, air being freely admitted by the window at the same time on a dry day, is useful for speedily removing any damp which may arise from the fruit.

"The shelves, *a a*, have a layer of clean dry straw laid across them, and on this the fruit is placed singly.

"From a consideration of all the above details it may be inferred that if a fruit-room be built over a place where there is a free circulation of air, its roof double ceiled, the walls lined with wood, a cavity being left between these two, it will possess the essential properties of the one under consideration.

"More important principles necessary to attend to with regard to long keeping of fruit are uniformity of temperature, coolness, and darkness. If the temperature is uniform there can be little or no deposition of moisture on the surface of the fruit, but if the air of the room should be, say, 10° warmer than the fruit, then the relative coolness of the latter will cause a condensation of the moisture contained in the air in contact with the fruit, just as a cold glass becomes dewed when brought into a warm atmosphere. If the air is indeed very dry, then a proportionately greater difference of temperature is necessary to produce the above effect, but in the winter the hygrometer seldom requires to be cooled more than a few degrees before it indicates the deposition of moisture. Fruits with a smooth, glossy skin, in close contact with the cold substance beneath them, are those most profusely covered with moisture from the above cause. In russeted varieties, their dry, rough coats serve as a non-conductor of heat, and hence less moisture is deposited on them. When the air becomes cooler than the fruit a contrary action—that of evaporation—takes place, and the surface of the fruit becomes dry. But this wetting and drying prove very injurious; whilst its cause—alternations of temperature—must likewise effect the specific gravity of the juices of the fruit. Mr. Moorman's fruit is not exposed to such vicissitudes, for when the weather becomes frosty, it is several days before the thermometer in his fruit-room is affected as much as 1°.

"It may be remarked that in giving air a period of the day should be chosen when the thermometer outside indicates the same temperature as that in the room. No deposition of moisture can then take place in consequence. With regard to coolness, it is well known that this condition is favourable to the long keeping of fruit, for we act on the contrary when we wish to render any variety fit for use before its usual time. The fruit-room in question must be cooler on an average than if it had been on the ground, for the latter, under a building particularly, is warmer than the air in winter.

"Light accelerates the maturity and ultimate decay of fruit exposed to its influence. If the soundest specimens are picked and placed opposite a window, they soon become much inferior, compared with those from which the light is excluded, all other circumstances being the same. In Mr. Moorman's fruit-room the light is excluded by a blind even when air is given.

"Explanation of the letters in figs. 108, 109:—*a*, Shelves made with battens, 1½ inch wide and 1½ inch apart. *b*, Close boarding around the sides of the room. *c*, Air-space between the boards and the wall. The roof also has an air-space on the north side between the two plaster ceilings, as shown on the section, fig. 108. *d*, Stove. *e*, Circular window hung on pivots, and fitted with a roller-blind. *f*, Partitions of open work, similar to the shelves. *g*, Coach-house, under fruit-room."

The following remarks are those of Mr. McIntosh, taken from his *Book of the Garden*, vol. i., p. 493:—

"The fruit-room in the Horticultural Society's Garden, Chiswick, is a long narrow apartment, having a northern exposure; the floors are formed of concrete, to prevent rats or mice from getting in; a counter-like table occupies the centre, and the sides are fitted up with shelves of open trellis-work, on which the fruit is laid. Such, we may here observe, is the general form and arrangement of what may be called the better sorts of fruit-rooms. The fruit-room at Dalkeith is almost a *fac-simile* of this one, being furnished with shutters to the windows inside, and box ventilators, *a*, through the ceiling, and extended to an opening in the top of the back wall, as will be seen in fig. 111, p. 657. In this figure we have

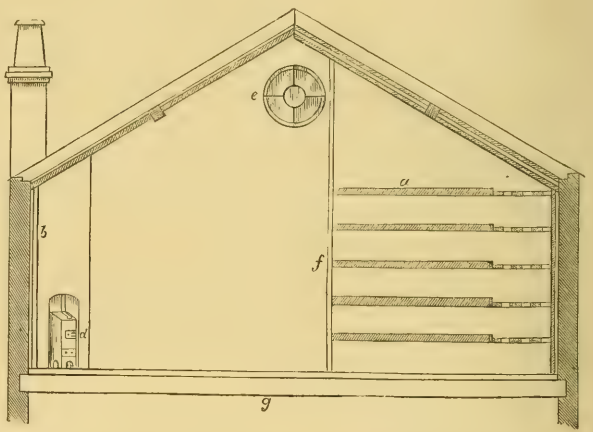


FIG 108.—LONGITUDINAL SECTION OF MR. J. MOORMAN'S FRUIT-ROOM.

shown what we consider to be the best kind of building for this purpose. The walls are built hollow, to resist external damp, heat, and cold. Ventilation is carried on by an opening in the ceiling, and the damp or foul air made to escape through the box *a*, and out at the top of the wall. Both ends of this ventilating tube are to be shut, when necessary, by letting down the flap-lids, *b b*, to which a line and pulleys are applied for the purpose. The ceiling is triple-coated with plaster, and packed with nogging above. The slates are laid in mortar, also to exclude air; and double thick sarking is laid under them, tongued and grooved. Thin canvas curtains, hung on rollers, *c c*, are let up and down in front of the shelves to exclude air and light when it may be necessary to open the door. The fruit is laid upon the side shelves, *d d*, on both sides, and the operation of sorting is carried on on the counter-like table, *e*, in the centre. Under this table are drawers, *f*, for the finer specimens of both Apples and Pears. The whole of this apartment is darkened by keeping the window-shutters shut; and as the decomposition of fruit appears not to be so much affected by candle light as solar light, the necessary operations are carried on by that light entirely. We have deemed it unnecessary to give a ground plan for this erection, as it will appear sufficiently obvious and clear that a vestibule or entrance apartment may be made, in which specimens of the various fruits may be exhibited, and where the necessary operations of packing and arranging the dessert may go on. The side shelves may be enclosed by having folding doors in front of them, and they may also be divided into compartments of from 6 to 10 feet in length. It will be found inconvenient to have a fruit cellar under such a room. It may, if of sufficient size, be divided into two apartments, one of which may be dedicated to the preservation of the later kinds, and therefore may be kept darkened and shut up, while the other department is set apart for cleaning, packing, exhibiting the fruit, and ripening it off for use."

THE EXTREME NORTH.*

MAY I be permitted to begin my letter with a report on the weather—yes or no? Gardeners, we in the vicinity of the Arctic circle, perhaps more than those of more southern countries, are too much dependent upon the weather to avoid commencing all our conversations by exchanging observations on this subject. I myself cannot escape this universal law, and I therefore record that the favourable weather of which I spoke in my former letter has continued with slight interruptions up to the present time (July 22), but we have had some days which certainly did not deserve the name of summer days. Thus during the night of June 16 the thermometer fell to the freezing point, whilst on an estate ten miles [German miles?] north-west of Lulea it fell 5°.4 Fahr. below the freezing point, so that Dahlias and other herbs and shrubs suffered considerably. But it is worthy of note that, being on a flying visit to the estate in question the day following the frost, I saw them mowing Fiorin-grass (Agrostis stolonifera), which was upwards of 20 inches high and in full bloom. Cold weather continued for about a week, or till June 22, when we had a beautiful growing rain. At midsummer time it was very warm (77° F., and more, in the shade), and plants grew with astonishing rapidity.

During such glorious weather as we experienced this summer, it is marvellously beautiful here, as we enjoy the never-setting sun uninterruptedly. We also see a number of foreigners, especially English, on their way to the mountain Avasaxa, whither they resort to view the midnight sun, a sight which they were fortunate enough to obtain this season. Visitors are, however, often disappointed who come hither to witness this grand natural phenomenon. Last year, for instance, we had cold weather and a cloudy sky at midsummer, and an Englishman who had come to see the midnight sun did not attain his object, resolved, so it is said, not to leave Avasaxa before he had seen what he wished to see. Now he may return satisfied before the winter sets in, which is certainly not mild here.

"In the autumn of 1876 (not 1877, as stated in my former letter) a horticultural union was founded, and this body has set apart a plot of ground nearly 5 acres in extent for experimental work. The greater part of this ground was overgrown with grass, more than

* Extracted from *Der Deutsche Garten*. For some particulars gleaned, from a previous letter, see p. 107 of the present volume.

half of which was poor shallow soil, and the whole area requires much labour before it will be suitable for successful gardening. Last year there was a failure of all crops, and starvation was only averted by the economy of the inhabitants in previous fruitful years. Just in the first year of the operation of the newly established horticultural society with its anything but favourable garden, it was so cold that the frozen soil in many spots on the north side of the rocks did not thaw during the whole summer. Nevertheless several garden plants succeeded tolerably well. Cucumbers in the open air on dung-beds produced little fruit, and we can only make sure of a crop under glass. Some seasons, however, very good crops might be secured in the open air. Of Carrots, Parsnips, short round salad Beet, Turnips, Kohl Rabi, Spinach, Peas, and white Dutch silver Onions, we had good crops last year. On the other hand, Beans, Cabbage, and Leeks were poor, and Celery and Radishes failed altogether.

Of the foregoing vegetables, Turnips, Spinach, and Sugar Peas are the most generally cultivated; the variety of Turnip, the universally known Swedish Turnip. We tried four sorts of ordinary Peas, namely, Knight's Marrow, Daniel O'Rourke, Laxton's Supreme, and Carter's First Crop. The last-named variety was decidedly the best, for seven weeks after sowing we were able to begin picking, whereas the others were later. Kohl Rabi is still comparatively unknown amongst us, but I hope to see it highly esteemed, because some planted experimentally gave good promise. Seven weeks after planting out they were as large as ordinary Turnips. White Dutch Onions, small, for pickling, are good almost every season, whilst we are obliged to treat the Red Dutch as an underground Onion, in which way it succeeds admirably. Shallots grow well, and are generally cultivated. *Aug. Engberg.*

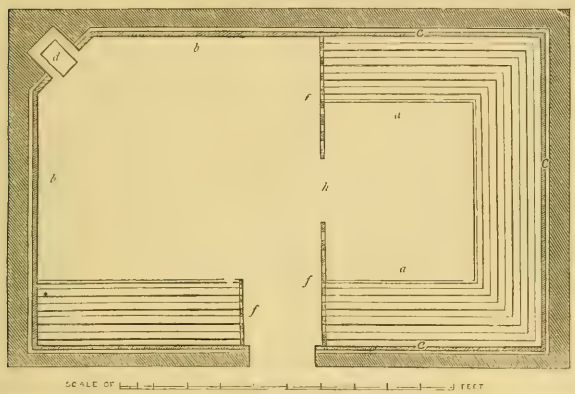


Fig. 109.—Plan of Mr. J. Moorman's fruit-room. (see p. 656.)

Florists' Flowers.

Dressing Carnations: False Scents.—Old florists will have observed, with more of regret than surprise, that it rarely seems that a point of practice or a question of principle can be a subject of discussion without more or less of false scenting being started and eagerly pursued by the originators or others, until profit and interest alike are lost to the onlookers.

"D. Deal" supplies us with a very marked illustration of this when writing in the *Journal of Horticulture* on the subject of dressing Carnations. He puts the question—"Suppose one person to grow the flowers, and another to dress them for exhibition, a 1st prize being awarded them, to whom should the prize go?" One would have supposed that a false scent so palpable could not have evoked a second thought; but no sooner had it been given to the wind than a "Staffordshire Grower" takes up the cry, and writes in the same journal that, "after all that has been written on the subject (dressing Carnations), there yet remains a point or two that requires clearing up, especially as regards the legitimacy of one fancier growing the flowers and another fancier dressing them. Advancing in his career of error, the "Staffordshire Grower" assumes that "dressing is all-powerful in winning prizes," citing a certain remark by Mr. Douglas as a proof of it, and goes on to say, that though he had been a grower of Carnations in a small way for many years and had exhibited and been fairly successful at local shows, he had not ventured to exhibit in London, nor was he likely to do so, as he felt he should not be exhibiting under equal conditions if the practice prevailed of allowing a grower to obtain the services of an expert dresser. But "for the purpose of judging of the quality of the bloom staged in London," the "Staffordshire Grower" made a journey to the exhibition of the National Carnation and Picotee Society, and he says, "Many blooms surprised me, especially by the high quality of their dressing; but I was equally astonished to find an overwhelmingly greater number of inferiorly dressed blooms." Entering "freely into conversation with those surrounding the boxes, 'Douglas first again,' was the general buzz," says the "Staffordshire Grower," and was responded to in one way, which fairly startled him, viz., "Yes, and always likely to be when he gets Ben Simonite to go to Loxford to dress his blooms for him." At the time the "Staffordshire Grower" thought this merely the "grumble of a disappointed exhibitor," but now he thinks it fair that all interested should know whether it was a "fact;" and after absolving Mr. Douglas from an unworthy purpose, if he did avail himself of the aid of Mr. Simonite, he adds, "But I, and others who think with me, do not think the practice right. If I grow and dress my own flowers as well as I can I feel I am seriously handicapped if I enter the lists against the best grower in England, who calls in the aid of perhaps the best dresser also before he places his flowers on the stand. If that is not a 'two-to-one' system of exhibiting I should like to know what is."

As I have said at the outset, florists of experience note expressions of this sort with more of regret than surprise, because of the known tendency of all things on earth to degeneracy; but I confess in this case my regret is the greater because of the transparent fallacies on which the "Staffordshire Grower" bases his complaint. First, the "Staffordshire Grower" assumes that "dressing is all-powerful in winning prizes," entirely overlooking the fact that if Mr. Douglas' success should be imputed to the aid given him by Mr. Simonite, it was most singular that Mr. Simonite's own flowers, dressed, of course, by himself, should have been the last only in their classes, whilst undoubtedly if I may be presumed to know anything of the subject, there were other exhibits very remarkable for the "quality" of their dressing, which also fell into inferior places. The truth simply is, good culture and good dressing must go together. They cannot be successful if separated, for no art can make the bad good, though art may make the good better.

Then as to the legitimacy of one grower aiding another in the preparation of his flowers for exhibition, a moment's reflection will surely show that if this be illegimate, it must be equally illegimate for the grower to obtain any aid in the cultivation of his pets—no hand save his must tie a bud, or weed or water—and so the argument is reduced to an absurdity. If the views of the "Staffordshire Grower" were sound, how could the magnificent exhibits of our large professional growers, set up by their accomplished assistants, be maintained? and what a scandalous invasion of principle every exhibition will be. But in this matter the "Staffordshire Grower's" idea of right is merely the chimera of a diseased imagination.

As to his feeling, that in coming to London he would not be exhibiting under equal conditions, I hope the "Staffordshire Grower" will put away the fear as unworthy, for if he believes that he cannot meet Mr. Douglas on equal terms, he will surely be able to hold a lance against some of the exhibitors of the "overwhelmingly greater number of the inferior, or inferiorly dressed flowers;" and he should remember that if his fears could legitimately keep him from a London show, a similar fear would equally legitimately deter a novice from entering the competition of those local shows where the "Staffordshire Grower" had been "fairly successful" and so competition would cease to exist.

I hope that this may clear away some of the mist

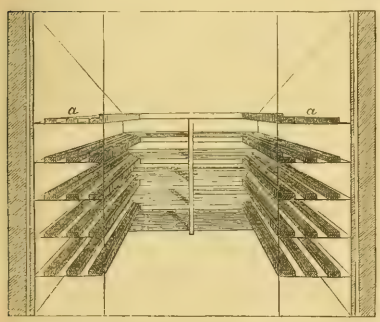


Fig. 110.—Interior view of Mr. J. Moorman's fruit-room.

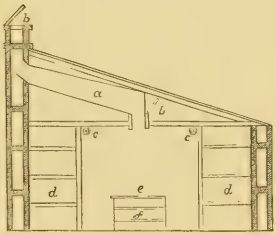


Fig. 111.—Section of the fruit-room at Dalkeith.

from the eyes of the "Staffordshire Grower," and that I shall have to place his name amongst the competitors at the next Southern exhibition of the National Carnation and Picotee Society. *E. S. Dodwell.*

HARDY STONECROPS: SEDUMS.

(*Continued from p. 626.*)

30. S. RUPESTRE, Linn., in part; Huds. Fl. Angl. 195; Baker, in Gard. Chron. 1877, viii., 307.

Glaucous, reddening with age and drought.

Leaves ½ inch long, in very numerous rows, linear, subulate, apiculate, incurved, convex below, flattish above, forming dense obconical rosettes, ¾—1 inch in diameter, at the ends of the sterile branches, which are clothed beneath with withered, ascending, scattered leaves.

Flowers numerous, barely ½ inch in diameter, 5—7-merous, clear yellow, in umbellate 3—5 forked ultimately hollow-topped cymes. Flower-stalk 8—12 inches.

Sepals ovate oblong obtuse, united at the base into a shallow cup.

Petals ovate oblong obtuse, concave, but not keeled.

Anthers yellow.

Carpels erect, glabrous.—Fl. July.

Western Europe.

Of this species, which is found in a wild state in certain places in Great Britain, there are many varieties, some of which are in cultivation under various names. The distinctions between these varieties and those of S. reflexum are often subtle; moreover, the varieties run one into the other. The consequence is, that the confusion in books is very great, and the synonymy correspondingly involved. To make the matter worse, even the figures add increased confusion, for what De Candolle figured as S. rupestre is S. reflexum, and so on. We must refer the reader to Mr. Baker's papers on this subject in this journal, 1877, viii., p. 307. In the main we follow his arrangement, but in the interest of cultivators we give greater prominence to the variety best known in gardens as S. elegans. This we prefer, for our present purpose, to keep as a distinct species under the name pruinatum, originally given to it by Brotero.

31. S. PRUINATUM, Brotero, Fl. Lusitan. ii., p. 209 (1804).

Glaucous, pruinose. Branches 6—8 inches, the thickness of whip-cord, trailing, ascending. Flowering stems erect, 1 foot.

Leaves in many rows, sessile, crowded, spreading, slightly incurved at the ends of the sterile shoots, where they form flattish rosettes, but not so markedly as in S. rupestre, glaucous, blue, often rose-pink at the tips, each about ¾ inch long, linear-oblanceolate, aristate, gibbous at the base.

Leaves of the flowering shoots less crowded, larger.

Cyme at first recurved, umbellate, many branched, flat-topped, ultimate pedicels longer than the flower.

Flowers bright yellow, ½ inch diameter, 4—8-merous.

Buds oblong-obtuse.

Calyx bell-shaped, sepals oblong-acute, half the length of the oblong-obtuse concave petals.

Anthers yellow.

Ovaries glabrous, much longer than the style.

Scales minute, greenish.—Fl. late summer.

Wilkomm and Lange, Prod. Fl. Hispan. ii., 135.

Syn. S. elegans, Lejeune, Fl. Spa. i., 205 (1811); Syme, English Botany, t. 806; S. elegans var. 1, majus, Syme, *l.c.*, Hook. Stud. Flor., 144; S. macranthum of gardens; S. rupestre, Baker, in G. Chron., Sept. 8, 1877, p. 307.

This is a free-growing form, very handsome in its serried ranks of glaucous rose-tinted leaves and its large golden flowers. It is larger in all its parts, and the sepals are more pointed than in S. rupestre.

The following varieties may be mentioned:—

Var. *Forsterianum*.—Glabrous, or slightly glaucous. Leaves on the barren shoots many ranked, forming terminal rosettes on the barren shoots, spreading, pale green, oblanceolate mucronulate, gibbous at the base.—S. Forsterianum, Smith, Engl. Bot., t. 1802.

Syn. S. rupestre, sub-species Forsterianum, Syme, Eng. Bot., ed. 3, vol. iv., p. 59, t. 807; S. Forsteri, Haworth; (?) S. aureum, Wirtgen, Fl. Pr. Rhein-Prov., p. 134; Rosbach, in Bull. Soc. Roy. Belg., t. 8 (1869), p. 350.

This differs from the type in its smaller size, light green, not glaucous leaves, which are moreover not in so many rows as in the type.

We have seen a plant in gardens under the name of S. aureum, but not in flower. It appeared to be a small form of reflexum, but the true S. aureum of Wirtgen is, according to the description, a form of S. rupestre.

The plant commonly grown in gardens as Forsterianum is not correctly named.

Var. *minus*.—Glaucous, smaller in all its parts than the type; leaves oblanceolate, mucronate, in rosettes.—S. rupestre var. minus, Syme, Engl. Bot., vol. iv., p. 59; Hook. Stud. Flor., p. 144.

This is the form found at St. Vincent's Rocks, near Bristol, and in Wales. It is grown in some gardens as Forsterianum, but more generally as rupestre. The terminal rosettes are open in moist weather, but close when the plant is subjected to drought. Both forms differ from S. reflexum in their bluish green, flatter leaves, arranged in more numerous vertical ranks.

32. S. REFLEXUM, Linn., Sp. Pl., ed. 2, p. 618, partly.

Glabrous, scarcely glaucous (except in var. albescens).

Stems trailing. Flower-stems erect, 8—10 inches.

Leaves in six or seven rows, crowded on the barren stems into a conical mass, but not forming so marked a rosette as in the typical rupestre; ½—¾ inch, linear subulate, terete, gibbous at the base, spreading or abruptly decurved.

Inflorescence decurved or erect before flowering.

Cymes umbellate, leafy, many-flowered, many-branched, with a flower in each fork.

Buds oblong, pointed.

Flowers 4—8-merous, ¾ inch in diameter.

Calyx cup-shaped. Sepals oblong-lanceolate, half the length of the linear petals.

Stamens linear-subulate, hairy at the base. Anthers yellow.

Carpels green, erect; scales whitish.—Fl. summer.

Smith, Engl. Bot., t. 695; Syme, in Eng. Bot., 3d ed., t. 804; Hook. Stud. Flor., p. 144; Baker, Gard. Chron. October 13, 1877, p. 461.

Syn. S. collinum, Willd., Baker, *l.c.*; S. virens, Willd., Haworth, Baker, *l.c.*

This is not an uncommon plant in hedgerows, on walls, and on old thatched roofs in various parts of England. It varies considerably in size and glaucousness, and in the fact that the inflorescence is sometimes decurved before flowering, sometimes erect (as in S. virens). It approximates to some forms of S. rupestre, but its leaves are usually not in so many ranks, not so markedly in rosettes, are more terete, and not so flattened and oblanceolate as in most forms of rupestre or pruinatum.

The following varieties commonly grown in gardens require notice. The forms called in gardens collinum and virens we cannot sufficiently separate from the type.

Var. *cristatum*.—Like the type, but the stems are fasciated so as to form a crest, as in the case of the Cockscomb. It is grown in gardens under the names of fasciatum and monstrosum crassicaule. It is the S. portlandicum of Lobel's *Icones*.

Var. *albescens*, Haworth, Revis. Succ., p. 28; glaucous, leaves rarely in rosettes. Flowers ½ inch diameter, often 6-merous. Buds oblong. Sepals acute.

Syn. S. glaucum, Smith, Engl. Bot., t. 2477, non Waldst. et Kit.; S. reflexum, var. albescens, Syme, in Engl. Bot., ed. 3, t. 805; Hook. Stud. Flor., p. 144; Baker, in Gard. Chron., October 13, 1877.

This form occurs wild in some parts of England, and we have had it from various Continental gardens under the name of neglectum (not of Tenore), and septangulare. We have also native specimens from Oran, given by the late G. Munby, and from Morocco by Mr. Geo. Maw.

Var. *septangulare*.—Very like albescens, but the leaves are scarcely glaucous, usually too they are somewhat thicker and in seven distinct rows, often spirally wound round the stem.—S. septangulare, Haworth, Synops. Pl. Succ. 1812, p. 116. This has not been found wild in Britain, but it is noted as having been in cultivation before 1795.

This latter is the plant, in our experience, which is most frequently grown in gardens as S. Forsterianum. Under the name Sartorianum (not of Boissier), also, we received it from Prof. Parlatore. It is not so free flowering as some of the other forms.

Var. *virescens*, Willd.; Haworth, ex Baker, Gard. Chron., Oct. 13, 1877, p. 463; differs from albescens in its pale sulphur-yellow flowers.

Var. *minus*, Haworth, ex Baker, *l.c.*—The smallest variety of all, the S. reflexum of Fl. Dan., t. 113.

Mr. Baker (*l.c.*) keeps up as distinct varieties collinum, virens, albescens, minus, recurvatum, septangulare, virescens, and cristatum. We have seen specimens under these names in British and Continental gardens, but we have been unable to distinguish them any further than we have done above. Had we been dealing with wild specimens, doubtless we might have followed Mr. Baker more closely.

(*To be continued.*)

Garden Operations.

FLOWER GARDEN, ETC.

Store plants in pits and frames will now require a considerable amount of attention; newly potted Pelargoniums and other plants from the flower-beds are at this time showing a large amount of decaying foliage and mouldy tips of shoots, the result of a dull, sluggish, and damp atmosphere. All this must be removed and the mouldy points cut back to solid wood, and the whole stock thoroughly cleaned and rearranged. At every favourable opportunity a free ventilation should be applied, and even in very dull and heavy weather if a little heat can be turned on, and ventilation with it, it will greatly assist to keep the damp and tendency to fog-off in check. This also points to the great care which should be exercised with regard to watering the plants. It is imperative that they should have sufficient to retain vitality, but for the next two or three months certainly no more, as the great object is to keep them dormant; but here again discrimination is necessary, because these kinds of plants vary in their power of retaining the vital principle in the absence of moisture. Pelargoniums of the scarlet and zonal section, for example, will retain their vitality without water longer than any other section of bedding plants kept in store. It is as well to bear this in mind in the depth of winter, and not to be alarmed in very bad weather if they become very dry. And again, pots which are full of roots, whether of store cuttings or single plants, will dispose of double the amount of water without injury that should be given to either stores or plants which are behindhand in the rooting process. Late struck cuttings and late potted plants will come under this denomination at present, and should have the warmest end of the pits to assist the rooting process as far as possible without forcing growth. To further this end air must be given at all times when the temperature of the atmosphere is above freezing-point and quiet, as sharp cutting winds are especially to be avoided. The great object to be kept in view at this season of the year is to secure a sturdy growth for spring propagation, and any excess of heat or moisture will produce a weak and spindly growth, necessitating a considerably greater amount of attention to atmospherical conditions than would be required in hardier grown plants.

The leaves on deciduous trees appear to be more than usually persistent this season, for notwithstanding the violent gales, frosts, and heavy rains, there is yet a great amount of foliage remaining, and this, of course, will retard all the operations connected with a thorough clearing-up of the lawns and pleasure grounds as before directed, though leaves may have been constantly collected and stored for future use. In the meantime, and until the leaves are all down, attention may be given to a variety of matters which do not depend on falling leaves, such as thinning out and tying in all creepers and such-like plants on conservatory walls and trellises, so as to place them in the best position possible to avoid injury from frost. Protection to the tender sorts, such as Ceanothus, for example, need not be applied until severe weather occurs, but the materials should be kept in readiness, and should be of such a substance as would be easily removable in changes of temperature in order to avoid coddling, for if such protection is kept constantly on, the trees are rendered tender; and on the advent of fine weather in the spring, when neatness is looked for and the coverings dispensed with, they become far more susceptible of injury from spring frosts; such tender varieties should also be well covered with mulching for a considerable distance about the roots and collar of the plants, as the roots may very reasonably be supposed to be quite as liable to injury from frost as the branches, and should be equally protected. This reminds me to observe that those who are fortunate enough to possess fine-established plants of Chamærops Fortunei and Chamærops humilis will do well to provide temporary protection, as they have never yet in this country been tried with a temperature of 32° below freezing point, which occurred here not many years back, and killed Pinus insignis of 50 feet high, and many other plants of sorts that may be called of doubtful hardiness, both amongst shrubs and herbaceous plants in borders; such things, therefore, as Gunnera scabra, Acanthus grandiflora, Tritoma grandis, intermedia and Uvaria, and Phormium tenax, with the like, will require protection about the roots and collars of the plants, and sifted coal-ashes in the form of broad-based cones is generally ready to hand and quite effective for the purpose.

The mowing of the lawns being now finished for the season the machines should be at once dispatched to the makers to be put into complete order for another season; waiting for a machine to become disabled is not good economy, as it generally happens at a time when it can be least dispensed with, and an annual, or at least biennial, overhaul becomes indispensable. In the meantime, to keep up as far as possible an appearance of neatness in the grass, the roller should be kept

constantly in use in mild weather, but avoid doing so if there is the least amount of frost on it, as that would turn the grass black. *John Cox, Redleaf.*

FRUIT HOUSES.

Orchard-house.—Those who are anxious for very early fruit may with forcing have the early Peaches ripe about the end of April, but I do not advise pot culture when this result is desired. That pot trees can be forced there is no doubt, but there is greater certainty in forcing trees that are planted out than there is in pot trees. It is well to make comparisons between the different systems of culture, and in doing this it is necessary to consider whether the owner values his trees merely for the amount of fruit they will produce, or for the higher and more ennobling delight of studying the growth of the trees, the development of bud into blossom and tender green leaf, the growth and ripening of the fruit, and the numerous details of the practical culture of the trees. Many amateurs take a delight in doing this, and even performing some of the work with their own hands: for such pot culture furnishes a rich vein of intelligent relaxation. Training the planted out trees to a trellis overhead is fatiguing work to arms and eyes not accustomed to such labour, and it is better to leave it to those who have a special training in practical gardening. Very few varieties can be grown in a given space if the trees are planted out and trained to a trellis. Three times as many can be grown of pyramid or bush trees in pots. Now it is just in this that the practical gardener and the amateur who makes a fancy of his trees, differ. In nine cases out of ten the gardener is required to produce as much fruit as he can out of a given space, and the amount of funds at his disposal are usually circumscribed. My advice to such is, plant the trees out in a confined border entirely under control, and train the shoots near the glass. There are some who have done this who started with pot-trees. Where trees are trained to a trellis they must now be entirely loosened from it. The trellis, wood and glass work should be well washed, and the trellis and wood work painted if possible. Wash all the wood of the trees with the mixture recommended two weeks ago, and then tie it to the trellis when everything is quite dry. Skilful culture consists in arranging the bearing wood so that it is evenly distributed. The young bearing wood should be trained during the growing season to cover the naked stems, and it ought to be tied there now. If any pruning is requisite, remember previous cautions—when shortening last year's wood to cut at a triple bud. The border ought certainly to be inside, and if the roots have not the chance to travel out as well, much judgment will be necessary as to watering. At no time should the soil be parched; over-dryness causes the small fibres to die altogether; judicious watering preserves them, and in mild weather—even at midwinter—they are making growth. I have watched this, as careful observation of the buds shows a corresponding swelling on their part. Our pot-trees are frequently plunged in cocoa-nut fibre refuse out-of-doors until January, and on exposing the pots at that time I have found the surface soil quite permeated with active rootlets—the soil at the same time has been quite wet, showing conclusively that this does not injure the roots. In very dry soil the roots do not grow so. Our own orchard-house is now gay with Crysanthemums, the large-flowered varieties of the Chinese and Japanese sections occupy the centre of the large span-roofed house; these have been grown to obtain good quality in the flowers: the sides of the house are furnished with trained specimens—each of them carries 100 or 200 blooms, the trees are out-of-doors, plunged in the cocoa-nut fibre alluded to. It may be right to observe here that the trees placed outside receive no dressing of soap or Gishurst, they seldom require it. It is very interesting to note the difference in the appearance of the young wood thickly studded with blossom-buds. *J. Douglas, Loxford Hall.*

Orange-house.—The fruit is now nearly ripe—the Tangierine would be quite ripe, as this variety ripens much earlier than the Maltese Blood and St. Michael's, but none of our trees of this variety are bearing fruit this season. It is well that the trees should have a rest for a season after bearing continuously, as many of them do. We have had trees in a Pine-house temperature summer and winter, loaded with fruit all the year round, and for several years in succession, and one tree now loaded with fruit has been in the same pot for three seasons. It has been surface-dressed with rich compost at intervals; the leaves are a dark green, and the fruit this year will be quite as large as usual. Those growing Oranges for dessert ought not to omit the Prata or Silver Orange. The fruit is large and handsome, with a pale yellow or rather lemon skin, and the flavour is even richer than the St. Michael's. The house where the fruit is swelling is now kept at a temperature of about 60° to 65° at night, and the atmosphere rather drier. Less water will be required at the roots, as too much water with a moist atmosphere will certainly cause the fruit to crack, when it is spoiled of course. A few trees may be now introduced from the reserve in the cool houses; they will soon start into growth, and the trees will be in blossom about the first or second week in January. If it is convenient to do so, the temperature of the house into which they are introduced should not exceed 55° at night for the first two or three weeks. *J. Douglas.*

Strawberries in Pots.—Where Strawberry forcing is carried on to any extent steps will now need to be taken to prepare and arrange batches of plants to succeed one another in supplying fruit according to the requirements of families next spring. As time is an important matter in early forcing operations it may be well to observe that under ordinary moderate forcing such varieties as Black Prince started at the end of the month will give ripe fruit by the end of next February—Vicomtesse Héricart de Thury started at the same time will give a succession, and another batch of the latter variety, started about the end of December, will yield splendid fruits from the third to the last week in March, whilst the first week in January will be early enough to start plants for giving fruits early in April. These dates are based on practical calculation and a close observance of the behaviour of those varieties for several years. The plants intended to be introduced to the various forcing houses now being set to work will require to be examined first, as to a clear water run, and next as to top-dressing and the removal of any decayed leaves. For top-dressing nothing equals a coating of horse droppings rubbed fine through the hands and watered through a rose for the first time after being top-dressed. See that the crowns are set on the shelves in the same way they have been grown throughout the summer, and ring the pots with a knife or something harder than the knuckles to test the condition of the soil in the pots, as the hard leathery leaves will not indicate distress till the action of the roots has suffered a check. Autumn Strawberries are still abundant and of good quality, and with a little management I see no reason why we should not have fine Strawberries "all the year round." No water should be spilt in the house except on the mornings of bright days, and a healthy circulation of fresh air should be kept up on every possible opportunity. Under these conditions the Strawberry-house will be perfumed with the rich aroma from the glistening ripe fruits. *W. Hinds, Otterspool.*

Peaches and Nectarines.—In a preceding Calendar I directed attention to the importance of getting the early house properly cleansed and the trees tied in ready for starting by the middle of this month where early Peaches are wanted by the end of May. To insure success the house should now be closed, but unless the weather is very severe no artificial heat need be applied until the buds show signs of moving, when very gentle firing for a few hours in the early part of the day may be indulged in, with ample syringing of the trees, paths, and walls, at least twice a day. If the roots are confined to the interior of the house, the borders should be carefully watered with tepid water until every part of the soil is properly moistened, when a good ridge of thoroughly sweetened stable manure and Oak-leaves may be introduced with considerable advantage to the trees, and as a means of producing a moist genial atmosphere greatly superior to that obtained from hot-water pipes. Indeed so long as the weather continues mild this treatment will be found sufficiently exciting for the first three weeks after closing. Give air on all favourable occasions as a means of sweetening the atmosphere, and allow the temperature to range from 40° to 45° at night, and 50° to 55° by day, with a rise of 5° to 10° more from sun-heat. Get all Peaches and Nectarines under glass pruned without delay and take advantage of wet days for cleaning paint, lime-washing walls, and thoroughly clearing the trees of scale and the remains of last season's dressing by careful washing with warm soap-water. In any houses that require constant syringing up to the time of ripening I wash the trees twice with a solution of Gishurst Compound, 4 oz. to the gallon, in preference to painting in the usual mixture of lime, loam, &c., as the latter often encloses the larvæ of insects that have escaped the first washing, and its subsequent removal by syringing frequently disfigures the fruit. Protect outside borders with Fern or litter, and in the case of early houses place lights or shutters over all for throwing off snow and heavy rain. *W. Coleman.*

Figs.—The house containing the pot trees, from which ripe fruit is to be gathered early in May, should now be closed for forcing. Apply tepid water to the roots at frequent intervals until every portion of the soil is well moistened. Introduce thoroughly sweetened fermenting Oak leaves, loosely at first, round and about the pots, to produce gentle excitement of the roots, as well as to economise fire-heat, for although the Fig is less impatient than the Peach, a soft, humid atmosphere obtained by fermenting materials is infinitely superior to fire-heat. Syringe the trees and walls every morning, and again about 2 P.M., unless the weather is very wet, dark, and cold, when the afternoon syringing may be dispensed with. Commence forcing with a minimum temperature of 50°, and 5° to 10° more by day when the weather is mild; but at this season, when the external temperature is so fluctuating, and forcing is dead against Nature, a lower range may be found advisable, as much irreparable mischief may be brought about by undue haste. Keep the glass clean and free from condensed moisture by the admission of a little air when the weather is mild, and close the ventilators when the heat from solar influences begins to decline. The house containing trees in internal borders should be ready for shutting up early in December, when the rules laid down for the management of the pot trees will apply. Let the borders be examined, and if they are found very dry a slight mulching, preparatory to watering, will greatly facilitate the operation. Use water a few degrees warmer than the temperature of the house, and apply it at short intervals, until the whole mass of soil is properly moistened. Shake out and repot young plants intended for forcing next season, in order that they may have time to rest after they have matured their growth. Brown Turkey, Negro Largo, and White Marseilles are excellent kinds for early work. *W. Coleman.*

PLANT HOUSES.

Orchids.—In the Cattleya-house just now it will be noticed that several things, more especially Lælia purpurata, Cattleya lobata, and Cattleya Warneri, are each and all in various stages of active growth; the two former, in fact, will have been growing since the early autumn, and therefore will be now well advanced, whilst the latter, as is invariably the case with this species, are only just starting into growth. These will continue growing all the winter through, and if carefully managed may all be in bloom at the same time, though naturally C. Warneri will flower a little earlier than L. purpurata. Grown in the division set apart for the Cattleyas, as well, too, as a mixed group of other things, such as Miltonias, some of the Oncidiums, Trichopilias, &c., it will not do to subject plants in a growing condition to so low a temperature as may with safety be given to the same or similar plants when they have ceased growth, and have entered on a period of comparative rest; since some are thus growing, and the principal bloom expected to appear on the growths now forming, a growing course of treatment, both as regards water at the roots and also the temperature of the house, must individually be followed up; then, as any finish their growths, the soil must be kept somewhat drier, by which means we assist in the maturing and ripening of the bulbs, as well also as the setting of the flower-buds for the spring and summer displays. As the blooms on the Pleiones fade away, and are taken off, it will be found on inspection that the part enclosing the flower is the tips of the young leaves of the new growths, the bloom itself being produced on the top of the bulb, whilst in a very small and embryotic state. At the base of these young shoots a quantity of new roots will be very quickly formed, which will supply the growths with nourishment and support as it advances and increases in vigour during the coming season. If it is found that the soil is sour, they must be potted now. Make them up in shallow well-drained pans, using sphagnum moss, peat, silver sand, and some fine crocks or charcoal, well mixed together; keep the centre bulbs well raised, gradually sloping down to the edge. When thus made up, they should be grown with the Cattleyas. At first give but a small supply of water, but as the roots enter the soil much more must be used, and after the turn of the dull days a syringing overhead occasionally may be safely given. If in the growing of this genus a thought is entertained of its native habitats, the reasonableness of the treatment recommended will be the more apparent, since the Pleiones are almost invariably met with in Nepal and Assam growing on the moss-covered rocks or on trees that are grown over with moss, and intermixed with a deal of decaying vegetable fibre. Dendrobium chrysanthum and Cambridgeanum are now just starting into growth; Dendrochilum glumaceum is also now showing its new growths, reddish brown, as they are when first they appear close down upon the soil. These should now be moved from the cool house in which they have been for the last two months, and brought back into the East India house, and watered carefully as they require it. See that no check is allowed, they will then come on rapidly, As the bloom-buds of such hings as D. nobile, Wardianum, crassinode, &c., show themselves, a little water must be given, for during the last few weeks little or none has been given. As soon as the formation and perfecting of the blooms takes place, a heavy and as it were continuous strain is put upon the plant, and unless this is assisted by a careful regard to moisture at the roots just when requisite, the perfect development of the blooms cannot be expected to take place. D. Ainsworthii may be treated in all respects similar to the old nobile, and when better known will be found to be a most desirable acquisition. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 23, 1878

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Nov. 25.—Sale of Dutch Bulbs, at Stevens' Rooms.

TUESDAY, Nov. 26.—Sale of Nursery Stock, at Mr. R. Parker's, Tooting. Sale of Lilies, Tree Ferns, Orchids, &c., at Stevens' Rooms.

WEDNESDAY, Nov. 27.—Sale of Nursery Stock, at Leigham Court Road, Streatham Hill. Sale of Roses, Camellias, Shrubs, Bulbs, &c.

FRIDAY, Nov. 29.—Sale of Nursery Stock, at Uxbridge Road, Acton. Sale of Scientific Instruments, &c., at Stevens' Rooms.

SATURDAY, Nov. 30.—Cheetham Hill Horticultural Society's Show. Sale of Plants from Ghent, Standard Roses, &c., at Stevens' Rooms.

WHILE the horticulturists and botanists were deliberating over the objects presented to them at South Kensington on Tuesday last, death removed from the scene of his labours no less renowned a man than JAMES M'NAB of Edinburgh.

No reader of the gardening journals, and specially no visitor to the Botanic Garden at Edinburgh, is likely to be unfamiliar with the name of this distinguished horticulturist. The Botanic Garden at Edinburgh, of which he has had the charge since the death of his father in 1848, is an evidence that the right man was in the right place. The collections generally, those of Coniferæ in particular, and the alpine and rock plants even more specially, bear witness to the fact. M'NAB had a difficult task before him—he had to preserve a large and varied collection of plants for scientific as well as for ornamental purposes, and he had to supply the wants of the most exacting Professor of Botany in the three kingdoms—exacting, that is, by virtue of the fact that specimens to illustrate the chief natural orders and medicinal plants are wanted year by year for some 300 students. Add to this the care and supervision required to manage a large garden to which the public has access daily from morning till night, and it will be admitted that M'NAB'S task was neither light nor easy. He was well schooled by his father, who held the post before him for well-nigh forty years; he gained experience by his journey to Canada and the United States in 1834, and by his management of the Caledonian Horticultural Society's garden—then distinct, but now merged into the Royal Botanic Garden. Latterly, too, a large area has been added to the garden for an arboretum, on the planting and supervision of which M'NAB'S advice was constantly sought.

It is not only as a cultivator that M'NAB achieved eminence, his pen was rarely idle: the Canadian flora, various points in landscape gardening, in the culture of Conifers, in the relations of plants to climate, were treated by him again and again, often in a manner to secure at once the assent given of right to a master of his profession, always in a manner to suggest and provoke inquiry. Many of his drawings of noteworthy plants grown in the garden were reproduced in SWEET'S *Flower Garden* and other publications. The general improvement of the garden, the feats he accomplished in the way of transplanting trees, the new Palm-house, the extensive rockeries, begun in 1860 and now the largest and richest in the kingdom, with compartments for 6000 plants, all these called forth M'NAB'S powers, and they afford prominent evidence of his zeal and skill.

A man who has made such a mark as this on the garden entrusted to his care, and who has inscribed himself so indelibly in the literature of his art, is not likely soon to be forgotten. The portrait, which we republish from an earlier volume, is characteristic of the man, and indicates the thought and determination by which his work was marked. We have little to add to the details of his career sketched in outline in our columns in 1871, p. 1033, and in the special supplement devoted to the Edinburgh Botanical Garden, which we published in September, 1875. Mr. M'NAB was born in 1810, at Richmond, in Surrey, but may be said to have passed his whole life, with but slight interval, in Edinburgh, and indeed in the Botanic Garden, in which he was first apprentice, then journeyman, then foreman, and ultimately Curator. He was one of the founders of the Edinburgh Botanical Society, becoming in 1872 its President. His Presidential Address, on the supposed change of climate in Scotland and its effects on vegetation, gave rise to much discussion in our columns and elsewhere at the time. It is only left to us to add the last tribute of respect for a man of marked individuality, who in the discharge of his duty greatly enhanced the value and reputation of a large public establishment, and secured for himself the admiration and respect which duties so worthily executed never fail to excite. Mr. M'NAB leaves a widow, five daughters, and a son, the distinguished Professor of Botany in the Royal College of Science, Dublin.

—— DISEASE IN VINES.—Some time since we were asked to examine some Muscat Grapes which had gone off in the most provoking manner. Just as ripening is nearly finished the stalk of the bunch shows first a little discoloration, then the bark swells and becomes more or less corky and dried up; circulation is stopped, and the berries, all but ripe, commence to shrivel. The foliage is all that could be desired, the wood beautiful, the border in good condition, the roots healthy. The spot occurs, so far as we have seen, nowhere else but on the stalk of the bunch, just above the base. Other Grapes in the same range at Penrhyn Castle are not affected, but only the Muscat. Many of our best gardeners who have seen the Vines testify to the excellent way in which they have been grown, but profess themselves foiled when they attempt to account for the disease. We were no more fortunate, we could find nothing to indicate the cause of the malady. Mr. BERKELEY, who was kind enough also to examine the bunches, writes as follows:—

"There seems to be no limit to the diseases to which Vines are subject, whether from fungi, insects, or constitutional maladies, eliminating all those fungi which use the Vine as a matrix without materially affecting the growth. One of the most curious which we have seen, and, if widely spread, one of the most destructive, has lately been sent to us from Penrhyn Castle. There was no opportunity of examining it microscopically when received (October 22), but though the berries are for the most part completely decayed, the essential parts which seem to give the first appearance of disease, which extends ultimately to the bunches, are in perfect condition. It is not to be denied that there is a little black fungus belonging to the spurious genus Sphæropsis, with brown subelliptic spores, with one side straight, about 1-1500th of an inch in length, but there is not the slightest reason to suppose that this has anything to do with the malady. The main stems of the bunch as well as the corresponding petiole of the leaf first show a little swelling of the cuticle, which is more or less detached and beneath this the tissue undoubtedly exhibits threads of a fungoid mycelium, which are rather thick. These are not, however, very abundant, but as the cuticle is not broken they do not appear to be after-growths. This appearance gradually ascends, the cuticle becomes dark, and at length bursts, exposing the decomposed bark, which does not seem to be accompanied by any mycelium. A few linear crystals appear amongst the cells. The disease now extends rapidly, cutting off all supply of sap, and the bunch presents the appearance of exaggerated shanking. It is worthy of remark that a section of the wood below the knot from which the affected bunch springs shows decided traces of disease, but it does not appear that this alteration in the tissue runs up to the node. The base of the fruit-stem where it originates has the tissue of the bark much decomposed. The bud in the axil of the leaf is, like the base of the fruit-stalk, more or less affected. The disease appears to be undescribed, unless it is a form of DUNAL'S Anthracnose—at least we have found no certain account of it. Unfortunately, we are unable to assign a cause, much less a remedy." *M. J. B.*

We may add that Mr. COLE, of Feltham, a successful market grower, has experienced the same thing, but only in connection with large-sized bunches of the Gros Colmar, not with Muscats or any other variety.

—— THE PHYLLOXERA.—M. ALPHONSE LAVALLÉE has recently suggested that, as the American Vines have been found not fully to realise the hopes held out concerning them, an attempt should be made to graft the Vines on some of the Asiatic species, which would be more likely to be free from the attacks of the Grape louse. M. LAVALLÉE has not, as it appears, tried the experiment, but from the fact that particular insects often attack particular species of plants and leave untouched nearly allied species, he thinks it possible that the Asiatic Vines may be exempt from the plague of the Grape louse. M. LAVALLÉE mentions as worthy of a trial Vitis biternata, Cissus orientalis, V. amurensis, V. flexuosa, V. heterophylla and the var. humulifolia, V. ficifolia, V. inconstans, the Ampelopsis tricuspidata of SIEBOLD, and the A. Veitchii of British gardens; Ampelopsis serjanicefolia, A. aconitifolia, A. cordata, A. bipinnata and Cissus japonica; the latter having strictly herbaceous stems would perhaps form a bad stock, nevertheless as Tree Pæonies are grafted on to herbaceous varieties a similar experiment might succeed with the Vine. The experiments recommended by M. LAVALLÉE are undoubtedly worthy of trial, though we should be far from sanguine as to the results. It must be understood that we have taken M. LAVALLÉE'S names as we find them. We observe that he speaks of Vitis antarctica as a species only known in herbaria: should M. LAVALLÉE visit England, he will find the species not uncommon in our conservatories.

—— THE BOTANIC GARDEN AT CHELSEA.—Dr. SEMPLE has recently published a revised edition of FIELD'S *Memoirs of the Botanic Garden at Chelsea*, continued to the present time. The work is one of so much interest that we shall take an early opportunity of alluding to its contents in a fuller manner than our space will at present permit.

—— CANADA.—The handbook and official catalogue of the Canadian section of the Paris Exhibition, prepared by the Executive Commissioner, Mr. T. C. KEEFER, is a valuable production, as giving in small compass a trustworthy account of the physical features, constitution, and commercial statistics of this vast dominion. The area is nearly as large as that of all Europe, the climate, though severe in winter, suffices in summer to ripen Wheat and Maize, Peaches, and Melons. Horticulturists will not soon forget the magnificent Apples sent from Nova Scotia some years since to the Horticultural Society. The work is illustrated by two large maps.

—— SELF-RECORDING BALANCE.—M. REDIER, of Paris, according to the *Scientific American*, has constructed a balance with a platform so arranged as to move freely according to the varying weights placed upon it; and to trace upon a recording sheet the fluctuations so occasioned. Thus a plant in full growth gains or loses in weight according to the conditions of moisture, temperature, &c., and these variations are duly registered by the machine in question. It is of course equally well adapted to record the fluctuations in weight of an animal, of a burning candle, &c. It is clear that such an instrument will be of the highest value in physiological investigations, and M. GRANDEAU has already utilised it in his experiments upon the evaporation and transpiration that takes place from plants and the soil.

—— LIBERIAN COFFEE IN CEYLON.—Messrs. A. M. & J. FERGUSON reprint from the columns of the *Ceylon Observer* a series of letters relating to the introduction and progress of the Liberian Coffee in Ceylon. Due credit is given to Mr. BULL for his spirit and enterprise in the matter, while the exertions of Dr. (now Sir JOSEPH) HOOKER, are thus spoken of:—"The eminent man at the head of Kew Gardens, to whom the world owes so much, saw to it that the functions of his establishment in raising and distributing this new product were fulfilled with . . industry, intelligence, and celerity." We make this quotation because some people seem to look at Kew simply as a recreation-ground for the public, or as a resource for the botanist, and ignore, or rather are

ignorant of, the services rendered to the commerce of the world. The little book before us contains indeed much of the history of the Liberian Coffee, as it was originally published in detached fragments in the newspaper. No attempt seems to have been made to connect and condense these fragments into a consistent whole. The book, in fact, suffers from the want of competent editing. So far as we see, no reference is made to what has been said at the Horticultural Society with reference to this plant and to the leaf-disease, nor to the numerous notes and figures pages, February 23, 1878. This year, however, it did not do so, but has bloomed freely. It is 20 feet in circumference and 6 feet through. This must be a fine specimen.

—— Products of Cyprus.—Notwithstanding our recent articles on the vegetation of Cyprus, we may perhaps be allowed to revert again to the subject for the purpose of giving some notes from a recently issued report of the British Consul on the trade and commerce of the island. The report refers, of course, per quarter, and from 17*s.* to £1 12*s.* for Barley per quarter. Cotton produced a fair crop both as regards quantity and quality, the average price being about 4*d.* per lb. The Cotton plant, which is chiefly grown from American seed, is very carefully and attentively cultivated. Experiments, it seems, have been made with the view of introducing the Bamia Cotton, but it is thought that the dry nature of the soil is not adapted to its growth. In Madder roots (Rubia tinctorum) the produce amounted only to about 250 tons; owing to the now general substitu-



The Late James M'Nab.

that have from time to time been given in our own columns.

—— Colletia cruciata.—The articles and illustrations we gave of this singular plant have, it appears, called renewed attention to it. It seems to be flowering this autumn with unusual freedom, a small plant in our own garden being literally covered with snow-white fragrant flowers. Several correspondents have called attention also to the blooming of the plant, and one of them—Mr. Hall, of Kenley—informs us that his plant grew well, and each year threw out long slender shoots like those of C. spinosa, as figured in our

to the year 1877, and the produce of the land showed favourably in some important articles, and unfavourably in others. With regard to grain crops a very fair proportion of land was put under cultivation, the yield being much less than in the previous year. Wheat showed 800,000 kilos. in 1877 against 1,600,000 in 1876, while Barley showed 1,500,000 kilos. against 2,400,000 in the previous year. Of this a little was exported in the early part of the harvest, and when it was thought that the crops would succeed better than they eventually did; as the season, however, advanced it was found necessary to import rather than to export, and prices of grain increased from £1 10*s.* to £2 15*s.* for Wheat

tion of Alizarine for Madder it is probable that the root will not be cultivated much longer, seeing that the expense of growing it exceeds the actual selling price. The produce of Olive oil was estimated at 250,000 okes, against 200,000 okes in 1876. The oil-producing districts are Keryina, Kythrea, Larnaca, and Limassol. As a rule, the Olive tree only produces abundantly once in five years. The conditions required for a good yield are cold and wet weather, when the quantity produced may reach 400,000 and even 500,000 okes. It is very rarely exported, but cheap soap is made from it in such large quantities as to supply Mersine and other parts of Caramania. The demand for Carobs

or Locust Beans (Ceratonia siliqua) is constantly increasing, so that the peasants are giving serious attention to the profitable cultivation of the tree, which has been hitherto somewhat neglected. A very large yield was afforded last year. In the early part of the season they realised £3 5*s.* per ton free on board, and the last purchases were made at £4 per ton. The pods are most abundantly produced when there is a severe winter. The cultivation of Tobacco is a monopoly and is farmed out, there being eight depôts in the island, four of which are in Nicosia, two in Larnaca, and two in Limassol, opened in 1874. The lowest quality is principally sold in Cyprus. The quantity disposed of in a year is about 100,000 okes, from which the Government netts 1,300,000 piastres. One-tenth of the above quantity of 100,000 okes is exported to Syria and Caramania in sealed packets. The Tobacco used in Cyprus is brought from Volo and Salonica, where it pays an *ad valorem* duty of 3 piastres per oke. Cyprus formerly produced about 20,000 okes of Tobacco, but now, on account of the vexations to which the grower is subjected, the quantity grown does not exceed 5000 okes. One of the principal industries of Cyprus is the tanning of leather. At Nicosia the tanneries are said to produce from 1500 to 2000 bales of leather per annum.

—— NEW AMERICAN POPLARS.—One of our correspondents has been good enough to hand us the following extract from a private letter he has recently received, from Professor SARGENT, of Brookline.

"What of this fastigiate Silver Poplar they talk of in the *Gardeners' Chronicle*? Have you seen it? And this reminds me, that as you go in for street trees you should try two very fine Poplars, which grow in the West. They are Populus Fremontii of Western Nevada, and Populus trichocarpa of the same region and of California. The former is by far the handsomest Poplar I have ever seen. It is very much planted as a street tree in Leeson City and other towns in that part of Nevada, and both should be introduced into England, if they are not there already, which I doubt. In Salt Lake City the Mormons generally plant Populus angustifolia, which is also a good street tree, but I think less ornamental than either of the others. Populus tricuspidata is the common Poplar of the Yo-semite Valley, where it makes a very handsome tree. All these Poplars grow so very fast that more might be done with them than people seem to think."

—— SUGAR AND ORANGE CULTURE IN NEW SOUTH WALES.—In a special supplement to the *Sydney Morning Herald*, published expressly for distribution at the Paris Exhibition and devoted entirely to a description of the colony of New South Wales and its products, sugar and Oranges are specially mentioned as illustrations of the rapid progress made by two important introduced plants. The cultivation of the Sugar-cane as an industry was introduced into the colony only about ten or twelve years ago, and has now grown into proportions of considerable magnitude. In 1867 we are told that only 116 acres of land throughout the colony were under Sugar-cane cultivation, while in the year ending March 31 last the area of land devoted to sugar was 6755 acres, of which 3524 were productive, the remainder being young plants. The principal seats of sugar cultivation are on the banks of the Tweed, Clarence, Richmond, Macleay, and Manning Rivers, but Sugar-cane has also been grown successfully on the Hunter River, although on a small scale. On the before-mentioned rivers there are several mills where the cane is crushed and sugar made. During last year there were no less than seventy sugar mills at work in various parts of the colony. The weight of cane crushed was over 1,150,000 cwt., which produced about 94,000 cwt. of sugar besides a large quantity of molasses. The value of the sugar thus produced has been estimated at about £150,000. Besides the cane, Sorghum and Beetroot have also been cultivated in the colony for the purpose of making sugar. These sources, however, are much less certain and profitable than the cane, and are consequently but little grown now, except where they are used for feeding cattle. Regarding the Orange, which now grows luxuriantly in the open air in and around Sydney and along the banks of the coastal rivers, we are reminded that so far back as 1790 Oranges and Lemons were in a very thriving state. The first large Orange plantations formed were in and near the town of Paramatta, and in the sheltered nooks and valleys along the Paramatta River. Other plantations have since gradually extended to the Hunter and other rivers of the North. Altogether about thirty varieties of Oranges and Lemons are grown in the Australian orchards. This branch of culture is specially remunerative in the neighbourhood of Sydney, and as the fruits do not grow well in Victoria, Tasmania, or New Zealand, there has long been a considerable trade between Sydney and these colonies. The value of this export trade is stated to amount fully to between £40,000 to £50,000 a year. Many of the trees are stated to have attained an immense size, and their produce is often enormous. As many as a thousand dozens of Oranges have, it is said, been gathered from a single tree in one season, and individual fruits of excellent flavour have been found to weigh as much as 25 oz. each.

—— TEREDO-PROOF TREES.—It is stated in the *Proceedings of the Californian Academy of Science* that the writer, Dr. KELLOGG, knows of only two trees which are perfectly proof against the Teredo navalis or pile-borer of tidal water. These are the Palmetto, Chamærops Palmetto, and the Australian Eucalyptus rostrata. The Teredo will attack the wood of Eucalyptus globulus, and many other species.

—— SWEETENING SOIL.—This is a favourite expression among some floricultural writers, and by it is meant that any potting soil should be thoroughly aërated before being used, spreading it out and turning it over for the wind and sun to play upon it. Good potting soil is of great importance, and a "fibry" loam means one in which vegetable fibre is plentifully displayed. Some loams are destitute of fibre, and they are of a close and adhesive character generally. The finest potting loam comes from the top spit of a pasture where the grass grows luxuriantly, and this should be pared off to the depth at which the fibres are found, the "said fibres being the very life and soul of your compost," as an old florist once remarked; the presence of fibre indicates a fitness for the purposes of vegetation. Some of the florists of a generation ago used to regard the presence of the "golden wireworm" as showing that the loam might be used immediately with success. Such material needs but little sweetening in the ordinary acceptation of the term; it can be placed in a heap for the fibre to rot and mellow: it can scarcely become sour "taken as it is at no greater depth than the sun of many summers and the frost of many winters has probably penetrated." By laying up a stock of fibry clods in this way for the winter, the fibre decays and becomes vegetable mould, and wireworm losing their natural food betake themselves to fresh pasture. It is best to lay it in a narrow ridge, and frequently turn it during winter and early spring to amalgamate the ingredients, and not so much to sweeten it as to retain its sweetness. In such a soil with about one-third of its bulk of rotten cowdung, and opened with a little sharp grit, Carnations, Picotees, and many plants will do well. The London growers of plants for market adopt a good and effectual plan of sweetening the decayed manure they use for potting purposes. Advantage is taken of a fine drying day to put a heap of manure in the middle of a yard, and to allow fowls to scratch and prick it about. It becomes in this way reduced to a fine mould, and all insects of an injurious character are destroyed by the feathered tribe: the manure is then removed to the potting shed for use.

—— FERULA FŒTIDISSIMA.—Dr. REGEL describes and figures a new species of Ferula, F. fœtidissima, in the *Gartenflora*, plate 944, which he believes may be the plant which produces the true asafœtida. FLÜCKIGER and HANBURY state (*Pharmacographia*, p. 280) that there are two umbelliferous plants now generally cited as the source of this drug; but although they are both capable of affording a gum-resin of strong alliaceous odour, it has not been proved that either of them furnishes the asafœtida of commerce. The plants in question are Narthex Asafœtida, FALCONER, syn. Ferula Narthex, BOISSIER, and Ferula (Scorodosma) fœtida, BUNGE. Turkestan, the home of REGEL's new species, is peculiarly rich in resiniferous Umbelliferæ, and it is possible that asafœtida, like gum-tragacanth, is the product of more than one species of plant. There is a small group of the genus Ferula, distinguished from the majority of the species by their leaves being divided into lanceolate or oval instead of linear or filiform segments. These are the species which yield the gum-resin in question. LINNÆUS' description of his Ferula Asafœtida, as far as it goes, though it is very imperfect, would pass for either of them, and Dr. REGEL thinks it possible that his F. fœtidissima may be the plant LINNÆUS had in view. REGEL's grounds for assuming his plant to be the source of the true asafœtida are not absolutely conclusive, but there seems to be little doubt that it is one, if not the only one, which furnishes this drug. REGEL enumerates eight species of Ferula belonging to what he calls the Asafœtida group, of which his F. fœtidissima is most productive of gum-resin, and the gum-resin of this species has the most powerful odour. Indeed the odour is so penetrating that the dissection of the fruit under a microscope gives one headache. This plant was collected in the district of Kokand, along the Sarawschan River, at an elevation of 3000 to 8000 feet. It differs from all the others of the Asafœtida group in the characters of the fruit, which are those of the section Euferula of BOISSIER, which has one to three distinct oil-canals in the dorsal furrows of the fruit and six on the face of each half of the fruit.

—— WINTER BEDDING.—The dreariness of the denuded flower-beds in winter is one of the objections most often raised to the bedding-out system. But this is by no means a necessary eyesore. By the use of some of the dwarf evergreens, coniferous and others, a charming effect may be produced in the dull season. One of the best and earliest illustrations of this we saw in the nursery of Messrs. METHVEN at Edinburgh some years ago, and one of the best to be seen at the present time near London is at the Crystal Palace, where Mr. THOMSON has introduced them with great effect. The exhibition of plants suitable for this purpose at South Kensington by Messrs. VEITCH, at the last two meetings, excited so much interest that we are glad to be able to give a list of some of the principal shrubs employed on the occasion; and may note that most of our leading nurserymen are turning their attention to such subjects as a speciality:—

Aucuba japonica, several vars.
Andromeda floribunda
,, Catesbæi
Aralia Sieboldi
Azalea amœna
Azara microphylla
Buxus, several varieties
Cotoneaster microphylla
Daphne Cneorum major
Elæagnus pungens variegata
,, japonica maculata
Euonymus angustifolius
,, japonicus, and varieties
,, radicans
Eurya latifolia variegata
Osmanthus ilicifolius, and varieties
Mahonia Aquifolium
,, japonica
Berberis Hookeri
Hollies, various
Ilex crenata
Kalmia latifolia
Skimmia japonica
Ligustrum elegantissimum
,, tricolor
,, Japonicum
,, coriaceum
Ledum thymifolium
Viburnum Tinus
Veronica Traversii
,, angustifolia
Vinca elegantissima
Gaultheria Shallon
Vaccinium Vitis Idæa
Rhododendron hirsutum
Rhododendron ovatum
,, hybrids
Ivies, various
Hypericum calycinum
Menziesia polifolia atropurpurea
,, ,, erecta alba
Erica herbacea mediterranea var. Mackayana
,, vulgaris alba
,, ,, Alportii
,, vagans carnea
Diplopappus chrysophyllus
Daphne elegantissima
Abies pumila
Cupressus Lawsoniana, several varieties
,, macrocarpa
Cryptomeria elegans
Cupressus thyoides variegata
,, nutkaensis
,, ,, variegata
Juniperus japonica aurea
,, ,, aurea variegata
,, excelsa stricta
,, Sabina variegata
Retinospora, various species
Taxus baccata aurea
,, ,, elegantissima
Biota orientalis aurea
,, ,, semperaurescens
Thujopsis dolabrata
Yucca recurva
Thuja Lobbii
Bambusa aurea
,, Metake

—— THE GROUNDSEL TREE (BACCHARIS HALIMIFOLIA) is the best known of a large genus of shrubby and subfruticose Compositæ found only in a wild state in the New World. There are about 200 species, and some of them are small trees. All are easily distinguished from their allies by their producing only flowers of one sex on the same bush. The female plant of B. halimifolia is the more handsome of the two, the silvery pappus and the pretty purplish red involucral bracts making an elegant combination, particularly conspicuous at the present time. The branches are angular, the leaves oblong cuneate and coarsely toothed. It is quite hardy in this country, grows from 6 feet to 12 feet high. It does remarkably well near the sea, and inland makes a good habited bush. Some good examples may be seen in the Royal Gardens, Kew.

—— PANDANUS LINNEI.—The flowering of Pandanads is by no means a very common occurrence in this country, and therefore we have the more pleasure in recording the fact that a fine specimen of a plant called Pandanus Linnei is expected to be in bloom shortly at the Crystal Palace. The plant, under Mr. THOMSON's charge, has already thrown out three large cone-like clusters, proving it to be the female plant.

—— "Loco" Poisons of Colorado and California.—In the sixth volume of the *Proceedings of the Californian Academy of Sciences* Dr. A. Kellogg gives a short account of these vegetable poisons, which have wrought great havoc in the herds of horses, cattle, and sheep in these States. Thousands of animals have been lost by plant poisoning. Astragalus Menziesii, of A. Gray, is one of them, bearing the popular names of Rattle-weed, Pompous Pea, Pop Peap, &c., and it is generally spread over the State. It appears that horses and cattle will shun it so long as the pasturage remains good, but when other herbage is scarce, and hunger impels them, they will eat it; and in course of time they become excessively fond of this plant, which produces a kind of intoxication. "After eating it, horses become intoxicated, stagger, and are unsteady in all their movements; act strangely and stupidly, losing their good 'horse sense' or common brute sagacity; in short, acting like a fool; hence the Mexican name *loco*." The animals gradually get thinner and die, and death often supervenes suddenly. What is most remarkable, Dr. Kellogg says, with this and the Colorado Loco (Astragalus Lamberti), is the permanence of the impression, often lasting many months, or even for years, half demented, until at length they die. The allied Tephrosia, or Devil's Shoestring of the South, although it stupefies and intoxicates, yet the impression soon wears off. We are often told that man alone indulges in the debasing vice of drunkenness, but here appears to be a clear case against animals—at least American animals. Dr. Kellogg says the brutes get to like the plant more and more, being apparently as much infatuated as the drunkard for his bottle.

—— Institution of Surveyors.—The next meeting will be held on Monday evening, November 25, when a discussion will take place on the paper read last session by Mr. R. W. P. Birch on "The Use of Sewage by Farmers." The chair to be taken at 8 o'clock.

—— Profitable Cultivation of Waste Lands.—Various attempts have been made in this and other countries to utilise the spare land on the railways, and in many places where the soil is suitable vegetable growing has proved very profitable. Of course vegetable gardening is impracticable on the sides of embankments and cuttings, where the principal object is to secure solidity by binding the soil together. This can only be effected by leaving the roots of the plants undisturbed. Where the slope of an embankment or of a cutting is very gentle, the soil may be partly broken up without detriment to the permanent way, and extraordinary crops of Vegetable Marrows, Cucumbers, &c., may be secured in this way. Squares of ground, on sunny slopes, tilled and well manured, yield highly remunerative crops of the vegetables named, providing always that they are liberally supplied with water. Fruit trees succeed well on embankments where the soil is fertile, but this is rarely the case. The *Jahresbericht des Fränkischen Gartenbauvereins* gives some particulars respecting the fruit, crops obtained on the Wurtemberg railways, from which it appears that the undertaking in competent hands has proved very successful. The available space on the State railway which traverses Wurtemberg is computed at about 35,000 acres. The average value of a crop of Lucern or Sainfoin in the most fertile parts is only about 14*s.* per acre, but fruit trees with grass between them yield upwards of 7 per cent. on the outlay. Suitable kinds of Apple, Pear, Plum, &c., in the form of pyramidal, dwarf, and cordon trees are planted, and frequently associated with Currant bushes and other small fruits. In the warmer parts of the country Vines are grown. These trees it is stated hold the soil together and fulfil all the requirements of the railway engineer; and as the crops are guarded by the railway servants they are secure from thieves.

—— Royal Botanic Garden, Calcutta.—The following extracts are taken from the "Resolution" on the report of the above garden for the year 1876, and dated August 10, 1877:—

"The present report again shows that the experiments which have been tried for some years past in cultivating in Calcutta certain special plants have not been attended with success. It is useless to attempt to grow in Calcutta plants to which the climate is entirely unsuitable, and all that can be done is to endeavour to import, propagate, and raise young stock for distribution to suitable localities. Dr. King is endeavouring, by means of artificial propagation, to grow a sufficient stock of the Para rubber and Ceara rubber plants of South America, with a view of their being ultimately formed into small plantations in places possessing a suitable climate, and where efficient supervision can be secured. The cultivation of Vanilla must be abandoned, as it is now a decided failure. The Ipecacuanha also cannot be successfully grown in Calcutta as a crop, owing to the low night temperature of the cold season proving too severe for it; but a stock of young plants is kept at the Cinchona plantation for distribution. Rheea does not thrive in Calcutta so well as in the drier climate of Saharunpore; but the Government of India, having again offered a prize for the invention of a machine for cleaning Rheea fibre, Dr. King has very properly put a few acres of ground under the plant to meet applications for green stems. The Eucalyptus is not suited to the climate of Lower Bengal. The Carob, which, if successfully cultivated, would afford excellent fodder for cattle, has been found to fail; but another fodder plant, the Pithecolobium Saman of Peru, seems to be well suited to the climate and soil of Bengal. Some of the trees have during the year given seed: the pod is quite as sweet as that of the Carob, and is abundantly produced, while as a rapid grower the tree is unrivalled.

"Dr. King has paid particular attention to the important experiment of growing the various kinds of paper fibres which have from time to time been suggested to him; but the result of his experience is not very hopeful. The Baobab does not yield an annual crop, and cannot be grown with sufficient cheapness to pay. The proposals of Mr. Routledge, who has devoted much attention to the subject, about coppicing Bamboo, and extracting from its immature shoots a stock fit for the manufacture of paper, have been put to a practical test during the last two or three years. Although the experiment has been conducted under the most favourable circumstances, the twigs produced by each clump of Bamboos are not the soft succulent shoots which are required for Mr. Routledge's process, and, on the whole, Dr. King thinks that the proposed industry is not likely to succeed in India. Specimens of four common Indian plants were sent to the India Office, in order that their value as paper fibres should be ascertained. The plants were tested by Mr. Routledge, who found that they could be employed in making paper, but the cost of converting them into stock and of transport to Europe would doubtless be so high as to prevent any attempt to use them for the manufacture of paper from being commercially successful. As suggested in the Government Resolution on the report for 1876-77, Dr. King has procured specimens of the grass which grows on the Orissa and Chittagong coasts, and hopes to report the result of his inquiries in future reports. His attention is again drawn to the grass which grows on the banks of the Adjai and Damoodah, and the Lieutenant-Governor will be glad if he will inquire whether the grass cannot be utilised as a paper fibre.

"The attention of the Inspector-General of Gaols will also be directed to the use of these grasses as paper-making material, and experiments may be carried on by him in some of the gaols in which paper-making has been adopted as a regular gaol industry."

—— Golden Queen Holly.—This Holly, which usually bears male flowers only, has, we are told, in certain cases this season produced berries also. Whether the flowers which produced those berries were hermaphrodite or pistilliferous only, we do not know. Was it the true variety?

—— The Weather.—The report for the week ending November 18, issued by the Meteorological Office, states that the weather was tolerably fine in the western districts, but extremely unsettled in the east and south-east, with frequent and heavy showers of snow, hail, and rain. Thunder and lightning reported on some occasions. Temperature very uniform, *maxima* reaching 50° on one or two occasions only, and below 40° at some of the eastern and central English stations on the 12th. Night frosts experienced in most places during the early part of the week, the sheltered thermometer falling as low as 26° at many of the stations. The amount of daily range extremely small at the eastern and south-eastern stations on the 16th and 17th. The rainfall was variable. Very much more than the mean in England north-east and east, several tenths in excess over England south and south-west, but considerably short of the mean in Scotland west, England north-west, and Ireland south. Heavy snowstorm in the northern parts of England early in the week. The wind generally was northerly (north-easterly to north-westerly), and strong in force. Heavy northerly gales locally in the north and west on the 12th; a severe north-easterly gale in the east of England on the 15th; and a fresh to strong northerly gale at the same time in the north-west. Hard northerly gales at Scilly nearly all the week.

Home Correspondence.

Colonial Museum for London, and Proposed International Horticultural Exhibition for 1880.—I see by the *Morning Post* of this date that steps are being taken by the Council of the Royal Horticultural Society, with a view of allocating as a site for the Colonial Museum the situation I had the honour of suggesting in my memorial to His Royal Highness the Prince of Wales, and Her Majesty's Commissioners for 1851. I am extremely pleased to see that the Council have so quickly responded, and that they are anxious the proposed horticultural exhibition of 1880 should be held. I for one shall be delighted if it should prove to be the means of stemming the torrent of adverse fortune which for many years past has enveloped the Royal Horticultural Society and destroyed its usefulness in the advancement of horticultural science. It would also be a source of much gratification to all connected with horticulture and a joy for every one who loves flowers, if it should prove to be the means of the gardens at South Kensington remaining in the hands and under the control of the Council of the Royal Horticultural Society, and a great boon to people who live near the gardens: it will also secure one more open spot for recreation. It is therefore earnestly to be hoped that horticulturists and floriculturists of every degree will join hand in hand and all work with a will to carry out what will prove to be a grand national scheme. Now is a great opportunity for developing a monster International Horticultural Exhibition. Let all horticulturists unite and feel that they have only one common interest at heart, viz., the advancement and maintenance of horticulture as a science worthy of our country. Let us prove to the colonies how worthy we are of their esteem, and to all subjects of foreign nations how delighted we shall be to see and entertain them. Horticulturists have been treated with every respect and kindness in connection with many of the great horticultural exhibitions on the Continent; let us for once show our brothers who are fighting the peaceful battles of horticulture on the Continent and elsewhere how much we have appreciated their kindness, and how gladly we will welcome them to our shores in 1880. We shall secure the patronage and most valuable support of our noble Prince, which will be in itself a tower of strength, as all will admit who have seen to what a successful issue the Great Universal Exhibition of Paris has been brought. It is not only horticulture and agriculture that would benefit by the suggested amalgamation; it would be the means of cultivating and improving the minds of millions of Her Majesty's subjects, and thereby of instructing their minds in the peaceful arts and sciences which can only be conducive to their future happiness and welfare, and which must tend in a very great degree to advance almost every branch of industry, for all mankind more or less borrow their ideas from Nature, whether it be from the simple flower, the mighty gushing torrent, or the lofty mountain which supply materials for the manufacture of that great civilising power, machinery, whether applied to the mighty steam-engine or the more delicate mechanism of the smallest timepiece in the world. *John Wills, Onslow Crescent, South Kensington, Nov.* 13. [We fear Mr. Wills is mistaken in supposing that any action has been taken by the Royal Horticultural Society in this matter. Eds.]

Nec Quærere nec spernere Honorem.—Do you consider that "good form" in a raiser of Potatos, Messrs. Editors? At least allow me to defend myself against your rather sharp foot-note lecture on p. 509, and to say of myself that, having been an exhibitor of the esculent consecutively for nearly thirty years, I never staged a plate, or a collection of Potatos, in bad form, according to my lights; so, at any rate, I have taken care to exhibit. What good form may mean I must decidedly differ from, if it means the scrubbing and rubbing of collections almost to the deprivation of their skins—honours going to the biggest! As to the manner in which the Royal Horticultural Society dealt with me as an exhibitor and contributor I have never complained, though I never received my last cards for certificates of seedling Potatos gained at the Chiswick trials. Since then I have not sought for nor received honour there, nor till I read Mr. Dean's paragraph was I aware that my seedling, Woodstock Kidney, had been grown at Chiswick. I sold the stock of it last year to the Messrs. Sutton, and a knew, by my own experience, that it was a variety they would bring no discredit to the firm. I should have

acted more prominently in placing it before the judges this season, nevertheless, had not the Messrs. Sutton, according to my expressed wish, deputed its trial and certification to Mr. McKinlay. I did, however, exhibit it in "form," with some other of my new seedlings, at the Crystal Palace show, unnamed. I have raised so many varieties of Potatos that I really do not care whether my name takes precedence with them or no. I see Mr. Douglas is complaining by proxy about International Kidney, at p. 601. I did not like my bantling at all in Oxfordshire soil, nor did I intend to send it out to the public, but one who was wiser than me exhibited it at Stamford, and gained first honours, so of course after that I could not help myself. Then another friend advised me to have it called the International Kidney in honour of the first meeting of the Potato Society of that ilk just then about to take place. "Well," I replied, "it is a large variety and handsome, and after all it is as good and it has got a good deal more stamina and sticking-to-the-ribs in it than any of the American sorts now so popular, so let it go out under the name, and the Yankees won't then have the big things all to themselves." Now from my soil here, which I don't think differs greatly from the Essex soil about Loxford, the International comes very good as a general purpose Potato. It is a large cropper, not too late, and it resists the disease quite as well as the Messrs. Sutton's Magnum Bonum and Red-skinned Flourball, or Mr. Bennett's — I beg pardon, Mr. Turner's—Schoolmaster; and if Mr. Douglas happen to have any cottage friends who boil their bacon and Potatos in the same pot—say International Kidney in one net and Schoolmaster in another —and the good wives have to wait for some quarter of an hour after the esculents are done for the coming of their husbands to dinner, the Internationals will then be found intact, and the Schoolmaster dissolved. As Mr. Douglas has undertaken to single out Schoolmasters against Internationals I will also say that the latter is certainly equal to the former in regard to flavour, for Schoolmaster is in that respect almost *nil* when cooked with the greatest care, though it is the whitest in flesh. My summing up of the qualities, taken without prejudice, is, there is six of one and half-a-dozen of the other. I grow Schoolmaster myself, and it comes as good as it possibly can do off my soil. Well, yes, some of our new kinds of Potatos are as good as the old Fortyfold, excellent though it was, but in regard to that it is no use repining for ever; if it could regain its constitution it is so subject to the disease that it could never be depended upon. I have long known all the other sorts that Mr. Douglas mentions; they suit the cockney palate, and probably will do for a long time to come, but are they more to be depended upon for a crop than Champion? They are all of them better than the latter at any rate. If Mr. Douglas could alight upon the old Freebearer, I would advise him by all means to try it upon his soil. It is a purple-blotched large deep-eyed variety, but upon his ground it would refine itself down, and in appearance and taste be analogous to the old Fortyfold. I saw it very often in different parts of Devonshire, some years since, sold under the *alias* Fortyfold. *Robert Fenn, Cottage Farm, Sulhamstead Abbots, Reading, November 13.*

Coffee Culture in Ceylon: a Disclaimer.—It was with considerable surprise that I read in the *Gardeners' Chronicle* of November 2 a communication from Mr. J. Alexander, enclosing a "speech and resolution that were given by the Chairman of the Ceylon Chamber of Commerce," for the purpose of contradicting "statements published by the Rev. Mr. Abbay" and myself "regarding Hemileia vastatrix killing the Coffee in Ceylon, and stating that "we [*i.e.* the Ceylon planters] have ceased to cultivate Coffee." I conceive that it is no part of the duty of scientific men in this country, and much less of any one holding an official position, to publish unauthentic statements calculated to unfairly injure colonial enterprise. You will permit me, therefore, to state—as my name appears to have been used in a wholly unwarranted manner—that neither am I in possession of any facts leading me to believe that Hemileia kills the Coffee tree, and that Coffee cultivation has ceased in Ceylon, nor have I published anything upon the subject. *W. T. Thiselton Dyer, Royal Gardens, Kew.*

Eucalyptus globulus. — It is certainly very amusing to read the articles that have appeared from time to time respecting this in the daily papers, as by the writers' showing, fevers and other ills to which flesh is heir, were to be banished, and towns and cities made ornamental and enjoyable by the shade it affords. Unfortunately, however, its hardiness does not admit of its doing this for us, as nowhere has it yet been found to endure more than 10° or 15° of frost at the most, and that only where it can be sufficiently exposed to get its growth thoroughly ripened. I have tried it on several occasions, and have had it killed each time, although the main stem of one of the finest was bound up with hay bands to try and preserve it in that way. If, instead of thinking to allay fever emanations by planting the abovenamed, those who have waterlogged soil would only drain it properly and plant Alder or other water-loving trees that absorb much moisture from the earth for their support, they would find the wood produced very profitable and the atmosphere altogether more healthy, especially if the trees were arranged in groups, so as to let in plenty of sunlight and air around them. That the Eucalyptus is a very valuable tree for a warm, moist climate there cannot be the least doubt. If its qualities are anything like what they are said to be for stopping the spread of malaria, according to some accounts they are much needed in the island we have lately acquired, and which is looked on by many as a white elephant that it would be better for the nation to be rid of. Be this as it may, there seems some danger of its being covered with Eucalyptus globulus instead of hardy sons of toil and industry, who alone will make it of much value other than for warlike purposes. *J. S.*

Patent Manures.—With the winter season comes also a renewal of the "Battle of the Manures"—a fight that occurs each successive year, but which by the introduction of new kinds or combinations bids fair to increase in intensity, to the confusion of would-be purchasers. What a list of patent manures may now be compiled, the larger portion of which are recommended for garden uses! Guano, superphosphates, kainit, Amies' manure, peat charcoal, Standen's manure, bone-dust, buffalo-horn shavings, Clay's manure, and goodness knows how many others, are presented in the most winning aspects, all more or less truthful, all the ingredients more or less valuable, but almost all having to be taken on trust, except where *bonâ fide* and impartial testimonials have put beyond doubt the benefits to certain and various plants which will follow the proper application of some of these stimulants. It need hardly be said, however, that capable and impartial analysis of all these compounds would be of great service to the gardening community. All cannot have the same constituents, all cannot be equally adapted to furnish food for all kinds of plants, and it is in this special sense that authoritative analysis would be of value. The manure that will furnish luxuriant foliage may not always be the most productive of flowers or fruits; the substances that will produce the finest flowers may not be suitable for roots; and in relation to all kinds of kitchen garden crops there can be little doubt that the manures that will produce the finest and most nutritive Potatos, Carrots, or Onions, may not be as successful in producing the best Peas, Beans, or Cauliflowers. But, further than this, the purchaser may wish to be assured, not only that the manure is adapted for the purpose for which he designs it, but also that it is a genuine manurial compound, made up of the elements of nutrition, and not of substances that are simple adulteration. If horticulturists had their own special analyst, just as the farmers have, no doubt they would find in such an official a great protection from imposture, whilst the honest manufacturer of manures would have in the publication of a good analysis everything to gain. *X.*

Vine Culture: Watering.—In No. 250, p. 467, of the *Gardeners' Chronicle*, Mr. Coleman recommends watering Vine borders equivalent to a rainfall of 4 feet through the growing season. Will Mr. Coleman kindly inform the readers of the *Gardeners' Chronicle* if he really means 4 feet to be given in about four months, or should it be 4 inches? Will he also say what should be the situation and constituents of the border to receive such copious supplies of water? By so doing Mr. Coleman would confer a great boon on hundreds of Grape growers who read his directions from time to time with much interest, knowing him to be a champion Grape grower. *J. C.* [In reply to your correspondent, "J. C.," whose courteous and complimentary letter I have just read, permit me to say every line I have written on Grape culture is a faithful record of my own practice, with what result I leave your readers, who have seen my Grapes at exhibitions, or hanging on the Vines, to determine. If "J. C." has carefully followed my directions he will have gathered that I recommend the formation of inside borders upon the following principles. Clean deep drainage of broken bricks with free outlet for water. Compost, good turfy loam with liberal admixture of old lime rubble, crushed bones, and charred garden refuse; depth 2 feet to 2 feet 6 inches, width according to space at disposal. Manure to be used as a top-dressing or mulching only. Borders made in this way, in reality an extension of the pot system, soon get filled with healthy feeders, and the great secret of turning them to full account depends upon the quantity of tepid liquid-manure that passes through them. If allowed to get too dry, the roots at once strike down in search of moisture, spider and mildew attack the Vines, and Grapes shank and fail to colour. On the other hand, if freely watered the roots remain near the surface, revelling in the rich supplies of soluble food left in the compost. The filtered water passes away, and as there is no fear of stagnation, growth of fruit and foliage is vigorous and healthy. To lay down precise rules for watering would in all probability mislead, as much depends upon the constituents of the soil, position, elevation, and mode of ventilation. I can, however, safely assert that my inside borders receive quite 4 feet of tepid water in the course of the season—not in four months, as I should be very sorry to allow them to lie high and dry for the remaining eight, were it even possible to start a house and complete the growth in that short period. It is just possible that the 4 inches to which "J. C." refers might conduce to this rapid process of maturation; but like a house of Melons to which the late Dr. Lindley once made allusion, I fear the foliage would ripen before the fruit. In some places when the rainfall averages 24 to 30 inches many good Grape growers find their Vines greatly improved by giving their outside borders an occasional soaking when the temperature is lower than that of the interior. Add to this the rainfall, and the quantity I have recommended at p. 467 will not be greatly in excess of that which passes through the external compost. *W. Coleman.*]

Hardiness of Plants.—My advice and remarks as to leaving plants out all the winter were intended to apply, as I stated at the time, to such as were of a bulbous or tuberous-rooted nature, and not such things as Acacia armata and others, that, except in very mild winters or in favoured localities, require a cool greenhouse for their protection. The natural place for all bulbous and tuberous-rooted plants is in the ground, and unless this is wet, heavy, and unfavourable, most of them will be found to do far better left alone than dug up and dried with the loss of roots in the way they usually are. All that is necessary is to keep the frost from getting at the more tender kinds by affording a slight protection of some kind on the surface of the soil above them, and to aid at starting by giving them a little sand and leaf-mould mixed, that they may have a comfortable medium to lie in. Any one having doubts as to the benefit such plants derive from remaining undisturbed may soon convince himself by trying a portion of their stock out to compare with those now taken up, and I venture to predict if they do this they will see a very marked difference in favour of the former. *J. S.*

The Wilson Raft.—Has Mr. Wilson ever tried a raft constructed with a flat surface, with holes cut in it for placing the pots through? Such a raft could have the size of the holes cut to suit the size of the pots and the requirements of the plants, and so be able to accommodate both aquatic and subaquatic to the required depth of water; the roots would also find their way through the bottom of the pots, and so contribute largely to their support. I think a raft constructed on this principle would be of advantage to the plants, and have the merit of being cheaper, requiring less materials, and for the same reason much lighter, therefore able to float a larger number of plants, and the pots could not get upset. *T. Gifford.*

Zonal Pelargoniums for Autumn Blooming.—In your issue of November 16 you mention Pearson's Mrs. Leavers as one of the most effective of the pink section. The following I find are all good, including Mrs. Seavers, and they are now blooming profusely, viz.:—Brutus, C. Schwind, Mrs. Paget, Sir H. S. Stanhope, Mrs. W. Brown, Colonel Holden, Captain Holden, Sybil Holden, Lady E. Campbell, Lady Sheffield, and Mrs. Gregory, ranging from the softest pink to the deepest crimson. They are grown in a cool conservatory, with the temperature not lower than 45° at night. *G. J., Micklefield, Leeds.*

Paraffin as an Insecticide.—The correspondence on this subject may appear to be rather protracted, but such a simple and efficacious remedy for such a fearful pest as mealy-bug can hardly be too much extolled or too widely made known. I think the thanks of all gardeners are due to the discoverer of this use for it. *E. K. Carton.*

International Kidney Potato.—"A. D." is anxious to prove by argument peculiarly his own that this and other new Potatos are of as good or better quality than the old sorts. The cry of "old age" and "depraved taste" is somewhat stale; nor does it fit in this discussion. I stated that I wanted to give International a trial, and was told by a respectable dealer that he had proved it to be not worthy of a trial. Since my letter appeared in this paper I have received communications from some of the best growers on the subject, and International is condemned for lack of flavour in comparison with the old sorts; add to this that the tubers become black under ordinary treatment as early as October. Surely these are grave faults, and I maintain that it is well that the public should know about them before purchasing a Potato at a high price. International may be of good

quality in "peaty loam;" for my part I do not even know what that article is. Peat is peat, and loam is quite a different material. It is often dangerous to mix them, and few people would try. The only way to settle this question is by trial. I will be pleased to place a dish of Victoria grown at Loxford against International grown on similar soil and have them cooked in the editorial sanctum at 41, Wellington Street, by permission of the Editors. This is only a fair way of doing it. I repeat again that I have tried many of the new varieties of Potatos, and not one of them is so good in flavour as Dalmahoy, Walker's Regent, and Victoria. What has old age or depraved taste to do with it if you try them both together? Surely I am neither so old nor so stupid as not to be able to settle such a question as this. I further say that, with the exception of Schoolmaster, they are nowhere for field culture. *J. Douglas.*

Violet, Marie Louise.—I enclose a few flowers of the above variety, which may prove identical with that sent by Mr. Merritt, p. 633 [Yes]. Violets are grown extensively here, and Marie Louise is considered preferable to any other kind at this season of the year; not only are the individual blooms larger than Neapolitan, but it is also much more prolific of blossom. We have some plants in 5-inch pots that have shown from twelve to sixteen flowers at one time. *E. Hill, The Gardens, Tring Park, Nov.* 18.

Vegetables in the North.—I have been much interested of late with the accounts of the shortcomings and vicissitudes attending the cultivation of different garden crops this season, especially Tomatos, Carrots and Cauliflowers; and as we grow each of these extensively in the gardens here I have thought it worth the trouble to send you an account of the way in which they have succeeded in our northern climate this season. The Tomato I grow entirely in the open air; wherever there is a spare space betwixt the Peach and Apricots trees on a southern exposure the same is made available, and there has not been the slightest symptom of disease, and the crop has been a most abundant one. I have gathered 130 lb. of excellent fruits from thirty plants trained to the wall as described. The varieties I grow are Excelsior (Hathaway's) and Orangefield Dwarf Prolific. As to these having any good effect in preventing wasps and flys from attacking the fruit of Peaches and Apricots, it has not been apparent here, for their ravages this season were most alarming, after all that we could do in the way of destroying such pests—as many thousands of them succumbed to traps and other expedients employed for their destruction. Carrots have been an excellent crop, and very free from canker, which is an unusual occurrence here; they have likewise been very large, some of them weighing over 4 lb. The varieties are Altringham and Long Red Surrey. I attribute my success this season to the following cause. I had a large brake of Strawberries that had been in possession of the same ground for five years. In the end of October I trenched down the whole herbage to the depth of 2 feet, ridging up the ground on the surface, so as to allow the winter's frost to get thoroughly into it, the soil being a retentive sour clay. In the spring, before sowing, I merely levelled it down, giving a slight point over to equalise the surface, and immediately after sowed the seed, and the results have been most satisfactory. To prove that the new ground was the cause of my succeeding so well I had a small brake sown after a crop of Cabbages had been cleared off, and there was not one of them that could be presented in the kitchen on account of canker in the roots. An old friend of mine, and one who served his day well as a gardener, tells me that to grow a crop of Carrots after a crop of Leeks is a good preventive against canker. I intend to give it a trial this next season, and as the authority is good I can with confidence recommend it to others. Cauliflowers have been extra good all through the season, and more particularly Veitch's Autumn Giant, which has been wonderfully fine, and seems to have suffered no deterioration from the hands of careless seed growers, or from any other source likely to impair its good qualities. Even up to this date (November 12) we are cutting it daily, and although not quite so large as it was a month ago still it is very superior to the ordinary varieties of Cauliflower. I sow the seed on a warm border about the middle of March, weather permitting, and prick them out to about 2 inches apart after they will handle easily, and plant them out any time betwixt the 1st and middle of June, on good ground, well manured and trenched. My crop has been grown on ground after Celery, and it has been the wonder of everybody, on account of the size and purity and closeness of the heads. *George Berry, Cullen House Gardens, Banffshire.*

An Easy Mode of Fixing Trees to Walls.—Some years ago I called attention to a mode of carrying out this necessary operation much quicker and easier than by the common way of nails and shreds, calculated, moreover, to save bruised knuckles and chilled frozen fingers. It was simply to drive in small tenter-hooks in the spots to which the branches were affixed, then take a vulcanised indiarubber band, of size and strength suitable to the branch requiring fixing, put one part through the other and then, bending back the branch to the wall, and loop the end bough through the hook. A box containing a gross of assorted sizes may be bought for a shilling retail. They should be of the stouter substances, for endurance as well as keeping the branches well in place. One advantage of these loops is that they do not furnish a harbour for insects and their eggs like the shreds. Another way of training is by means of "wall eyes" fixed in the proper places. A piece of tarred string may be put through these in order to tie back the branches. *W. D. Prior.*

Flower Stands.—The accompanying illustration (fig. 113) of an elegantly designed flower-stand in enamelled white and gold, serves to show to what perfection the manufacture of such *articles de luxe* has been brought by the firm of Messrs. J. J. Thomas & Co., of 285, Edgware Road, W., who were awarded a Gold Medal at the Paris Exhibition, on the ground of the artistic excellence of their various productions.

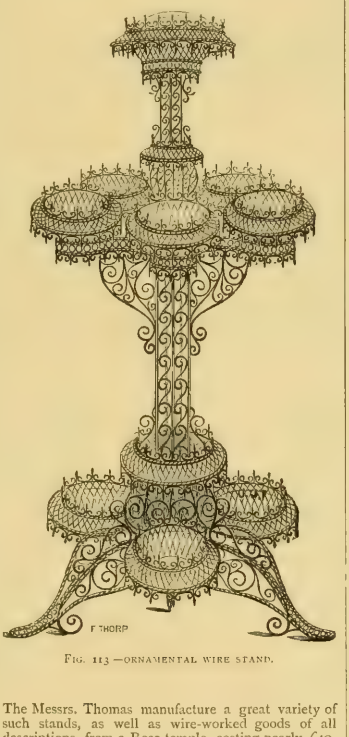


Fig. 113.—ORNAMENTAL WIRE STAND.

The Messrs. Thomas manufacture a great variety of such stands, as well as wire-worked goods of all descriptions, from a Rose temple, costing nearly £40, to a sixpenny wire basket of good design and substantial workmanship.

Mrs. Pince's Black Muscat Grape.—At The Towers, Didsbury, I recently saw some very fair samples of Mrs. Pince's Black Muscat. The crop was heavy, the bunches good, the berries good. If there was any fault it was in lack of colour, which is generally, I believe, the case as compared with the Alicante. Still the flavour is superior to that of the last-named variety, which is a great point in its favour. At The Towers also are some very fine samples of Alicante beside the one above mentioned, but it would almost be inferred that Mrs. Pince was preferred there as a late Grape instead of it. Some few years ago when planting the late vinery at Elvaston I had such a poor opinion of Mrs. Pince from what I had then seen that, though I planted a Vine of it, I felt as if I had done wrong in planting it. Were I now to plant a house in this part for late Grapes, I would plant a Vine of Mrs. Pince with confidence. Circumstances, such as soil, situation, and seasons, have great effect upon Vine culture. It gives confidence to act upon observed success, though no doubt some good things are as it were lost sight of for the want of knowledge of the merits of the subject. *R. Mackellar.*

The Deodar.—At the meeting of the Floral Committee this morning a special vote of thanks was accorded by the committee for some male catkins of Cedrus Deodara. After the meeting I went direct to Kew, and the first Deodar I came upon had plenty of male catkins upon it. I then examined several others, and found them very common. *J. Croucher*, 18, *Overstone Road, Hammersmith.*

The Chromatella Rose.—Having read the note on this Rose at p. 282, I beg to be allowed to report what happened concerning it when I was on a visit once to one of the leading nurserymen in London. Allured by the resounding denomination of a Rose called Cloth of Gold, I inquired what it was like, and after some chatting they concluded by saying it was a synonym of the Rose Chromatella. Consider how glad I was at being prevented from making myself the laughing-stock of my men, as the true Chromatella is nowhere so common and thriving as on these shores of the Lake of Como. Truly it would have been just like "carrying coals to Newcastle." Now in the note at p. 282 it is asserted that clever judges and Rose growers consider them identical, but the writer disclaims this, and adds that the true Chromatella is as rarely met with as "a needle in a bundle of hay." I would much wish to see published in your journal the characteristics of the true Rosa Chromatella, longing to know to which varieties the many yellow Roses so much admired in my garden belong. *The Head Gardener of the Villa Taverna, close by Torno, Sept*, 11.

Manufacture of Jam at Maidstone.—When calling attention to this matter on p. 589, I put the annual manufacture at 100 tons per annum. I am informed by Mr. George Bunyard that this quantity, large as it is, falls very short of the actual amount manufactured by Mr. E. Steer alone; in fact he will this season boil up the astounding mass of 2000 tons. This extraordinary quantity is chiefly made up of black and red Cuarants, Raspberries, Damsons and Plums; and to contain it seven barge-loads of jars were required, in sizes capable of taking four and six to fourteen pounds each. It appears that very large quantities of this yield of jam go to the Black Country, where it is no doubt a great and acceptable boon. I have been very careful in giving the exact quantity, lest the statement should be regarded as an outcome of what the Prime Minister terms "the hare-brained chatter of irresponsible frivolity." *R. D.*

Pyracantha.—Nothing in its way could be more beautiful than this plant, which I saw a few days ago trained up the wall of a cottage and on either side of one of the windows. The shoots up the wall-side were quite crowded with berries, and these, of a fine red colour, were very effective under the influence of the morning sun. When this Cratægus can be had like this, it certainly is worthy of attention, and will be considered one of the things of the season, taking into consideration indoor and outdoor subjects, but it is not in nearly every case that this plant is seen well covered with berries—many can be seen which are fully developed or of a good size and no berries upon them. The situation no doubt has a deal to do in the matter; no doubt the same principles which will bring other shrubby plants into a profusion of flowers will bring this. In some positions at the side of a house where the drainage is good and the soil not over rich no doubt this plant will develope wood that will flower and fruit in its season; where planted in rich soil no doubt the tendency will be more to grow than flower. *R. Mackellar.*

Pears for Late Use.—There can be no question that, as your correspondent states both Winter Nelis and Easter Beurré Pears are most valuable kinds to come in late, but there are few gardens except in very favoured localities where the latter can be grown in a way that it will ripen properly and attain that degree of perfection which will entitle it to rank as a first-class dessert fruit, or in any way to compare with the beautiful specimens of it sometimes imported from the Channel Islands and foreign parts. Occasionally it comes very good on south walls in exceptionally warm seasons, and where the soil is particularly suited for Pear growing, but as it is so uncertain, to plant it when there are now hardier and more trusty kinds that ripen at the same season is to court disappointment and loss of time. In Joséphine de Malines and Bergamotte Esperen we have most of the good qualities that can be desired in late Pears, and both grow freely on the Quince stock and make handsome prolific pyramids. In cold districts it is well to give them a wall having a south-west or south-east aspect—a position they are thoroughly deserving

of, as it also Glou Morceau, which when so favoured is second to none to come in about Christmas. Winter Nelis, where it turns out right, is a most luscious fruit, but the tree in many places is not a good doer, and the Pears are liable to crack; however, it is worth trying in every garden to afford variety, and if found to succeed, to be increased by grafting or other means accordingly. In naming Joséphine de Malines and Bergamotte Esperen in the special way I did, I was desirous of recommending such as I knew could be thoroughly depended on, as it is always better to have a few really good kinds than several varieties that are altogether uncertain. The two last-named Pears are of somewhat recent introduction, and will, I doubt not, when better known, to a large extent replace such as Easter Beurré, Ne Plus Meuris, and others that used to be grown for affording a late supply. I have tried Bezi May, but find it a failure, as the fruit rarely becomes sufficiently soft and melting to be at all eatable, and it is seldom better than Uvedale's St. Germain, which except in size they somewhat resemble, and from which therefore it has most likely been raised by seed. As a kind for stewing, this latter, the Catillac and the Brown Bear of Worcester are all good, and when dishes are required for show purposes to make up a dessert some of the best coloured come in admirably and make a tempting display. The grand specimens of Uvedale's sometimes seen in Covent Garden under the name of Belle Angevine and offered at such fancy prices are used in this way, but it is to be feared that their good looks often lead buyers astray. *J. Sheppard.*

Tea Roses, an Enemy of the Rose, &c.—Under this heading C. Raffell, in your impression of November 16, appears to have somewhat misapprehended my remarks about Tea Roses. I do not recommend a shaded but a somewhat sheltered position for these, or, indeed, for all Roses, and also, when in flower, non-exposure to the mid-day sun, which soon spoils any bloom. As to the insects of which he complains, no doubt they are veritable thrips—at least they answer to the description of that pest. Dry heat, indoors or out, tends to invite them, as well as red-spider; but, bad as the latter is, the first-named are far more difficult to contend with, as their presence does not make itself known till the flowers are spoiled. In the writer's *Rose Growing for Amateurs*, and *Roses and their Culture*, both these Rose pests are treated of, and directions for their cure, so far as such evils can be cured, are given. The worst feature in both visitations is the difficulty of applying remedies from the situations in which they present themselves—the one in the heart of the flowers, the other on the underside of the leaves. Perhaps the following recommendations will meet the wants of more sufferers than your correspondent. I have noticed also that thrips is more common in, and more destructive to, light than dark coloured flowers. The tinted whites, such as Malmaison, have their delicate interior flushings turned into a dirty tone, and the petals soon drop from the centre. A strong solution of Gishurst Compound is esteemed a potent remedy by some practitioners. The following wash also is as effective as such applications can be in the cases under review — six or seven pounds of soft soap, dissolved in two gallons of rain-water, added to a gallon of strong decoction of tobacco liquor; if a less quantity is required, those ingredients may be diminished *pro rata* as circumstances require. Dipping bodily is the most effectual way of treating pot plants, laying the pots afterwards on their sides to drain. A zinc pail, to contain the liquid, and which can be held under the branches, the fluid being applied under the foliage with a good-sized plasterer's brush, is the best mode of administering a dose to outdoor plants. In both cases the applications should be washed off before the plants are entirely dry. Great care ought to be taken to prevent any of these powerful liquid insecticides from saturating the soil. A drenching board is therefore useful for potted plants, and a piece of tarpaulin may be placed over the ground to catch the droppings during outdoor use. After all, prevention is better than cure, and if frequent ablution with tepid soft water and copious syringing does not suffice, the heroic treatment of stamping out the enemy by cutting off and burning such blooms and leaves as exhibit undeniable symptoms of attack must be resorted to. The recommendations here given will apply to all hard-wooded subjects, as well as Roses, so far as relates to the two special pests referred to. *W. D. Prior.*

Salvia patens Shedding its Buds.—The shedding of buds of Salvia patens arises from dryness as the roots, a condition of the soil of which it is extremely impatient, as it never flowers really well or is seen in full beauty till the autumnal rains set in and a cooler and moister state of the atmosphere than we get during the summer months prevails. When required to bloom early, the best way to treat it is to plant in deeply trenched soil where it can get partial shade for a few hours during the hottest part of the day, and if this is done and the surface of the bed mulched over with half decomposed leaf-mould or other light non-conducting material of that kind, and a watering be given occasionally, it will greatly increase the strength and number of the spikes, and induce them to expand their blossoms freely. I have always found that plants left in the ground all winter so as to become thoroughly established are much more free-flowering than those dug up and treated in the ordinary way, which improved habit no doubt is owing to the increased size of the tubers and the greater depth many of them penetrate to what others do that are turned out annually every spring. All that is necessary to preserve them during the winter is to give them some slight protection by way of a top-dressing so as to prevent very severe frosts from reaching the roots, and if these at the time of planting have a little sharp sand scattered amongst them it is a great help in keeping them sound and free from decay. The deep rich blue of Salvia patens is so choice and beautiful and so distinct among flowers, that the plant is deserving of all the cultural care that can be bestowed on it. When cut there is nothing adds such a finish to a vase as a spike or two of this popular favourite. From its late blooming habit I am of opinion that it would be valuable for pots for the decoration of greenhouses in autumn and early winter, and I fully intended to give it a trial this year for that purpose, but frost, cold and pitiless in its destruction, has forestalled me and cut all off before I expected. *J. S.*

New Varieties of Potatos.—Potato raisers of late years seem to have turned their attention more to attaining handsome exhibition varieties than to the production of superior flavoured good eating sorts. I would suggest to the committee next time a new sort is placed before them, to satisfy themselves by all means about its appearance, &c., but before giving it a certificate to have a dish or two boiled, and to satisfy themselves about its flavour and cooking qualities. Perhaps when the committee visit Chiswick to give their opinion upon new sorts as suggested by "A. D.," Mr. Barron would do well to give one of his satellites a hint beforehand to have a good fire somewhere, and a pot or two handy, so that before giving any sort a certificate a sample may be boiled and placed before the committee, with a modicum of salt, for the main test of its worth, *i.e.*, its eating qualities. Never mind though the Potato fraternity may say it is not the custom to have them boiled in judging their merits on the exhibition table. The answer to that is, more's the pity, as most of the public and growers generally purchase and grow Potatos, not for looking at, but for eating. *Pict.*

Messrs. Sutton & Sons' Florists' Seed Grounds, Reading.—At the present time the Cyclamens and Primulas in the above establishment are simply magnificent, and all interested in such flowers would be amply repaid by a visit, even if that involved a very long journey, for, speaking advisedly, I verily believe they cannot be equalled, certainly not surpassed in any garden, public or private, in the United Kingdom. Should any reader be sceptical in the matter he may soon verify my words, and give himself a treat by a visit to the grounds, which are always open (Sundays excepted), and visitors courteously received. Of Cyclamens the number is legion, variety more than great, with colour of every hue from pure white to the darkest red, and the plants throughout are the perfection of good culture, having fine sturdy foliage, flowers well thrown up, and in great abundance; indeed, they are altogether so perfect, and each one so like its neighbour, colour excepted, that they might have been cast in a mould. I have hitherto had a preference for the persicum varieties, as being to my mind much more refined both in flower, habit of growth, and foliage, but the Messrs. Sutton have made such advances in the improvement of the giganteum section, especially in habit and splendour of foliage, that I hardly know now which to admire most. Some amongst the giganteum section have foliage so large yet sturdy, and so beautifully marked, that they bid fair to rival many of our cultivated fine-foliage plans. The flowers are proportionately large, how large I would rather not say, but ask all that can to see for themselves. Many thousands of bulbs are annually required for the Messrs. Sutton's retail trade alone, and many hundreds of the best kinds are carefully selected for seed production. At the time of my visit a large span-roofed house was entirely set apart for seeding, not a plant of which was saleable at any price. What astonishes one is the incredibly short time the thousands of plants which are now flowering so profusely have been in attaining that state. The great bulk of them are from seed sown in September of last year, little more than a twelvemonth, and yet there are hundreds of plants from 12 to 18 inches through, and flowered to perfection, bespeaking the truth of the manager's words, on expressing my astonishment, "They like generous treatment," and sure enough they get it. But good as the Cyclamens are, the Primulas are, if anything, still better: house after house is filled with them, the demand for seed being so great that an addition of two houses has had to be made this season, and which are certainly model houses for Primula growing. None of the plants are ever potted in larger than 32-sized pots, and the size of the plants, combined with the most robust growth and abundance of flowers, is enough to arouse the enthusiasm of the most phlegmatic gardener that might see them. Of course many varieties are grown, but only two in quantity, viz., Sutton's White and Sutton's Red, both having very large fimbriated flowers. During the last six years over 160 varieties have been obtained from various sources and grown in competition with these two, but not one, taking all points into consideration, has yet exceeded the standard attained by these two kinds. How to improve the habit of the plant seemed to have been the Messrs. Suttons chief aim, and certainly they have their reward, for further improvement in this respect does not seem possible, and the same may be said of the flowers, especially of a new variety lately obtained, which has deep rose-magenta flowers of the largest size, and will probably be put in commerce next season. Much more might be written concerning them, but I trust sufficient has been said to induce some at least of the readers of the *Gardeners' Chronicle* to go and see for themselves. *W. W.*

Garden Tallies.—It will not be without advantage to many at this period of the year to describe a cheap, simple, home-made garden tally which I hit upon some years ago. Good garden tallies are certainly a desideratum for every kind of plant, and I have found none superior to these now described. Procure some spoiled Venetian-blind laths, unpainted. These will cut into any length or size with a ruler and strong sharp-pointed knife as easily as cardboard. Write the names distinctly upon these strips with a gardener's indelible pencil. Afterwards give them a coating or two with any hard, quick-drying, transparent varnish; copal is as good as any. Bore a hole in one end of the tally if it is to be tied on to plants, through which pass a loop of whip-cord or tarred strong twine. These are better for the purpose than wire. Let these loops be long enough to put the tally easily through. I have some of these tallies made ten years ago, and they are in quite as good condition as at first. The manufacture of these tallies will furnish a not uninteresting evening amusement for the junior fingers of a family, provided the knife part of the process is confided only to trustworthy hands. *W. D. Prior.* [Mr. Prior's note reminds us that we owe it to our readers to caution them against trusting to the paint on the foreign-made labels sold in the seed shops. We have been using some this season, and find that the names written on them, as well as the paint, vanish in about three months if at all exposed to the weather. EDS.]

On Cauliflowers.—I have had seed of a variety named Eclipse, sent out by Dickson, Brown & Tait, of Manchester, that has proved to be a first-rate sort. I sowed in May, planted out from the seed-bed when the plants were fit, and began cutting at the beginning of October. They are the finest I ever had, being white and firm, in fact I don't think they know how to get frothy. You can have them any reasonable size—from compact heads fit for the dining-room, up to large ones for the servants' hall. Any one trying Eclipse I fancy would not be disappointed. I may add that, my soil being light, I never earth up the Brassica tribe. *W. Hutchison, The Gardens, Llwyndu Court, Abergavenny, Nov. 13.*

Cypripedium insigne.—I have grown this Orchid for a long time, but never till last year do I remember having seen one stem with two flowers; this year I have again one stem with two fine flowers, and another stem with one fine flower, and one not quite expanded. Is it usual for them to have two flowers on one stem? *J. M.*

Elm Roots in Drains.—Some seven years ago a service drain was cut here and laid with 6-inch tile-pipes, and part of it went through a wood consisting of Beech, Ash, Alder, and a few Elms. The soil consists of stiff clay almost impervious to water; the drain was cut about 5 feet deep, and the pipes laid at that depth. During the operation it was observed that none of the roots descended beyond 15 inches from the surface, so that the drain was considered safe from them. All went on well till about two years ago, when the volume of water from the drain began to decrease and ultimately stopped altogether. Fearing the trees had something to do with it, we had the drain opened, when we found the pipes so completely choked with a mass of rootlets, that it required considerable force to dislodge them. We also ascertained that only the Elms had found their way down, none of the others having descended over 3 feet from the surface; but in every instance where an Elm was within 50 feet the pipes were completely choked up

by them. One thing struck me at the time, viz., the great disproportion between these million mouths or roots, and the small roots connecting them with the trees—in no instance were they over one-fourth of an inch in diameter. Are these roots formed in drains (true feeding mouths) the same as those formed in the soil? or are they similar to roots I have seen formed by Vines into fermenting materials when their tops were still dormant, and which seemed to give no extra vigour to the Vines, but rather the reverse? I remember a drain from a spring being choked up in the same way some years ago. In this instance the Elm (a solitary one) stood on a sandy knoll some 20 yards from the drain, which was at least 7 feet deep at this particular place, the pipes in this instance being 4-inch faucet pipes, still the Elm found them out, with the result specified. One lesson we have thus learned—never to plant Elms near drains unless we can leave them open. If Vines have the same affinity for drains as the Elm seems to have, might not a few be constructed in our Vine borders to create what is often much needed—feeding mouths? I have never seen such a quantity of root in so small a compass as these formed by the Elms: the water in both instances was sweet and clean. *J. Shand, Gardener and Forester, Meldrum House, Aberdeenshire.*

The "Hurricane" Lamp.—I can quite endorse the statement of your correspondent, Mr. Rowbottom, respecting the utility of the above as a garden lamp. It first came under my notice some four years ago, when living at Bodorgan, being introduced there by Mr. Ellam, the gardener. I have also had two in use here for the past twelve months. I think it requires only to be better known, as when a good light is wanted, especially in boisterous weather, I consider this the one for use. *E. Hill, The Gardens, Tring Park, Nov.* 16.

Yucca gloriosa var. elegans marginata.—This grand addition to an already numerous family is worth a passing notice, not only on account of its hardiness, but for its beauty. It has the robust habit of its parent, but its leaves are margined with pale yellow, and are as constant as the varieties of Y. aloifolia, and far more handsome, quite rivalling in merit the lovely variegated variety of Y. filamentosa. *M. E.*

Winter Budding of Roses.—At first sight this may appear a contradictory notion, budding being an operation performed out-of-doors and in the summer season. The conditions supposed here are, however, not so very dissimilar, the process being applied to prepared stocks full of sap and in a growing condition, in fact such as have been brought into the "house" for the purpose of grafting in more or less moist heat. Every experienced cultivator of Roses is well aware that grafted plants are, as a rule, never so thrifty as those produced from buds, so that it is surprising, the feasibility of winter budding having been ascertained, it is so little practised as a mode of propagation. True it is done at some of the large nurseries as a supplementary practice to use up crooked and awkward bits of wood with eyes, unfit to cut into handsome scions; but its great objection in the "trade" is that it does not make plants fast enough for sale dimensions, yet it is admitted that, once started, the plants produced are more enduring than those from grafts. It is, therefore, a system peculiarly adapted for amateurs who are not affected by considerations of profit and hasty production. The mode to pursue is this. Those young Manetti stocks or Briers brought into the house for grafting are budded on the main stem with buds taken from the sappiest shoots which have been stored for making grafts. In some of these the wood will come clean away from the shield, in others a piece of the wood will remain connected with the heart of the eye, as is often the case with buds in summer. This is to be left on, and the bud inserted and tied in the ordinary manner. The after-treatment of those budded is precisely the same as that pursued with grafted plants, whether "pushing on" be the system, or the more safe and certain plan of developing them in moderate heat. *W. D. Prior.*

Goodyera pubescens.—What Anœctochili are among stove plants, this singular and pretty North American herb is amongst hardy ones. The leaves are prettily variegated or veined with white, forming an irregular network over the entire leaf. Many years ago I remember this plant being imported from its native haunts, and planted in a variety of ways, but with poor success. It was then tried on the shelf of a cool greenhouse, where it existed, but it could scarcely be said that it grew. Having some plants of Darlingtonia californica doing remarkably well in a cold frame planted in a compost of peat, chopped moss, white sand, and a small quantity of vegetable charcoal, the thought occurred to me to try the Goodyera with the Darlingtonias. I did so, and the success is all that could be desired—the plants are now fine healthy pieces. So that it is quite evident what this plant requires for its full development are abundance of water during the summer season, slight shade, and a mossy compost, resembling a spongy mossy bog. *R. P.*

Rhodoleia Championi.—A paragraph in the last week's issue of the *Gardeners' Chronicle* appears to me to convey a somewhat erroneous impression of the value, from a horticultural standpoint, of this rare plant. The sanguine expectations of its discoverer, Captain Champion, that it "would probably, like the Camellia, blossom as a shrub profusely, each branch bearing six to eight flowers," has not in the slightest degree been realised, notwithstanding the fact of its having been known in gardens for a considerable time. Indeed several skilful horticulturists, after trying the plant under a variety of conditions and failing in all to make them produce flowers, and this after growing good-sized specimens, have reluctantly destroyed them, in order to save the house-room they uselessly occupied. The only record I can at the present moment call to mind of its flowering in this country is to be found in the *Gardeners' Chronicle* for 1858, p. 150. This was at Trentham, under Mr. Fleming's care, and even then but a single flower was produced after eight years of careful cultivation. The figures in the *Flore des Serres* and Lemaire's *Jardin Fleuriste* are only reproductions of the plate in the *Botanical Magazine*, which itself was prepared from a Chinese drawing. So much for the decorative value of the plant. With regard to its hardiness, the Kew plant does not help us much, as it was only placed in its present position during the early summer of the current year. What has become of the large number of seedlings distributed by Standish and Noble nearly a quarter of a century ago? Are any of them still living? It seems very improbable that, even with the protection of a wall, Rhodoleia Championi will ever survive our English winters in the open air. *George Nicholson, Royal Gardens, Kew.*

Reports of Societies.

Royal Horticultural: *Nov.* 19.—H. J. Elwes, Esq., in the chair. At the conclusion of the usual business meeting in the afternoon, the following gentlemen were elected Honorary Corresponding Members of the Society:—The Hon. Marshall P. Wilder, Boston, Mass., U.S.A.; M. Max Leichtlin, Baden-Baden; Professor Charles S. Sargent, Cambridge, Mass.; Mr. Charles Moore, Botanic Garden, Sydney, New South Wales; Signor E. O. Fenzi, Florence; M. Duchartre, Paris; Baron Ferdinand von Mueller, Melbourne; Dr. R. Schomburgk, Adelaide, South Australia; and Dr. George King, Calcutta.

Scientific Committee. — Dr. Maxwell T. Masters, F.R.S., in the chair. This, the first meeting since the recess, was well attended, and the objects brought before the committee were numerous and varied.

Ancient Ploughing. — Mr. Worthington Smith exhibited water-colour sketches of ancient ploughing on Bryn-Glas, an illustration of which was given in our columns on October 5, p. 433.

Physianthus albens as a Moth-trap.—Mr. MacLachlan alluded to the manner in which this plant retains moths which alight on the flower and only escape with the loss of their proboscides, as was seen in the specimen exhibited.—Mr. Hemsley called attention to the circumstance that this curious faculty was described and illustrated in the *Belgique Horticole* and in the *Flore des Serres*, tom xvii., p. 137.

Bamboo Penetrated by Borer.—Mr. MacLachlan, alluding to the attempts to utilise the Bamboo for paper-making in this country by Mr. Routledge of Sunderland, showed specimens of Bamboo received from Demerara perforated by some wood-boring beetle belonging to the Bostrichidæ. Some conversation ensued as to the use of the Bamboo for paper-making.

Orchis hircina. — The Rev. H. Harpur-Crewe showed a dried flowering stem of this plant, from his garden, measuring between 4 and 5 feet.

Plants Exhibited.—Mr. Elwes showed cut specimens in bloom of a Bomarea which was so hardy as to resist 9° of frost with impunity. Specimens of Senecio pulcher flowering for the second time this season were exhibited, as also specimens of Hedychium heteromallum, and Gladiolus hirsutus, which flowers like the Colchicums, before the leaves are developed.

A Botanical Certificate was awarded to Mr. C. Green, gr. to Sir Geo. Macleay, for Hoplophytum calyculatum, described in the report of the Floral Committee, and a vote of thanks was also awarded to the same gentleman for a fruiting plant of Nidularium triste.

Pods of Lilium.—Mr. S. Jennings showed pods of L. auratum and of L. giganteum, to show how the valves of the pods were as it were tied together for some time after opening, in order that the seeds might mature.

Trees Affected by Lightning.—A communication was read from Mr. T. H. Lewis with reference to the notion that certain trees are more affected than others by lightning—Cedar of Lebanon and Beech being rarely struck, while Oaks, Yews, and Lombardy Poplars are frequently so. Numerous instances were cited by various members of injury done to trees by lightning without disruption, the leaves being completely scorched. Dr. Bennett, of Sydney, mentioned a similar occurrence as having come under his observation at Sydney in the case of Araucaria imbricata.

Larch Disease.—Mr. Elwes drew attention to this disease, and to the difficulty of growing the tree on soil and in localities similar to those in which years ago the trees used to thrive. The effects of frost, canker, aphis, fungus, &c., were alluded to, but no definite conclusion was arrived at as to the real cause of the disease.

Action of Carbolic Acid on Plants.—Mr. McLachlan alluded to some experiments of Miss E. Ormerod's on the action of "Sub-Phenyl" in killing the larvæ of Psila rosæ, the Carrot-fly, which feeds on Carrots. Not only were the larvæ destroyed, but the growth of the plant, so far as foliage was concerned, was much promoted.

Nomenclature of Garden Plants.—Dr. Masters read a paper on this subject, pointing out the chief difficulties and sources of confusion, botanical as well as horticultural, and suggesting certain means of remedying the evils, as by the construction of an authoritative standard catalogue of garden plants; by proper supervision and control exercised by the Scientific, Fruit, and Floral Committees respectively, &c. The paper, which excited some discussion, will probably be printed in the Society's *Journal*, and the means suggested to alleviate the inconvenience now felt, particularly the formation of a new *Hortus Kewensis*, or similar work, will be discussed at a subsequent meeting.

Floral Committee.—G. F. Wilson, Esq., and afterwards Dr. Denny, in the chair. A pleasing feature of the meeting on this occasion was the marked increase in the number of visitors, the Council-room and vestibule being well filled from noon until the shades of evening put an end to the proceedings. As regards the number of objects on view there was also a noticeable advance over the preceding meeting, though not so great a variety of plants. Amongst flowering subjects Chrysanthemums preponderated, large groups of these brilliant flowers being contributed by Mr. Turner, of Slough, and Messrs. James Veitch & Sons. Mr. Turner's flowers carried the palm for quality and freshness, and consisted of a very good assortment of the best known kinds, which need not be enumerated, but a word of praise may be said for Sœur Melane, a medium-sized white, and very free-blooming Japanese variety, which every gardener who has to produce white flowers for cutting should procure. Another pretty Japanese variety, of the same stamp, but not so full a flower, is La Nymphe, pale pink, with a clear yellow centre; and amongst dark-coloured flowers in the same section may be mentioned Triomphe du Nord, bronze-chest-nut, with broad recurved florets; and Nuit d'Hiver, a large reddish-bronze flower, with a yellow centre. La Nymphe was also well shown by Messrs. Veitch, whose strongest point was their Pompons, the leading varieties amongst these being the brown and golden forms of Cedo Nulli; Mustapha, a fine dark crimson; and Aurore Boreale, mottled orange. Mr. Turner also staged about three dozen blooms of the large-flowering varieties, and a dozen of the Japanese type, amongst the latter showy decorative flowers being Grandiflorum, an exceedingly fine yellow; and Gloire de Toulouse, a white-centred rose flower of rare form. The Chelsea firm again contributed the interesting assortment of hardy plants for winter bedding shown at the last meeting, and a list of which will be found in another column, Mr John Wills contributed from the abundance of his wealth of Dracænas a very neat collection of well-grown and nicely-coloured plants; also a specimen, the first we have seen, of Anthurium Gustavii, a species introduced through the St. Petersburg Botanic Garden, with cordate leaves, 19 inches long, 15 inches broad, very prominently ribbed. Mr. Bull was the only exhibitor of Orchids, of which always beautiful and attractive flowers he contributed a nice group. Along with other choice plants, Dendrobium bigibbum was shown in excellent form; also D. superbiens—a spike with twelve flowers; Oncidium crispum and others; and Odontoglossum madrense, a pretty little species, with small white flowers with reddish-brown spots at the base of the sepals and petals. It was graphically described by the Professor of Orchids in our vol. v.ii., p. 102, and was to-day awarded a Second-class Certificate. Mr. Bull also showed the white spathed and deep pea-green-leaved Massowia (Anthurium) Dechardii, and Croton Dermannianus, a new type from the South Sea Islands, in habit somewhat resembling C. volutus, but with leaves of the shape of those of C. Bismarckii, dark glossy green, mottled with greenish yellow. Messrs. Veitch & Sons exhibited a magnificent new hybrid Calanthe, named in honour of Mr.

Sedeni, who raised it from a cross between C. vestita and × C. Veitchii, the last-named parent being itself a hybrid between C. vestita and Limatodes rosea, the former being white and the latter a rich rose, and the progeny (C. Veitchii) of the richest rose colour. Now by crossing the latter flower with the white C. vestita, one would naturally expect the offspring to be intermediate, in fact a pale form of C. Veitchii; but the strange fact is that the reverse is the case, × C. Sedeni being of an intense crimson—an infinitely darker flower than C. Veitchii, and more nearly resembling its grand-parent the Limatodes rosea. When Professor Reichenbach described C. Veitchii, in 1859, he said that "of all the beautiful Orchids obtained by hybridising, this curious plant stands first," an assertion which was true enough up to last Tuesday, but which holds good no longer. × C. Sedeni is a grand acquisition, and a First-class Certificate was awarded. The same firm also showed a new Cypripedium from Borneo, named C. Lawrenceanum, with large, bold, brightly mottled leaves, and a very large broad, and well-marked upper sepal. An attractive batch of Cyclamens came from Mr. H. B. Smith, of the Ealing Dean Nursery, who also received a First-class Certificate for a fine large white-flowered variety, named Mont Blanc; and from Mr. Jaques, gr. to J. Perrin, Esq., Malvern, came a cut spike of a novel variety of Odontoglossum Alexandræ, named Perrinii, in which the white petals and sepals are broadly margined with rosy purple; this very distinct and striking form also gained a First-class Certificate. From the gardens at Chiswick came a distinct variety of Abutilon, named igneum, with drooping panicles of deep crimson striated flowers; cut flowers of various Bouvardias, a strong growing hybrid Pelargonium, named La France, with large trusses of deep pink flowers; and Begonia Moonlight, in better condition than ever. Mr. Green, gr. to Sir George Macleay, showed Hoplophytum calyculatum, a Tillandsia-like plant, with a dense conical spike of sulphur-yellow flowers, which was awarded a Botanical Commendation. Mr. Green also showed Nidularium triste, an odd-looking species, with a mass of closely crowded white flowers, concealed in the heart of the tuft of leaves; also cut flowers of Barleria argentea, a Justicia-like plant, with lavender-blue flowers—a grand thing for planting-out in a stove. Mr. Cannell sent a group of well-flowered pot plants of the white and salmon varieties of the Vesuvius Pelargonium, and cut blooms of several other highly-coloured sorts. From Mr. Gilbert, of Burghley, came cut flowers of five of his new double Primulas, most of which have already been certificated. The latest gain amongst them is a fine, full, double crimson flower, named Lord Beaconsfield, measuring quite 2 inches across. Sir Charles W. Strickland exhibited a flowering plant of Coburghia trichroma, an old scarlet-flowered Amaryllidaceous plant, from the Peruvian Andes, seldom seen in flower. A Cultural Commendation was awarded. Mr. S. Ford, gr., Leonardslee, received a special vote of thanks for cones of several coniferous plants, including male cones of Cedrus Deodara. From Mr. Ollerhead, gr. to Sir H. Peek, Bart., M.P., Wimbledon House, came cut flowers of Chrysanthemum laciniatum, a Japanese blush white variety with deeply cut florets, certificated in 1862; and from Messrs. Jackson & Son, Kingston, came a Japanese variety named M. Crousse — a very distinct flower, crimson with white underneath, and the central florets curiously twisted from right to left, to which a First-class Certificate was awarded. Mr. Anthony Waterer, Knap Hill, showed young plants of three forms of the Canadian Spruce, *i.e.*, Abies canadensis pendula, microphylla, and foliis variegatus; and a bright golden, almost smooth-leaved Holly—Ilex scotica aurea—which was awarded a First-class Certificate. Mr. Charles Noble showed cut blooms of Rose Queen of Bedders, and a very handsome specimen of Thujopsis borealis aureo-variegata—the certificated variety; and Messrs. Hooper and Co. contributed a batch of flowering plants of Begonia Fœbelii, and another of Cyclamens.

FRUIT COMMITTEE.—H. Webb, Esq., V.P., in the chair. From Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, came nine Smooth Cayenne Pines, which were awarded a Cultural Commendation. Mr. Hunter, gr. to the Earl of Durham, Lambton Castle, sent a handsome-looking seedling Pine, the result of a cross between the Queen and the Smooth Cayenne, the former being the seed-bearing parent. This was the first fruit that has been produced, and had been ripe three weeks before the committee cut it—only to find how much its flavour belied its handsome appearance. From Mr. J. Atkins, gr. to Colonel Loyd-Lindsay, M.P., came half a dozen good bunches of the Muscat of Alexandria Grape, which were awarded a Cultural Commendation. Mr. Sydney Ford showed about three dozen varieties of Apples, fine in size and highly coloured, as become the famous orchards at Leonardslee; also a dish of red Currants in a fine state of preservation. From Mr. Wood, gr. to Lady A. Mostyn, Leybourne Grange, Kent, came a dozen bunches of Gros Colmar Grapes; and Mr. Johnstone, gr. to the Marchioness of Camden, Bayham Abbey, Kent, had a nice sample of Mrs. Pince's Black Muscat. Mr. Gilbert sent from Burghley three very pretty table fruits of the Telegraph Cucumber, from 12 to 14 inches long; and a dish of Kittoe's Lady Godiva Kidney Potato—a variety which we hear good accounts of. Muscat Champion Grapes, grown in a ground vinery, were contributed by Mr. Harrison Weir; Peake's Vicar of Laleham, a coloured round variety of Potato, was shown by Mr. R. Dean; and Messrs. C. Lee & Son, Hammersmith, sent samples of the Russian Transparent Apple.

Special prizes were offered for vegetables by Messrs. Sutton & Sons, Messrs. James Carter & Co., and Messrs. Hooper & Co., and in some of the classes there was a good competition, but the quality of the products staged was, in most cases, only of an ordinary character. Mr. Pragnell was a good 1st in Messrs. Sutton's class for twelve dishes of vegetables; Mr. G. Neal, gr. to T. Southby, Esq., Bampton, 2d; and Mr. W. Iggulden, gr. to R. B. W. Baker, Esq., Orsett Hall, Romford, 3d. Of some fifteen dishes of the Magnum Bonum there were scarcely two samples of the same type, but Mr. Donaldson, gr. to the Earl of Kintore, Inverurie, was 1st, with a nice sample; and Mr. Bailey, gr. to Captain Drake, Shardeloes, 2d; while the best dozen bulbs of the Reading Onion also came from Mr. G. Neal. There were thirteen competitors in the Messrs. Carter's class for ten sorts of vegetables; and here again Mr. Pragnell came in 1st; Mr. Miles, gr. to Lord Carrington, 2d; Mr. G. Neal, 3d; and Mr. J. Baker, Broad Street, Bampton, 4th. For Messrs. Hooper's prizes for six dishes of Potatos there were only two competitors—Mr. McKinlay, 1st, and Mr. Gilks, Wickham, Newbury, 2d.

Chrysanthemum Shows. — Chrysanthemum growers have had a busy time of it during the last fortnight, especially in the London district, and the fact that at one and all of these exhibitions this glorious autumn flower has been well shown, is a matter for congratulation. As in former seasons, the best varieties have taken the lead, and it would be useless to repeat their names, even did the pressure on our space permit of this being done. Of decidedly new varieties the season cannot be said to have been a prolific one, though we are glad to note the appearance of a few good additions to the Japanese class, which year by year makes a stronger bid for popular favour, and we are glad to observe that their great merits as decorative plants are meeting with a due meed of appreciation.

BRIXTON: *Nov.* 13 *and* 14.—The ninth exhibition of the Brixton, Streatham, and Clapham Chrysanthemum Society was held in the Skating Rink, at Tulse Hill, and proved to be of a superior character to any of its predecessors, the exhibits including, besides Chrysanthemums in pots and as cut blooms, several collections of fine-foliaged plants and Ferns, as well as capital collections of fruits and vegetables. The finest specimen plants of large-flowering Chrysanthemums were contributed by Mr. Hall, gr. to W. Stevens, Esq., Springfield—a remarkably well-grown group of six; the next best in the same class came from Mr. Cherry, gr. to Max. Slee, Esq., and Mr. Young, gr. to T. Hicks, Esq. The corresponding class for Pompons was a poor one, but pyramidal trained and standard Pompons were capitally shown, especially by Mr. Hall. For twenty-four cut blooms the 1st prize went to Mr. Ottaway, gr. to T. Hepburn, Esq., who also secured the highest honours with twelve and six blooms respectively. The finest dozen blooms of Japanese varieties came from Mr. Howes.

PLYMOUTH: *Nov.* 13 *and* 14.—The Western Chrysanthemum Society held its annual exhibition on the above dates, in the Guildhall, Plymouth, and it must be gratifying to the officers of the Society to know that their show proved one of the greatest successes the Society has had since it was started at Devonport many years ago by Mr. G. H. E. Rundle, of Chrysanthemum renown. Many other subjects were staged besides the flower in whose special honour the show was held, but we have not space to allude to them. Amongst the exhibitors who obtained special distinction were Mr. C. Bulteel, of Pamphlett; Mr. E. C. E. Baring, of Membland; Admiral Lowe, the Rev. G. E. Carwithen, Mr. G. H. E. Rundle, Mr. H. P. Mildmay, Mr. W. Derey, General Elliott, Rev. T. Bewes, and Mr. Symons, of Stoke.

OATLANDS, SURREY: *Nov.* 14.—The Walton and Weybridge Chrysanthemum Society's show was held on the above date in the schoolroom at Oatlands, a village which, as well as Hersham, is embraced in the district over which the Society's operations extend; and, speaking broadly, the display was a very successful one. For specimen plants, in the large-flowered section, the leading prize-takers were Mr. Ploughman, gr. to Mrs. Allen, Weybridge; Mr. Polley, gr. to H. Rogers, Esq., Oatlands Park; and Mr. Burns, gr. to H. A. Rigg, Esq. Mr. Polley also took the lead with six Pompons; Mr. Reynolds for four, and also for a single specimen; and Mr. Masters, the secretary, for two. Cut blooms were well represented, and the lion's share of the prizes fell to the exhibitors above-named.

TORQUAY: *Nov.* 14.—The second venture of the Torbay Horticultural Society proved an even more successful exhibition than the first, the show of Chrysanthemums on this occasion being the best that has been held in the district. Amongst the principal contributors we may mention Mr. W. J. Watts, who had the best collection of cut flowers; Mrs. Singer, Paignton, who had some good specimens in several classes; the Earl of Kinnoull, who sent some very choice flowers and plants; as did also the Rev. J. P. Tomlinson and Mrs. Beckett. The Rev. Mr. Gretton sent the best specimens of fruit as an amateur. Mr. Pluck, Jersey, sent a magnificent collection of Apples and Pears; and some good collections of vegetables were also shown, the best exhibitors being Mrs. Singer, Paignton; Mrs. Beckett, Mr. Tanner, Paignton; the Earl of Kinnoull, and the Rev. Mr. Tomlinson. Mr. Smale and Messrs. Phillips each sent a capital collection of foliage plants and cut flowers for exhibition.

TUNBRIDGE WELLS: *Nov.* 15.—The second exhibition of the Tunbridge Wells, Mid-Kent, and East Sussex Chrysanthemum Society, held on the above day, was, horticulturally considered, a great success; but we regret to learn that, owing to very unfavourable weather, the financial results are not likely to prove very favourable. Of specimen plants there were nearly 200, and the chief prize winners in this department were Mr. J. Charlton, Summer Vale Nursery, Tunbridge Wells; Mr. F. Earley, gr. to G. A. Brittain, Esq., Ferndale House; and Mr. H. Tickner, gr. to Mrs. Maxton, Broadwater Down; and the same exhibitors were also successful in the cut bloom classes. Of fruit some 150 dishes, exclusive of Grapes, were staged; and amongst the principal prize-winners were Mr. A. Henderson, gr. to J. Deacon, Esq., Mabledon, 1st for a collection of twelve dishes; Mr. J. Allan, 1st for black Grapes; Mr. A. Bashford, 1st for white sorts; Mr. G. Goldsmith, 1st for Apples in several classes; and Mr. F. Bridger, 1st for Pears. The onerous duties of secretary were ably carried out by Mr. J. Charlton.

WESTMINSTER AQUARIUM: *Nov.* 19 *and* 20.—For the second time the Borough of Hackney Chrysanthemum Society held its annual show in the Aquarium at Westminster, and an exceedingly good display was the result. The Silver Cup given by the Royal Aquarium Company for the best collection of ten Chrysanthemums was won by Mr. Hall, gr. to W. Stevens, Esq., who again staged several of the grand plants shown by him at Brixton last week; the 2d prize in he same class going to Mr. J. Levesley, Isleworth; and the 3d to Mr. J. Holmes, gr. to J. Hicks, Esq., Manor Lodge, Upper Clapton. Mr. Levesley turned the tables on his successful rival in the last class, by beating him with six Pompons in 8½-inch pots. Mr. Levesley's plants were admirably grown, very fresh, and well flowered. For cut flowers of the large incurved type there were nine classes altogether, three of which were confined to nurserymen and gardeners only residing in the Boroughs of Hackney and Finsbury. Mr. J. Holmes, gr. to J. Hicks, Esq., was 1st for twenty-four with a well-grown and evenly matched lot of blooms; and Mr. W. Holmes, Frampton Park Nursery, was placed 2d. For twelve blooms, Mr. Langdon, gr. at Brook House, Clapton, was well 1st, Mr. Benger 2d, and Mr. Holmes 3d. For six, Mr. Benger came in 1st, and Mr. W. Holmes 2d. In the amateurs' class for twenty-four the highest prize went to Mr. C. Butters; and in the open class for a similar number Mr. Sanderson, of Willesden, came to the front in a good competition with eight other growers, taking the 1st prize in the class and the Silver Cup for the best twenty-four blooms in the exhibition. The 2d prize went to Mr. Berry, of Roehampton; the 3d to Mr. Wildman, of Camberwell; and the 4th to Mr. Hillier, of Wandsworth. The open class for twelve blooms was a very heavy one, there being no less than twenty competitors, and here again Mr. Sanderson took the highest honours with a grand lot of flowers. Japanese varieties were extensively shown, and in very fine order. For twelve blooms, not less than six varieties, Mr. Himell, gr. to F. Davis, Esq., Anglesey House, Surbiton, was well 1st; and Mr. Jordan won the cup given by Messrs. Dixon & Co., of Hackney, for the best twelve distinct sorts. Extensive collections were contributed to the miscellaneous class by Messrs. Dixon & Co. and Messrs. E. G. Henderson & Son.

The Villa Garden.

FORCING BULBS INTO FLOWER.—Villa gardeners are in frequent need of lessons in regard to the matter of "How not to do it," and some of the most useful pages in Mrs. Loudon's *Amateur Gardener's Calendar* are those that give information as to the things not to be done. Some professional gardeners are not nearly so well informed as they pretend to be, as was forcibly illustrated in the following incident:—A Villa gardener, anxious to get a few Tulips in bloom as early as possible, was advised by his gardener to pot them and put them in a box plunged in cocoa-nut fibre, over some hot-water pipes in a warm greenhouse. This was the gardener's method of getting Tulips forced into bloom. The result can be readily foreseen. A spindling upward growth, most delicately attenuated, a prolonged leaf development if it were not roasted up ere it could make progress, no root-action, and a bitter disappointment. Happily, perhaps, for humanity, much of its most valuable knowledge and experience are gained through failures and disappointments.

How differently the growers go to work whose business it is to get Hyacinths, Tulips, Narcissus, and

other early-flowering bulbs into the market as soon as possible. They begin early and work systematically, and a record of their doings might supply some useful information to inquirers and beginners.

They pot in all probability much as our friend named above potted, but at that point they effectually part company. Instead of putting their pots near to hot-water pipes they stand them in the open air, and cover them with a thick layer of rotten manure and spent hops. The object of this is just that answered by putting away Hyacinth glasses with bulbs in them for the purpose of inducing them to root strongly. The covering does something more. It serves to keep the bulbs snug and warm, and showers of rain falling on the covering carry down to the root some rich food to impart strength and vigour to them. This surfacing also induces a strong growth, and when bulbs are well grown the developing buds put in appearance quite early. The growers watch for this, and when this state of progress is reached the buds are taken into a gentle heat and the flowers speedily show themselves. This is how bulbs are successfully forced into bloom, and by beginning with Roman Hyacinths and following on with early Tulips, Narcissi and Hyacinths, the markets get furnished with charming flowers in October and onwards. In this way labour is reduced to a minimum, and the best results are had in connection with the smallest outlay of attention.

BERRIED SOLANUMS.—These pretty berried plants have been much improved of late, and they are of great value in a cold greenhouse, in that they succeed the Chrysanthemums and give patches of bright colour through a good portion of the winter. As without in the woods in the cold dull gray autumn and wintry weather we look for berries to give tone and life to hedgerow plantations and woods, so within-doors bright berries take the place of flowers when the atmosphere is too cold and dull to develope blossoms.

Our cold greenhouse is now aglow with colour furnished by Chrysanthemums and berried Solanums mixed together. The berries are not all coloured, and perhaps will not take on the rich coral-red peculiar to them as they are late, and were made to berry as late as possible because they should be serviceable at midwinter. They were planted out in the open ground early in summer, and kept there till within the last month, when they were lifted and potted. The growers who cultivate berried Solanums for the market keep their plants under glass until the berries are formed, and then place them out-of-doors to colour. This is the way to have plants in berry early, but to have them late, planting out in the open ground early in summer is the best place.

The market growers obtain their young plants from cuttings struck in heat in early spring. The Villa gardener can raise his from seed sown in May and June, and these, if grown on and planted out as directed the following summer will give him nice plants for effective service at this season of the year.

Natural History.

HELIX POMATIA. — My specimen of the edible snail (Helix pomatia) became dormant about the 9th inst. As soon as I found that it had completed its winter arrangements, and had firmly sealed the mouth of its shell, I weighed it, and found that its weight was 505 grains troy (or 33 grammes 10 grains), which is 111 grains (or 7 grammes 6 grains) more than it weighed when it roused itself last April. Then its weight was 394 grains (or 26 grammes 4 grains). See *Gardeners' Chronicle*, April 27, 1878, p. 535. Its food has consisted entirely of Lettuce and Cucumber, varied now and then with a tiny piece of the heart of a Cabbage. It has had many other vegetables offered to it, but has declined them all. All the summer it has been kept in a large box, with plenty of leaves, but has had a run, or rather a crawl, on the lawn every day, showing, however, a decided taste for shade from the heat of the sun. At night it has always been replaced in the box, and taken into the house. During its present torpid condition it is singular that it shows no sign of life, even when taken into a warm room with a large fire. I shall be curious, when it wakes up in the spring, to see whether it will have lost in weight as much as it did last year. *E. T. M.*



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, NOV. 20, 1878.

MONTH AND DAY.	BAROMETER: Mean Reading Reduced to 32° Fahr	BAROMETER: Departure from Mean of 18 Years	TEMPERATURE OF THE AIR: Highest	TEMPERATURE OF THE AIR: Lowest.	TEMPERATURE OF THE AIR: Range	TEMPERATURE OF THE AIR: Mean for Day	TEMPERATURE OF THE AIR: Departure of Mean for Week for 60 years	HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION: Dew Point	HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION: Degree of Humidity Sat. 100	WIND: Average Direction	RAINFALL.
Nov.	In.	In.	°	°	°	°	°	°			In.
14	29.28	— 0.49	43.2	17.0	26.2	40.1	— 2.4	38.7	95	NE. NNE. NNW.	0.49
15	29.04	— 0.72	41.2	36.2	5.0	38.8	— 3.5	36.6	94	NE. NNW.	0.29
16	29.15	— 0.60	44.0	15.8	28.2	40.3	— 1.0	36.4	87	WNW. NW.	0.08
17	29.38	— 0.35	44.0	40.3	3.7	41.0	— 0.4	37.6	80	NNW. WNW.	0.05
18	29.91	+ 0.19	47.1	38.0	8.2	43.0	+ 1.1	38.6	84	N. NE.	0.09
19	30.26	+ 0.55	48.1	35.1	13.0	41.1	— 0.7	36.8	85	ENE. N.	0.00
20	30.17	+ 0.47	41.1	33.1	10.8	39.3	— 2.4	34.5	83	E.NE.	0.00
Mean	29.60	— 0.14	44.5	36.7	7.8	40.6	— 1.1	37.0	88	Variable	sum 1.00

Nov. 14.—Overcast, dull and wet throughout. Cold.
— 15.—Overcast, and dull throughout. Incessant rain. Cold. Stormy.
— 16.—Fine, but very cloudy and dull. Overcast at night. Rain in early morning and few drops in evening.
— 17.—Overcast, dull and miserable. Windy. Frequent showers of rain.
— 18.—A very fine bright day. Milder. Cloudless at night. Rain fell in early morning
— 19.—Very fine till evening, then dull and foggy.
— 20.—Overcast, dull and cold throughout.

LONDON: *Barometer.*—During the week ending Saturday, November 16, in the suburbs of London the reading of the barometer at the level of the sea dereased from 30.13 inches at the beginning of the week to 29.32 inches by the evening of the 10th, increased to 29.56 inches by the afternoon of the 11th, decreased to 29.41 inches by the evening of the same day, increased to 29.50 inches by the evening of the 13th, decreased to 29.20 inches by the afternoon of the 15th, and was 29.38 inches at the end of the week. The mean daily readings of the barometer were in defect of the average on every day in the week, the amounts being as follows:—10th, 0.63 inch; 11th, 0.47 inch; 12th, 0.54 inch; 13th, 0.50 inch; 14th, 0.49 inch; 15th, 0.72 inch; 16th, 0.60 inch. The mean reading for the week at sea level was 29.40 inches, being no less than 0.56 inch below the average, and 0.41 inch below that of the preceding week.

Temperature.—The highest temperatures of the air observed by day varied from 50° on the 10th, to 39° on the 12th; the mean value for the week was 43°. The lowest temperatures of the air observed by night varied from 30° on the 12th to 39½° on the 10th; the mean value for the week being 35°. The mean daily range of temperature in the week was 8°, the greatest range in the day being 10½° on the 10th, and the least, 5°, on the 15th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—10th, 45°.6, + 2°.1; 11th, 40°.1, — 3°.1; 12th, 34°.6, — 8°.3; 13th, 35°.6, — 7°.1; 14th, 40°.1, — 2°.4; 15th, 38°.8, — 3°.5; 16th, 40.3, — 1°.9. The mean temperature of the air for the week was 39°.3, being 3°.5 below the average of sixty years' observations.

The highest readings ot a thermometer with blackened bulb in vacuo, placed in sun's rays, were 87° on the 12th, 61½° on the 11th, and 61° on the 16th; on other days the highest readings were between 40° and 50°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 28½° on the 12th, and 29½° on the 13th. The mean of the seven lowest readings was 33¾°.

Wind.—The direction of the wind was W. and N.W., and its strength strong. The weather during the week was dull, cold and wet, and the sky generally overcast.

Fog prevailed on the 12th, and hail fell on the 11th. A gale of wind prevailed on the 10th, and heavy rain fell.

Rain fell on six days during the week; the amount collected was 1.72 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, November 16, the highest temperatures of the air observed by day were 53½° at Plymouth, 53° at Truro, 52½° at Cambridge, and 51⅛° at Bristol; the highest temperature of the air at Bradford was 45°, and at Hull was 47°; the mean from all places was 49⅛°. The lowest temperatures of the air observed by night were 24° at Hull, 26° at Nottingham, 27° at Leeds, and 27½° at Wolverhampton; the lowest temperature of the air at Truro was 33°, and at Plymouth was 32½°; the mean value from all stations was 29½°. The range of temperature in the week was the greatest at Bristol, 23⅜°, and the least at Bradford, 16°; the mean range from all places was 20°.

The mean of the seven high day temperatures was the highest at Truro, 48½°, and Plymouth 47⅝°; and the lowest at Wolverhampton, 42°, and Bradford 42¼°; the mean from all stations was 44⅛°. The mean of the seven low night temperatures was the lowest at Wolverhampton, 32½°, Nottingham 33⅛°, and Hull 34⅛°, and the highest at Truro, 40°; the general mean from all places was 35⅞°. The mean daily range of temperature in the week was the greatest at Plymouth, 12½°, and the least at Liverpool, 6°; the mean daily range from all stations was 8½°.

The mean temperature of the air for the week from all stations was 39½°, being 6½° lower than the value for the corresponding week in 1877. The highest were 43⅜° at Truro and 41° at both Plymouth and Liverpool; and the lowest were 36¾° at Wolverhampton and 38° at Nottingham.

Rain fell on every day in the week at Norwich and Truro, and on five and six days at all other places. The amounts were large everywhere, varying from 2⅜ inches at Truro, 2½ at Cambridge and Sunderland, and 2 inches at Norwich and Hull, to six-tenths of an inch at Liverpool. At other places the falls range from 1 to 2 inches. The average fall over the country was an inch and six-tenths. At Cambridge 2 inches of rain fell on two days, viz., the 14th and 15th.

The weather during the week was bad, dull, and stormy; with much rain and snow at places. At Sunderland there was a heavy fall of snow on the 12th inst., the depth being 18 inches.

A *thunderstorm* occurred at Bradford on the 11th inst. In consequence of the heavy falls of rain many districts were flooded, the worst cases were in Norfolk and Yorkshire.

Snow was reported in Cornwall during the week.

SCOTLAND: *Temperature.*—The highest temperatures of the air observed by day varied from 47½° at Glasgow and Greenock to 46½° at Aberdeen; the mean from all places was 47°. The lowest temperatures of the air observed by night varied from 28° at Edinburgh and Perth to 31½° at Glasgow, Dundee, and Aberdeen; the mean value from all places was 30°. The mean range of temperature in the week from all places was 17°.

The mean temperature of the air for the week from all stations was 39½°, being 6½° lower than the value for the corresponding week in 1877. The highest was 40⅜°, at Leith, and the lowest 38°, at Perth.

Rain.—The heaviest fall of rain was 1.71 inch, at Aberdeen; and the least fall was 0.02 inch, at Perth. The average fall over the country was 0.40 inch.

DUBLIN. — The highest temperature of the air observed by day was 51⅜°, the lowest was 25°, the range was therefore 26⅜°, the mean was 37½°, and the fall of rain 0.09 inch only.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

AUCUBAS, LAURUSTINUS, AND RABBITS.—Will it be safe to plant Aucuba and Laurustinus where rabbits are numerous?—*F. E. R. C.* [We should think so. EDS.]

Answers to Correspondents.

AMARYLLIS: *J. T.* Not recognisable. Its commercial value is *nil.*

CHRYSANTHEMUMS: *J. Watson.* Your seedling has fine large flower-heads, containing plenty of stuff, but it is rough and lacks refinement, and in its present state is, we think, no advance on existing kinds. The colour, a blush white deepening to pale rosy lilac at the circumference, does not strike us as distinct enough. It has, however, some good qualities, and would, perhaps, make a show flower if more carefully grown.

CINERARIAS: *W. E.* To kill the thrips fumigate with tobacco, or perhaps better dip in tobacco-water, two or three times in succession, at intervals of two days, washing them afterwards with pure water.

DOUBLE PELARGONIUMS: *J. Scott.* The two varieties sent as Double Tom Thumb and Ethel Beale seem to be in every way identical. They certainly too closely resemble each other to be both required in the same collection.

MIROBELLE, OR CHERRY PLUM: *J. H. Maxwell.* Used as a stock for Plums or Cherries, and in the formation of hedges. May be obtained at any large

nursery. Price about 6*s.* per 100, less by the thousand.

NAMES OF PLANTS: *W. B. L.* 1, Phlebodium areolatum; 2, Polypodium vulgare cambricum; 3, Nephrolepis pectinata; 4, Gymnogramma peruviana. No. 2 is a hardy; the others stove plants.—*H. M. K., Plaistow.* 1 we have not yet identified; 2, is an ordinary variety of Oncidium crispum.—*V. H. Lucas.* 1, Aloe arborescens; 2, Marica coerulea, probably. The Senebieria was probably introduced in the soil with other European plants.

PINUS: *Cor., Norwich.* The "Orstrikor Pine," advertised in the paper you mention, is no doubt Pinus austriaca.

VINES: *H. Field.* 1. Yes, they are thrown away generally, because it does not pay to force them a second time. 2. The eyes would be saved from the November pruning. 3. By laying the shoots in by the heels out-of-doors, the same as you would Apple or Pear grafts. Of course they will want a little protection in severe weather.

WILLOWS: *F. E. R. C.* We cannot advise you in the absence of any details as to the nature of the land you want to plant; nor can we say anything as to their value. Your best plan will be to consult Mr. Sealing, of Basford, Notts, with whom Willows are a speciality.

CATALOGUES RECEIVED:—The Lawson Seed and Nursery Company (Edinburgh), Catalogue of Forest Trees, Shrubs, &c.—H. and F. Sharpe (Wisbech, Cambridgeshire), Special List of Seed Potatos.—Dicksons & Co. (1, Waterloo Place, Edinburgh), Catalogue of Forest and Ornamental Trees and Shrubs, &c.—Galloway & Graham (138, Queen Street, Glasgow), Catalogue of Selected Roses and General Nursery Stock.—R. and A. Morrison (Pinefield Nurseries, Elgin), Wholesale List of Forest and Ornamental Trees, Shrubs, and Fruit Trees, &c.—Thomas Kennedy & Co. (Dumfries), Catalogue of Forest, Fruit, and Ornamental Trees.—Wood & Ingram (Huntingdon), General Descriptive Catalogue of Nursery Stock.

COMMUNICATIONS RECEIVED.—D. C. P. (thanks).—G. T. M.—G. G.—J. C. & Co.—J. M.—W. R.—H. E.—C. W. S.—J. McI.—M. D. (thanks).—H. M. K.—T. B.—A. D.—J. D. E. Bradley (please repeat your question).—J. C. L.—J. S.—W. G.—B. M.—E. O. (next week).

Markets.

COVENT GARDEN, November 21.

The only alteration we have to quote this week is an advance in Grapes, the demand being better with a falling off in the supply. American Apples continue to reach us in large quantities, samples being generally good. Kent Cobs are in moderate supply. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	3 0
Cobs and Filberts, lb.	0 0	1 0	Pears, per doz.	3 0	0 0
Grapes, per lb.	2 0	6 0	Pine-apples, per lb.	2 0	4 0
Lemons, per 100	6 0	12 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English			Herbs, per bunch	0 2	0 4
Globe, doz.	2 0	4 0	Horse Radish, p. bun.	4 0	..
— Jerusalem, bush.	4 0	..	Lettuces, Cos, Eng., per score	1 6	2 6
Asparagus, Fr. sprue, per bundle	1 6	..	Mint, green bunch	0 4	0 6
Beans, French, p. 100	2 0	..	Onions, young, bun.	0 4	0 6
— runners, p. bush.	4 0	..	Parsley, per bunch	0 4	..
Beet, per doz.	1 0	2 0	Radishes, per bunch	0 1	0 3
Brus. sprouts, bush.	7 0	..	— Spanish, doz.	1 0	..
Cabbages, per doz.	2 0	3 0	— New Jersey, doz.	2 0	..
Carrots, per bunch	0 4	0 6	Shallots, per lb.	0 6	..
Cauliflowers, per doz.	2 0	3 0	Seakale, per punnet	2 6	..
Celery, per bundle	1 6	2 0	Spinach, per bushel	2 0	..
Chilis, per 100	2 0	..	Sweet Potatos, per lb.	0 6	..
Cucumbers, each	0 4	1 6	Tomatos, per dozen	2 6	3 0
Endive, Batav. dozen	1 6	..	Turnips, p. 12 bunch.	3 0	..
Garlic, per lb.	0 6	..			

The Potato trade is dull, and prices remain the same:—Regents, 100*s.* to 130*s.*; Early Rose, 110*s.* to 120*s.* per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Jasmine, 12 bunches	6 0	12 0
Azaleas, 12 sprays	1 6	3 0	Mignonette, 12 bun.	6 0	9 0
Bouvardias, per bun.	1 0	4 0	Narcissus, paper-white, 12 sprays	2 0	6 0
Camellias, per dozen	6 0	12 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, per dozen	1 0	2 0	— zonal, 12 sprays	0 6	2 0
Cornflower, 12 bun.	6 0	9 0	Primula, double, per bunch	1 0	2 0
Chrysanth., per doz.	1 0	6 0	Roses (indoor), doz.	1 6	12 0
— per 12 bunches.	3 0	9 0	— (outdoor), 12 bun.	0 0	18 0
Eucharis, per doz.	2 0	4 0	Spiræa, 12 sprays	1 6	4 0
Gardenias, 12 blms.	4 0	12 0	Stephanotis, 12 sp.	6 0	12 0
Gladioli, various, 12 spikes	1 0	4 0	Tropæolum, 12 bun.	2 0	6 0
Heliotropes, 12 sp.	0 6	1 0	Tuberoses, per dozen	1 6	3 0
Hyacinths, Roman, 12 spikes	2 0	4 0	Violets, 12 bunches	1 0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Azaleas, per dozen	24 0	60 0	Ferns, in var., p. doz.	4 0	18 0
Begonias, per doz.	6 0	12 0	Ficus elastica, each	2 6	15 0
Bouvardias, per doz.	9 0	24 0	Foliage Plants, various, each	2 0	10 6
Camellias, per dozen	18 0	60 0	Hyacin., Rom., doz.	12 0	18 0
Chrysanth., per doz.	6 0	30 0	Mignonette, per doz.	6 0	9 0
Coleus, per dozen	3 0	9 0	Myrtles, per doz.	4 0	12 0
Cyperus, per dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlets, zonal, doz.	6 0	12 0
— viridis, per doz.	18 0	24 0	Primulas, per dozen	5 0	9 0
Erica Caffra, p. doz.	6 0	9 0			
— gracilis, p. dozen	6 0	12 0			
— hyemalis, p. doz.	21 0	42 0			
Euonymus, var., doz.	4 0	18 0			

SEEDS.

LONDON: *Nov.* 20.—Increased animation is observable this week in the seed market; and, in fact, there is in all branches of the trade a decidedly improved feeling. Of new English red Clover a fair supply is offering, and good samples meet an improved sale at the remarkably low rates now current. With reference to American seed the shipments thus far have been most moderate, only 485 tons having been forwarded to the Continental ports, whilst Great Britain and Ireland have taken between them the comparatively small quantity of 159 tons. The arrivals at the western collecting depôts, and also at the Atlantic seaboard, continue on a moderate scale; for example, we note that whilst the receipts in Toledo, Ohio, for the three months ending October 31, 1877, were 4823 bags, the arrivals there for the corresponding period this year amounted to only 2886 bags—thus showing the important deficiency this season of 1937 bags. As regards the values of western seed there is this week no quotable change; should any occur it seems hardly possible for it to be in a downward direction. Some Clover seed of very satisfactory quality has arrived here from Pennsylvania. This State is one of the best-farmed States of the Union. There is now more inquiry for extra fine white Clover, but choice qualities are scarcely to be met with. The low prices, combined with the excellent quality of the new Alsike, have (as might have been expected) brought forward buyers. In Trefoil there has also been more doing. Bird seeds are without fresh feature; in Holland the canary seed market is reported firmer. Blue Peas move off freely on former terms; the smaller varieties are marketed less freely. For Haricot Beans there is more request. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade was very quiet at Mark Lane on Monday, and there was no material change in prices; the tone was, perhaps, hardly so good. To effect sales of Wheat it was occasionally found necessary to give way to some extent in price. Barley was quiet, and about the same in price, inferior kinds remaining very difficult of sale. Malt was unaltered. Oats were in moderate demand, but prices were in some instances a trifle lower than on the previous Monday. Maize was scarcely so well supported as on this day se'nnight, and the tone was dull as regards Beans, Peas, and flour.—On Wednesday trade was very slow for all classes of produce, and the tone of the market continued weak. No change could be noted in prices, but where there was any pressure to sell holders had to give way somewhat in price. The arrivals of foreign Wheat have been liberal, but otherwise the supplies show no augmentation.—Average prices of corn for week ending November 16:—Wheat, 40*s.* 7*d.*; Barley, 39*s.* 4*d.*; Oats, 21*s.* 3*d.* For the corresponding period last year:—Wheat, 51*s.* 8*d.*; Barley, 43*s.* 8*d.*; Oats, 24*s.* 9*d.*

CATTLE.

At the Metropolitan Market on Monday the favourable weather, and rather better accounts from the dead markets, caused a briskness in the early trade, but the finish was dull. Prices were not quotably higher, although for some choicest qualities rather more was obtained. There was a short supply of sheep, but quite equal to the demand; in a very few instances was there any improvement in price. Choice calves were in request, at fair rates. Quotations:—Beasts, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 4*d.* to 5*s.* 10*d.*; calves, 5*s.* 6*d* to 6*s.* 6*d.*; sheep, 5*s.* 4*d.* to 5*s.* 6*d.*, and 6*s.* to 7*s.*; pigs, 3*s.* 10*d.* to 4*s.* 8*d.*—The cattle trade on Thursday was rather firmer than on Monday: supplies were short. For both beasts and sheep the demand was rather active, and fine breeds realised full prices. Calves and pigs were steady.

HAY.

Tuesday's Whitechapel report states that the supply of fodder on offer was moderate, and with a steady trade prices were unaltered. Prime Clover, 100*s.* to 110*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 38*s.* per load.—On Thursday there was a moderate supply, and trade was steady, prices ruling rather firmer, as follow:—Prime Clover, 100*s.* to 110*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 38*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 88*s.* to 95*s.*; inferior, 65*s.* to 78*s.*; superior Clover, 112*s.* to 120*s.*; inferior, 80*s.* to 95*s.*; and straw, 38*s.* to 42*s.* per load.

POTATOS.

The reports from the Borough and Spitalfields markets state that there has been no great change in values during the week. There have been moderate arrivals, and for all sound descriptions a steady demand has prevailed. Kent Regents, 100*s.* to 130*s.* per ton; Essex ditto, 100*s.* to 120*s.*; Champions, 75*s.* to 90*s.*; flukes, 120*s.* to 140*s.*; rocks, 70*s.* to 80*s.*; Victorias, 120*s.* to 140*s.*—The imports into London last week comprised 63,536 bags from Hamburg, 1117 Ghent, 7178 Bremen, 1401 Antwerp, 244 bags 81 packages Rotterdam, 100 sacks Boulogne, 239 bags Dunkirk, 200 barrels New York, and 20 bags from Harlingen.

COALS.

The demand during the week has been a steady one, at the following prices:—Bebside West Hartley, 15*s.* 9*d.*; Bower's West Hartley, 15*s.* 9*d.*; Springwell West Hartley, 15*s.* 9*d.*; Walls End—Haswell, 19*s.*; Hetton, 19*s.*; Hetton Lyons, 17*s.* 3*d.*; Lambton, 18*s.* 6*d.*; Tunstall, 17*s.* 3*d.*; Tees, 18*s.* 9*d.*; Hawthorns, 17*s.* 3*d.*; Original Hartlepool, 19*s.*; South Hetton, 19*s.*; Salvin's Hutton, 17*s.* 6*d.*

Send for a PRICE LIST of

BLAKE'S SELF-ACTING

HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms.

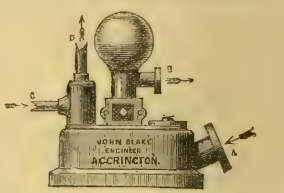
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on December 7.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wineham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July* 16, 1878.

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug.* 22, 1878.

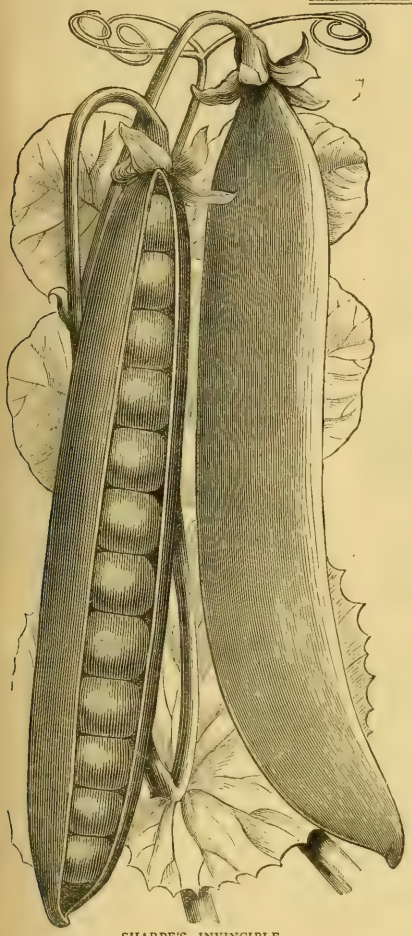
"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq., *Emmett Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (a square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.

CHARLES SHARPE & CO.,
SEED MERCHANTS and GROWERS, SLEAFORD.



SHARPE'S INVINCIBLE.

SHARPE'S INVINCIBLE.

NEW LONG-PODDED BLUE MARROW PEA.

CHARLES SHARPE & Co.

Have much pleasure in sending out this invaluable new Main-crop PEA, which has been raised by Mr. WILLIAM CULVERWELL, of Thorpe Perrow, who has devoted a considerable amount of skill and attention to the improvement of this vegetable.

The Invincible is a cross between Veitch's Perfection and Essex Rival, and has the advantage of being but little liable to the attack of mildew.

The plant is about 3 feet in height, of a robust branching habit. The pods are produced in pairs, and occasionally three together, from near the ground to the top of the stem—the rows having the appearance of being clothed with pods from top to bottom. The pods are closely packed with from ten to twelve large Peas, which, when cooked, are of exquisite flavour, and of a beautiful deep green colour.

As a main-crop Pea, either for the Gentleman's Garden or the Market Gardener, CHARLES SHARPE & Co. have no hesitation in saying that the Invincible Pea will be found superior to anything yet sent out.

The Editors of the *Gardeners' Chronicle*, in their review of New Vegetables in the spring of 1878, mention Sharpe's Invincible as one of the three Peas of the season worthy of notice.

Price, per Quart, 2s. 6d.

Half-pint Packets, free by Post, 1s.

TESTIMONIALS.

From Mr. W. INGRAM, *Gardener to* His Grace the Duke of Rutland, *Belvoir Castle Gardens.*

SHARPE'S INVINCIBLE PEA.

"A distinct and valuable Pea, having the merit of a dwarf yet sturdy habit of growth, of 2 to 3 feet, and producing large, clean, handsome pods that fill well; maturing eight to nine Peas in each, which preserve their characteristic greenness when cooked, and are of excellent quality. Altogether a very satisfactory Pea, and one especially suitable for gardens of limited size. "WILLIAM INGRAM."

From Mr. CHAS. FRISBY, *Gardener to* Henry Chaplin, Esq., *The Gardens, Blankney Hall, Sleaford.*

"This very handsome and distinct Pea of Messrs. C. Sharpe & Co. is, without doubt, one of the very best Peas yet sent out both in flavour and colour; such a fine green and fine pod for exhibition. It is the finest Pea I ever saw. "CHAS. FRISBY."

"September 7, 1878."

From Mr. JOHN BOLTON, *Gardener to the* Right Hon. Earl Brownlow, *Belton House, Grantham.*

"To Charles Sharpe & Co.

"Gentlemen,—Your Invincible Marrow Pea is all that can be desired—good in quality, the pods well filled, sweet, and good to eat.

"I am, gentlemen, yours respectfully,

"September 6, 1878." "JOHN BOLTON."

Mr. D. LUMSDEN, *Gardener to* Lady Mary Hamilton, *Bloxholm Hall Gardens*, in the *Gardeners' Chronicle*, September 7, 1878:—

SHARPE'S INVINCIBLE PEA.

"I have grown this Pea for the last two seasons, and find it an excellent Pea. This season I have grown it side by side with Marvel, Dr. McLean, Criterion, and others, all excellent Peas, and I consider Sharpe's Invincible second to none. Sown April 12, came in flower June 20, gathered July 1; pods in pairs; from nine, ten, and eleven peas in each pod; very productive and flavour excellent; foliage light green; height from 2½ to 3 feet.

"The Invincible Pea was shown at several of the Horticultural Societies meetings in this county, and has taken the leading Prize against all competition, viz., Ruskington Horticultural Society's Show, 1st Prize, in the amateur's class; Nocton Horticultural Society's Show, 1st Prize; and also at Caythorpe Horticultural Society's Show, 1st Prize, and at the latter place it was pronounced by the Judges to be the best dish of Peas they had ever seen staged. "D. LUMSDEN."

Aswarby Park Gardens, November 12, 1878.

"To Messrs. C. Sharpe & Co.

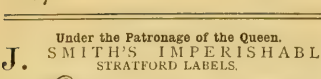
"Dear Sirs,—Having grown your New Pea, 'Sharpe's Invincible,' by the side of the following varieties—Marvel, Veitch's Perfection, Ne Plus Ultra, and Dr. McLean, I have no hesitation in pronouncing 'Sharpe's Invincible' Pea the finest in cultivation.—I remain, dear Sir, yours truly,

Gardener to Sir Thos. Whichcote, Bart. "RICHARD NISBET."

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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

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Indestructible Terra-Cotta Plant Markers.

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MAW AND CO., Benthall Works, Broseley.

ROCKWORK.—Red Sandstone Rock, for Rockwork, Ferneries, Grottoes. Best and most ornamental Rock for the purpose on rail here from our own pits.

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"And will, in our opinion, supersede any other similar system before the public."—*Building News.*

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For Estimates, Drawings, or Particulars, apply to the Patentee,

T. W. HELLIWELL,

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GREEN'S PATENT

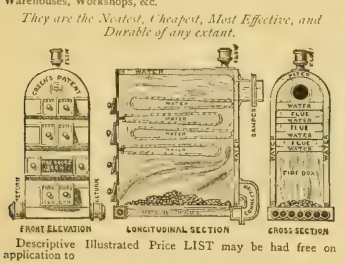
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With Shelves or Tubes, and Hollow Grate Bars,

SADDLE BOILERS with Waterway Backs, and WELDED BOILERS.

Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

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is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

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Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

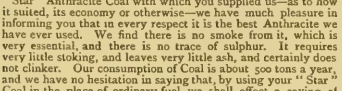
Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

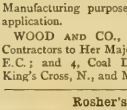
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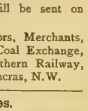
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Prices for the sizes stated, and for not less than a box of 100 feet. Special price for other sizes will be quoted upon application.

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600	6 × 4				
402	6½ ,, 4½	*s. d.*	*s. d.*	*s. d.*	*s. d.*
412	7 ,, 5	10 0	11 0	12 0	13 0
310	7½ ,, 5½				
360	8 ,, 6				
269	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8				
164	10½ ,, 8½	11 6	13 0	14 6	16 9
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10	11 6	13 6	15 3	17 6
111	13 ,, 10				
103	14 ,, 10				
92	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11				
82	16 ,, 11				
92	13 ,, 12	11 9	13 9	15 9	18 0
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13	12 0	14 0	16 0	18 6
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14				
48	20 ,, 15				
44	22 ,, 15	12 6	14 0	16 0	18 6
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	13 6	14 6	16 6	19 0
40	20 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

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In 100 feet Boxes.		21 ounce.			
Inches.	Inches.	4ths.	3ds.	2ds.	Best.
20 × 12	20 × 15	*s. d.*	*s. d.*	*s. d.*	*s. d.*
20 ,, 13	20 ,, 16	15 6	17 6	19 6	21 6
20 ,, 14	20 ,, 17				

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4ths Quality, 16 oz.	Common Glazing, in cases of 300 ft.	35 0
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3ds ,, 15 oz.	Superior Glazing ,, 300 ft.	30 0
,, ,, 21 oz.	,, ,, 200 ft.	37 0
,, ,, 26 oz.	,, ,, 200 ft.	50 0
2ds ,, 16 oz.	Extra ,, 200 ft.	37 6
,, ,, 21 oz.	,, ,, 200 ft	50 0
,, ,, 26 oz.	,, ,, 200 ft.	66 6
Best ,, 16 oz.	Glass ,, 200 ft.	50 0
,, ,, 21 oz.	,, ,, 200 ft.	60 0
,, ,, 26 oz.	,, ,, 200 ft.	80 0

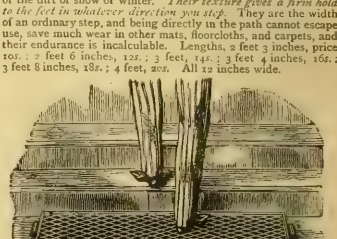
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6 feet by 3 feet ..	..	£2 7 6	12 feet by 3 feet ..	..	£4 0 0
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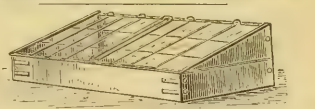
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8 feet by 6 feet, 2 lights..		3 12 0	20 feet by 6 feet, 5 lights..		8 15 0
12 feet by 6 feet, 3 lights..		5 7 6	24 feet by 6 feet 6 lights..		10 10 0



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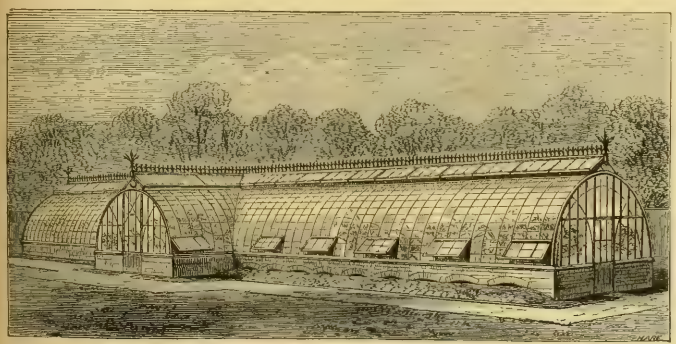
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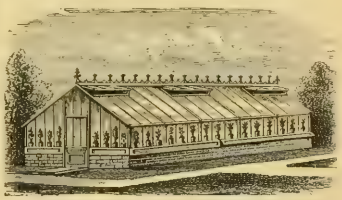
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PORTABLE BOX with ONE LIGHT, 6 feet by 4 feet, glazed 16 oz. sheet glass, and painted four coats .. .. } 35s.
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7	,,	..	..	0	4	6	18	,,	..	..	0	10	0
8	,,	..	..	0	5	0	19	,,	..	..	0	10	6
9	,,	..	..	0	5	6	20	,,	..	..	0	11	0
10	,,	..	..	0	6	0	21	,,	..	..	0	11	6
11	,,	..	..	0	6	6	22	,,	..	..	0	12	0
12	,,	..	..	0	7	0	23	,,	..	..	0	12	6
13	,,	..	..	0	7	6	24	,,	..	..	0	13	0
14	,,	..	..	0	8	0	25	,,	..	..	0	13	6

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ST. PETERSBURG MATS.
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MR. MECHI'S ADDRESS to his OLD FRIENDS and CUSTOMERS and to the PUBLIC:—

"As it has been erroneously supposed by some that I am no longer interested in my London business, I think it desirable to state that I continue to carry it on as energetically, and I trust as satisfactorily to the Public, as formerly, assisted by my only son, who will in due time succeed me. It is now fifty years ago since I first commenced business in Leadenhall Street, and what changes have taken place! Then everybody shaved, and my razor and razor-strop trade was immense; now moustache and beard are the order of the day, and the razor and strop trade is comparatively defunct. Then there were no railways, so people stayed at home and used wooden dressing-cases; now everybody travels by rail, and we have dressing-bags to suit the altered conditions. Fifty years ago the poor geese supplied our pens, and many a now rich merchant in the City will remember the quality of Mechi's shilling pen-knives; but steel pens have extinguished the pen-knife trade and the penmaking machines, and the geese are in peace, except at Michaelmas. In fact, the world is changed, and, I may safely say, improved everything, and has made us a nation of travellers both by land and sea. I wonder how much time is now occupied in reading the steam-worked press? and how much less time is occupied in sipping port wine, as we used to do fifty years ago, when we could not travel? Steam will make our 4 lb loaves cheaper some day, just as it has converted cahco from 2*s*. 6*d*. to 6*d*. or less per yard. Then, again, a letter which used to cost 6*s*. 6*d*. to Cork is now carried for 1*d*. Sir Rowland Hill richly deserves a monument. But to return to business: fifty years ago, when I first commenced on a small scale, I made it an axiom that what I sold should be good and useful, and I believe thousands who used the strop and paste, which I personally invented, can testify to this; it fact, it was sometimes complained of that I stamped on my razors 'Exchanged if not approved.' I have never, and shall never so long as I live, deviate from this principle, because it is the true means to retain and increase one's connection. I devoted my attention especially to the quality and convenience of arrangements in the dressing-case and dressing case department, and in the tasteful selection of articles suitable for presentation, as well as on the matter of dispatch boxes and writing cases. Although both razors and penknives have 'gone out,' our sportsmen remain, and 'sporting knives' form one of our special departments. I feel firmly convinced that there is no fear of the departure of knives and forks, or dinners, so we make this an important department in quality and price. In conclusion, I ask no favours, but simply desire that my customers should compare the quality and price of my wares with those of other dependable establishments, and form their own conclusions. Most of my worthy assistants and workmen have been nearly forty years in my service, and long ago learned that civility and attention to our customers are as important as good quality in the articles sold. Illustrated catalogues will be forwarded post-free on application."

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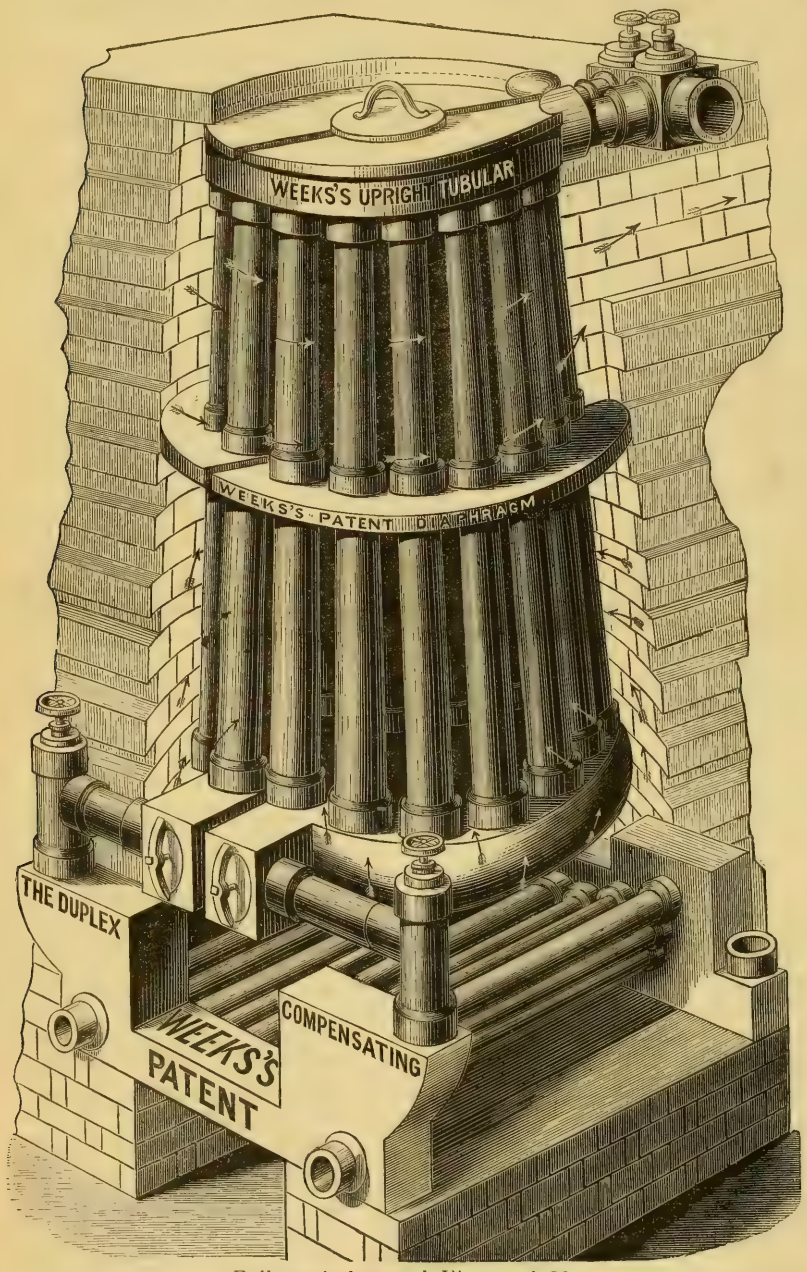
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J. WEEKS & CO., HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

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TO SECRETARIES OF HORTICULTURAL SOCIETIES.—The Editors will be greatly obliged for early information respecting the dates selected for holding Horticultural Exhibitions in 1879.

Plants for Winter Bedding.

MAURICE YOUNG, Milford Nurseries, near Godalming, Surrey. See also p. 683.

To the Trade.—Seed Potatos.

CAREFULLY SELECTED and FREE FROM DISEASE.

CHARLES SHARPE AND CO. will have much pleasure in forwarding their SPECIAL PRICED CATALOGUE of SEED POTATOS, Grown by themselves this season.

CHARLES SHARPE AND CO., having at much trouble and expense procured the choicest stocks of all the finest English and American varieties, can confidently recommend what they offer. Seed Warehouse, Sleaford.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (peliucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

HOME GROWN LILIUM AURATUM.—Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."
CHARLES NOBLE has just harvested this year's crop, and will give prices on application.
Bagshot.—October 12.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

SEAKALE, ASPARAGUS and RHUBARB.—Roots for forcing, exceptionally fine. For special quotations apply to
H. THORNTON, 1, Maxwell Road, Fulham, S.W.

To the Trade.

LONGPOD and WINDSOR BEANS, bright samples, very cheap. Samples and price on application.
C. R. FREEMAN, Seed Grower, Norwich.

ROMAN HYACINTHS.—Fine Bulbs, 15s. per 100. Discount to Trade on application.
PAUL AND SON, The Old Nurseries, Cheshunt.

Standard Tea Roses.

PAUL AND SON have a splendid lot of fine STANDARDS of above, 30s. per dozen. The best way of growing these beautiful Roses.
The Old Nurseries, Cheshunt.

GOLD and SILVER HOLLIES.—No better or cheaper in the land, than at
PAUL AND SON, The Old Nurseries, Cheshunt.

STANDARD APPLES, PEARS and PLUMS.—The finest Standard Orchard Trees in England, at
PAUL AND SON, The Old Nurseries, Cheshunt.

White Cape Flowers, Immortelles, &c.

WAITE, BURNELL, HUGGINS AND CO. can now supply the above in quantity. Prices on application.
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SPRUCE FIRS for Christmas Trees, well formed, 2 to 3 feet high, 30s. per 100.
RICHARD SMITH AND CO., Nurserymen, Worcester.

LARCH, 20,000, 1½ to 3 feet, very strong and cheap. Price on application
W. AND J. BROWN, Nurserymen and Seed Merchants, Stamford.

THORNS.—Strong, 2 and 3-yr. old, in large quantities. Samples and prices on application.
RODGER MCCLELLAND AND CO., 64, Hill Street, Newry.

LILIES OF THE VALLEY, strong, for forcing, first quality, all with flowers, price 36s. per 1000.
In stock 800,000 pieces. Apply to
GUSTAV A. SCHULTZ, Eckartsberg, Berlin.

Lily of the Valley.

OSBORN AND SONS have received, in excellent condition, a large importation of single crowns of the above, from Germany. The flowers of this breed are larger than the Dutch, and produced very freely. Price 7s. 6d. per 100 crowns.
The Fulham Nurseries, London, S.W.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.
Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.
Early orders are solicited for the above choice plants. Apply to THE MANAGER, Calcot Gardens, Reading.

Roses.

CHARLES TURNER'S Descriptive CATALOGUE of the above is now ready.
The Trees are very fine this season.

Fruit Trees.

CHARLES TURNER'S select LIST of the above is also now ready.
Trees are strong and healthy.

Ornamental Trees, Shrubs, &c.

CHARLES TURNER'S CATALOGUE can be had on application.
The Royal Nurseries, Slough.

Gentlemen's Gardeners, Amateurs, and Others REQUIRING

GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

FOR SALE.—EUCHARIS, fine flowers, 5s. to 8s. per dozen, carefully packed and forwarded to any part of the Kingdom.
CAMELLIAS WANTED, chiefly white. State price.
JAMES CHARD, Jun., Springfield Nursery, 196, Wandsworth Road, S.W.

WANTED, a few Plants of ERICA ODORATA. Price to
J. WOOLLRIGHT, The Hollies, Mossley Hill, Liverpool.

WANTED, 100,000 THORN QUICK, 2-yr. transplanted. Send sample and price to
HARRISON AND SONS, Leicester.

WANTED, APPLE and MUSSEL STOCKS, strong, for working; also DOG ROSE STOCKS. Quote lowest prices.
WILLIAM BRYANT, Rugby Nurseries, Rugby.

Gooseberry and Plum Trees.

WANTED, DOBSON and LANCASHIRE LAD GOOSEBERRY TREES. State price per 1000. Also PRINCE OF WALES PLUM TREES, Standards. State price per 100.
MARKET GARDENER, 16, Crown Court, Russell Street, W.C.

2581 Choice Bulbs in

SUTTON'S £5 5s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

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SUTTON'S £2 2s. COLLECTION of Bulbs for Open Ground. Carriage free to any port or railway station in the United Kingdom.

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SUTTON'S £1 1s. COLLECTION of Bulbs for Open Ground. Carriage free to any railway station in England and Wales.

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136 Choice Bulbs in

SUTTON'S £1 1s. COLLECTION of Bulbs for Pots and Glasses. Carriage free to any railway station in England and Wales.
SUTTON AND SONS, The Queen's Seedsmen, Reading.

DESCRIPTIVE CATALOGUE of ROSES, FRUIT TREES, DECIDUOUS and EVERGREEN TREES and SHRUBS, RHODODENDRONS, VINES, CLIMBERS, &c. Free by post on application.
H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8s. per 100; 4 to 4½ feet, 18s. per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.
CATALOGUES on application.
The Lawson Seed and Nursery Company (Limited) Edinburgh.

HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application.
CRANSTON AND CO., King's Acre Nurseries, Hereford.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narcissus, 10s. per bushel, 6s. per ½ bushel, 3s. 6d. per peck. Terms cash with order. Package free. Post-office orders payable at Vauxhall Cross to
Mrs. J. E. ALDERSON, Langley Lane, South Lambeth, Surrey.

Planting Season.

JAMES DICKSON AND SONS beg to draw attention to their very superior and very extensive Stock of hardily-grown and well-rooted TREES and PLANTS of every description. Priced CATALOGUES post-free.
"Newton" Nurseries, Chester.

STANDARD ROSES.—All the best leading varieties, 12s. to 15s. per dozen; 100,000 growing in one piece. Send for a Descriptive CATALOGUE to
H. LANE AND SON, The Nurseries, Berkhamstead, Herts.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "Newton" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

Vines—Vines—Vines.

WM. CUTBUSH AND SON beg to announce that their stock of the above is very fine this season, both in Fruiting and Planting Canes, which are strong and well ripened. Prices on application. Special offer to the Trade.
Highgate, London, N., and Barnet, Herts.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

WHITE CAMELLIA BLOOMS.—A constant supply of very fine Blooms. Price on application.
PRITCHARD AND SONS, Nurserymen, Shrewsbury.

Important—Important

SEED POTATOS.—Seedsmen desirous of securing (at remarkably low prices) a genuine and healthy Stock of all the principal English and American varieties, grown from choice and carefully selected Seed, will please send for Special TRADE LIST, post-free on application.
D. BRINKWORTH AND SONS, Seed Potato Growers, Reading, Berks.

SALES BY AUCTION.

Important to the Trade and Others.

85,000 CROCUS, comprising 50,000 yellow, 20,000 mixed, and several white, blue, and striped varieties; 11,000 TULIPS; 1600 choice named and mixed HYACINTHS; 4000 single SNOWDROPS; 14,000 NARCISSUS; 2000 GLADIOLUS BRENCHLEYENSIS; 350 LILIUM LANCIFOLIUM ALBUM, pure white, and other BULBS from Holland.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at The Mart, opposite the Bank of England, City, E.C., on MONDAY NEXT, at half-past 11 o'Clock precisely.

P. & M. will buy for those who cannot attend.

Catalogues at 98, Gracechurch Street, E.C.

City Auction Rooms, 38 & 39, Gracechurch Street, E.C.

IMPORTANT SALE of about 300 Choice Double CAMELLIAS and AZALEA INDICA, compact plants, 1½ to 3 feet, beautifully studded with bloom-buds; a superb assortment of 500 handsome Standard and Dwarf ROSES, selected hardy CONIFERÆ, SHRUBS and AMERICAN PLANTS; fine FRUIT TREES, together with some GREENHOUSE PLANTS in flower, sound DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Rooms, as above, on TUESDAY, December 3, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lewisham, S.E.

Ten Minutes' walk from the Station.

FINAL CLEARANCE SALE, the Land being immediately required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. B. Maller to SELL by AUCTION, on the Premises, The Eastdown Park Nursery, Lewisham, on TUESDAY, December 3, at 11 for 12 o'Clock precisely, the whole of the thriving NURSERY STOCK, in fine condition for removal, having been transplanted within two years, consisting of a fine assortment of choice Border Shrubs, including 300 Cedrus Deodara, 3 to 4 feet; 1000 Green Box, and other Evergreens; 1800 Golden and Green Euonymus; 5000 Ornamental Trees; 700 trained Fruit Trees; 2500 strong Ivies; 700 Virginian Creepers; 300 Standard Roses, &c.

Now on view. Catalogues on the Premises, at the Seedshop, The Pavement, Lewisham, and of the Auctioneers.

Tottenham,

Adjoining the White Hart Lane Station.

PEREMPTORY CLEARANCE SALE without Reserve.—Under Notice to Quit from the Great Eastern Railway.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Brunswick Nursery, Tottenham, on THURSDAY, December 5, at 12 o'Clock precisely, by order of Mr. John Maller, the whole of the well-grown NURSERY STOCK, including Aucuba Stools and Layers, and thousands of young Plants fit for potting, 2000 strong Limes, 1000 Planes, 1000 Euonymus ovalis aurea, large quantities of Evergreens, 2000 Ligustrum ovalifolium, Ivies, 2000 Standard Roses, Tea and H.P. ditto, 2000 Dwarf-trained and Pyramidal Fruit Trees, together with the remaining Stove and Greenhouse Plants, comprising Poinsettias, Bouvardias, Genistas, Tree Carnations, Euphorbias, Camellias, &c. Also FOUR BOILERS, useful GREY MARE and HARNESS.

Now on view. Catalogues on the Premises, and of the Auctioneers.

Tooting, S.W.

Re Wm. Rollisson & Sons in Liquidation.

FINAL CLEARANCE SALE of OUTDOOR STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by the Trustee to SELL by AUCTION, without Reserve, on the Premises, the Nursery, Tooting, S.W., on FRIDAY, December 6, at 12 o'Clock punctually, the whole of the remaining outdoor NURSERY STOCK, comprising a large quantity of Border Shrubs, choice Rhododendrons, including many best named kinds, Ornamental Trees, trained Fruit Trees, Ivies in pots, &c. Now on view.

Catalogues had on the Premises; of G. WHIFFIN, Esq., the Trustee, 8, Old Jewry, E.C.; and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Finchley, N.

Close to the Station.

IMPORTANT SALE of beautifully-grown NURSERY STOCK, the whole in excellent condition for removal, consisting of many thousands of Ornamental Trees, including 1000 very fine Limes, 2000 Poplars of sorts, 5000 Scarlet Thorns, Evergreen and Coniferæ Shrubs, 2000 Green Hollies, 4 to 5 feet; selected dwarf trained and standard Fruit Trees, standard and dwarf Roses, and other Stock.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Finchley Nursery, Long Lane, Finchley, on SATURDAY, December 7, at 12 o'Clock precisely, by order of Messrs. Cutbush & Son.

May be viewed. Catalogues on the Premises, the Highgate Nurseries and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

Re Wm. Rollisson & Sons, in liquidation.—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Trustee to prepare for unreserved SALE by AUCTION the whole of the Stock, comprising the most extensive and unique collection of ORCHIDS, STOVE and GREENHOUSE PLANTS ever submitted to public competition.

Further particulars will appear in future announcements.

Re Wm. Rollisson & Sons, in liquidation.

MESSRS. PROTHEROE AND MORRIS beg to announce that prior to selling the Stock they will offer by AUCTION the GOODWILL of the BUSINESS, thus giving to intending purchasers the advantageous opportunity of securing the concern and of buying at auction prices such stock as may be required for carrying on the same.

Further announcements will shortly appear.

To Seedsmen and Others.

IMPORTANT SALE of 44 Bales of Naples ONION SEED, comprising altogether about 2 Tons, and consisting of the following varieties:—Rocca, Late White, Red Giant, Early White, Marzajola, and Queen.

MESSRS. PROTHEROE AND MORRIS have received instructions from M. G. V. de Luca (late of 43, Wigmore Street, W.), in consequence of his relinquishing this branch of his business, to SELL by AUCTION, at the Mart, Tokenhouse Yard, near the Bank of England, E.C., on MONDAY, December 16, at 2 o'Clock (unless previously disposed of by private treaty).

An order to view the Seed, together with samples, may be obtained on application to the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

Lilium auratum.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, December 2, at half-past 12 o'Clock precisely, 5000 splendid bulbs of LILIUM AURATUM, just arrived from Japan in fine condition; a consignment of BULBS from Holland, SPIRÆAS from Ghent, 3000 fine roots of TIGRIDIA GRANDIFLORA imported direct from New Jersey, 100 LILIUM TIGRINUM FLORE PLENO, Tuberous-rooted BEGONIAS and GLOXINIAS from the Continent, AMARYLLIS, &c.

On view morning of Sale, and Catalogues had.

A Consignment of Plants from Holland, Ghent, JERSEY and FRANCE; also BULBS from HOLLAND, ROSES from HERTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 4, at half-past 12 o'Clock precisely, choice named RHODODENDRONS, CAMELLIAS and AZALEAS, well set with flower-buds, DRACÆNAS, PHORMIUMS, PALMS, and decorative Plants, from a well-known nursery at Ghent; first-class Dwarf Roses from France, Standard and Climbing Roses from Herts, Carnations and Picotees from Jersey, Fruit Trees, Hollies and Variegated Maples from Boskoop, and a consignment of Hyacinths, Tulips, Crocuses, Narcissus, Iris, Anemone, Ranunculi, Gladioli, and Liliums, Spiræas, Lily of the Valley, &c., just received from well-known Farms in Holland. Lotted to suit private buyers and the trade.

On view morning of Sale, and Catalogues had.

New Seedling Camellias, Lilium Melpomene, New CEREUS, NEW CONIFERS, &c.

MR. J. C. STEVENS has received instructions from Messrs. Hovey & Co., of Boston, Massachusetts, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., early in December, three of their magnificent seedling CAMELLIAS, viz., Mrs. Anne Marie Hovey, C. M. Hovey, and C. H. Hovey, the two latter of which have never been sold; also a limited quantity of LILIUM MELPOMENE, by far the darkest and finest of the Japan Lilies; CEREUS, C. M. Hovey, a very new, distinct and superb; AZALEA, Little Beauty; and CHAMÆCYPARIS HOVEYI, a hybrid as beautiful as the Retinosporas.

Day of Sale will shortly be announced, and Catalogues ready a few days before.

The Cedars, Norwood Green, Middlesex,

Between Hounslow and Southall.

To NOBLEMEN, GENTLEMEN, COLLECTORS of RARE and CHOICE PLANTS, PROPRIETORS of EXOTIC and OTHER NURSERIES, &c.

MR. WOODS will SELL by AUCTION, as above, by order of the Proprietor (who is removing), on WEDNESDAY, December 11, and following day, at 12 o'Clock precisely, and entirely without reserve, a small quantity of SURPLUS FURNITURE, and the whole of the OUTDOOR EFFECTS, three capital Cows and Calf, Poultry, Headed Phæton, Harness, &c, double Garden Frames and Lights, Iron Hurdles, Iron ornamental Pedestals and Vases, Garden Seats, Ladders, Implements, Rick of Hay, seven fine healthy standard Rhododendrons, five large American Aloes, fifty splendid large Camellias, twenty Azaleas, Cyclamen, Primulas, and about 30,000 fine Greenhouse Specimen and Bedding-out Plants, Ferns, Palms, Heaths, and a magnificent Collection of Chrysanthemums (all new names).

May be viewed day preceding and morning of Sale, and Catalogues had of the Auctioneer, Hounslow.

FOR SALE, as a going concern, a MARKET GARDENER'S BUSINESS, comprising six large Greenhouses, Pits, Sheds, Stabling, &c., and large Dwelling-house standing in over 2 acres of ground. Close to two railway stations; 9 miles from London. Or would be LET.

Address, A. H., 18, Cawley Road, South Hackney, E.

TO BE LET or SOLD, an Old Established NURSERY and SEED BUSINESS in the Midland Counties. Can be had on favourable terms, and for a young man with moderate capital a really first-class opportunity. By letter to R. M. JACK, 60, Strand, W.C.

To Nurserymen and Gardeners.

TO BE LET, The WELLINGTON NURSERY, close to Wellington College Station, South Eastern Railway. Apply to

MR. BISHOP, Wellington College Station, Berks.

Notice.

OUR NOVELTY LIST is this day published and posted to all our Customers. Should any one not have received a copy we request that they will kindly let us know, when another shall be forwarded.

HURST AND SON, 6, Leadenhall Street, E.C.

SEAKALE for FORCING.—Selected large roots, none to excel for size in growth, 50s. per 1000, and 2s. packing; 10s. per 100, and 1s. packing. Prepaid orders. Cheques crossed London and County. P. O. O. payable High Street, Battersea, S.W., addressed

ALFRED ATWOOD, Market Gardener, 8, Palk Road, Battersea, S.W.

Bulbs of all kinds, Orchids, &c.—New Catalogue (No. 40).

THE NEW PLANT and BULB COMPANY, Lion Walk, Colchester.—It is with great satisfaction that we call especial attention to our New CATALOGUE, just published, containing, as it does, some magnificent New Bulbous Plants. Also, a very select List of Orchids, and the splendid consignment recently brought from the higher mountain ranges of Colombia. Post-free on application.

Three of the Most Beautiful Lilies.

CHARLES NOBLE will send by post, on receipt of 5s. in stamps, three dozen Seeds of LILIUM GIGANTEUM AURATUM and CZOVITSIANUM, with directions to raise your own Lilies instead of importing.

Bag-hot.

For Forcing, Superb Roots.

ASPARAGUS, 4, 3, 2, and 1-yr., thinly-sown stuff.

RHUBARB, finest stools, 4, 3, and 2-yr., from seed.

C. R. FREEMAN, Seed Grower, Norwich.

WHITE CAMELLIA and GARDENIA BLOOMS, 4s. to 6s. per dozen. MAIDENHAIR FERN, 6s. to 9s. per dozen bunches, to the Trade. Cash with order. C. WILSON, Nurseryman, Kendal.

PINE PLANTS.—For Sale, forty strong healthy and clean Fruiting and Succession.

ROBERT FEATHERSTONE, St. Ann's Gardens, Burley, Leeds.

CHRISTMAS TREES, fine, from 6 to 12 feet; and bushy do., 2 to 4½ feet.

Strong QUICK, Standard and Dwarf ROSES, and a variety of other strong Stock.

WILLIAM GROVE, Nurseryman, Hereford.

L. MATHIEU, Berlin, W. Kurfürstenst, 114, begs to offer LILY OF THE VALLEY (Convallaria majalis), strong, for forcing, £1 10s. per 1000. Terms cash.

German Seeds.

A. RIEMSCHNEIDER'S Wholesale LIST of Vegetable, Flower, and Grass Seeds is now ready, post-free, on application.—A. RIEMSCHNEIDER, Seedsman, Brandenburg-on-Havel, Germany.

RASPBERRY CANES (Fastolf), 30,000 strong plants, 35s. per 1000. Free on rail for cash with order.

J. G. MITCHINSON, 9, Chapel Street, Penzance.

Lily of the Valley.

WM. CUTBUSH AND SON can supply the true Berlin Lily of the Valley, which is vastly superior for Early Forcing to the ordinary German or Dutch varieties. Single crowns 10s. per 100; 90s. per 1000. Trade price on application.

Highgate Nurseries, London, N.

TO THE TRADE.

CHRISTMAS ROSES, LILY OF THE VALLEY, SPIRÆA JAPONICA, GLADIOLUS BRENCHLEYENSIS, GANDAVENSIS, FLORIBUNDUS, named French and mixed. } In extra fine clumps, at low prices.

SANDER AND CO., Seed Growers, St. Albans.

TWELVE CAMELLIAS, full of buds, 21s., beautiful plants, 1 to 1½ foot high, all finest sorts in 5-inch pots. Also AZALEAS, finest sorts, full of buds, same price. Extra sizes of both, remarkably fine, 30s., 42s., and 60s. per dozen. Packages gratis for cash with order.

JOHN H. LEY, Royal Nursery, Croydon.

THE FOLLOWING to be Sold cheap, at Colonel WOOLSEY'S, The Warren, Shooter's Hill:—2 WELLINGTONIAS, 3 DEODARAS, and 1 ARAUCARIA, from 15 to 20 feet; 2 HOLLIES, 2 AUCUBA JAPONICA, 1 ABIES DOUGLASII, 1 THUJOPSIS BOREALIS, and 1 BAY, from 4 to 12 feet.

Still some Good Clumps of

SPIRÆA JAPONICA, for Forcing, at £5 per 1000 (including packing), free at the Steamboat at Ghent only for cash accompanied with the order.

PETER DE COCK AND CO., The White Flower Nursery, Meirelbeke, near Ghent, Belgium.

PELARGONIUM VOLUNTE NATIONAL.—The most beautiful large-flowered Geranium ever introduced. Good Plants, 3s. 6d. each; free by post, 3s. 9d.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

THE PRESTON NURSERY and PLEASURE GARDENS COMPANY (Limited), Farington Hall Nurseries, Ribbleton, Preston.—We beg to offer the following cheap and healthy Plants:—

CROTONS in variety. | DRACÆNAS in variety.
PALMS in variety. | FERNS in variety.
STOVE and GREENHOUSE in variety.

Prices on application to the Manager, WM. TROUGHTON.

TWELVE NEW GLOXINIAS for 21s., including the grand new novelties shown at Paris Exhibition, small growing Bulbs in 2-inch pots, or dry, free by post; also large-flowering bulbs of fine AMARYLLIS, imported from Peru, 42s. per dozen.

JOHN H. LEY, Royal Nursery, Croydon.

STANDARD ROSES.—Clean, straight stems, with good heads and well rooted, of leading varieties only. List of sorts and price on application to

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

POPLARS for SCREENS, &c.—Lombardy, Canadian, and large-leaved—all sizes, from 3 to 12 feet. Many thousands. Low prices on application.

RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

LAURELS, Old and New, the latter very fine, superior foliage, superior habits, superior constitution, distinct shades of green, the largest and best grown stock in the kingdom. Send for specimen leaves and priced Catalogue.

RODGER McCLELLAND AND CO., 64, Hill Street, Newry.

To the Trade.

NEW POTATO, "PRIDE of ONTARIO."

H. AND F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application. Seed Growing Establishment, Wisbech.

SUTTON'S MAGNUM BONUM POTATO —Seed direct from the Raiser. True and good sample. 40 per ton, or 14s. 6d. per sack (of 168 lb.), sacks inclusive, delivered on Rail at this Station. Terms cash with order (or satisfactory reference). Cheques crossed "Wilts and Dorset," Post-office Orders payable to

H. T. BATH, Nurseryman and Seedsman, Lymington, Hants.

WILLIAM WALKER has a quantity of DEODARS to dispose of, 3 to 5 feet; likewise PORTUGAL LAURELS, 2½ to 3½ feet. Prices on application.
Also some thousands of GREEN TREE BOX, 3 to 4½ feet, at 20s. per 100.
Packington Nurser, 1 mile from Ashby-de-la-Zouch Station.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

STANDARD THORNS, Paul's Crimson, Double Pink, and Single Scarlet, very strong; Weymouth. PINE, from 5 to 10 feet; CRYPTOMERIA ELEGANS, 4 to 5 feet; Black Italian POPLAR, 10 to 15 feet, to be Sold cheap, to clear the ground. Price and sample of any of the above on application.
RICHARD MASON, Windlesham Nursery, Bagshot, Surrey.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35s. per 100, packing included for cash.
JAMES HOLDER AND SON, Crown Nurseries, Reading.

CHOICE EARLY FLOWERS.

Sweet-scented RHODODENDRONS, flowers of most beautiful form, pure white, and deliciously fragrant.
The Hardy Sweet AZALEA DAVIESII, and DAPHNE INDICA RUBRA, healthy plants, to flower about Christmas.
Descriptive Priced LIST of the above and other Novelties, also Abridged List of General Nursery Stock, on application.
ISAAC DAVIES, Nurseryman, Ormskirk, Lancashire.

PANSIES AND PRIMROSES.

PANSIES, best varieties, named, including Prince of Wales, Duchess of Edinburgh, Countess of Dudley, Sportsman, Black Gem, 4s. per dozen, 30s. per 100, by post 6d. per dozen extra.
PRIMROSES, double and single, twelve varieties, 7s. per dozen, free by post 6d extra.
Trade LIST on application.
FREDERICK PERKINS, Regent Street, Leamington.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

TO THE TRADE.

MANETTI STOCKS, 21s. per 1000.
MUSSEL STOCKS, 15s. per 1000.
CRAB STOCKS, 35s. per 1000.
Samples of the above may be had on application to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

FOR FORCING.

SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d.; Planting, 2s. 6d. to 5s.

To the Trade.

DWARF H.P. ROSES, 30s. per 100, £12 per 1000, best sorts, package included.
H. BENNETT, Manor Farm Nursery, Stapleford, Salisbury.

GIANT LILY of the VALLEY.—Extra strong blooming roots, 2s. per dozen, 12s. 6d. per 100, package free.
E. COOLING, Mile Ash Nurseries, Derby.

Fit for Immediate Working.

ROSA MANETTI and R. MULTIFLORA DE LA GRIFFERAIE, 25s per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

MULBERRIES, in large or small quantities, in good condition for transplanting.
PONSFORD AND SON, Loughborough Park Nurseries, Brixton, Surrey.

ASPARAGUS (Gravesend Giant), for forcing, 6s. per 100.
RHUBARB, Victoria and Albert, 16s. per 100.
Cash and packing included.
T. EVES, Gravesend Nurseries.—(Established 1810.)

Planting Season.

To NOBLEMEN, GENTLEMEN and the TRADE.
THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to
J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

Cabbage and Lettuce Plants.

H. J. HARDY, Stour Valley Seed Grounds, Bures, Suffolk, begs to offer a quantity of strong, healthy, autumn-sown plants:—
ENFIELD MARKET and CARTER'S HEARTWELL, 3s. per 1000.
RED DUTCH, 5s. per 1000.
LETTUCE.—Brown Cos, Siberian, and Champion, 5s. per 1000.
Package and carriage free for 5000 upwards (or plants equivalent), to any Railway Station in England.
Reference required from unknown Correspondents.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2s. 6d.; C. Libani, 3 feet, 2s. 6d.; Thujopsis borealis, 5 feet, 2s. 6d.; Thuja gigantea, 4 feet, 2s. 6d.; Cupressus Lawsoniana viridis, 4 feet, 2s. 6d.; Swedish Juniper, 4 feet, 1s. 6d., 6 feet, 2s. 6d.; Golden Retinospora, 2 feet, 2s. 6d.; Ericoides, 2 feet, 1s.; Gold and Silver Hollies, 2 feet, 2s.; Picea nobilis, 3 feet, 3s.; Pinsapo, 3 feet, 2s. 6d.; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s.; 5 feet, 5s.; Limes, 15 feet, 2s. 6d.; Birch, 15 feet, 1s.; Chestnuts in variety, 1s. each; Scarlet Oak, 15 feet, 1s.; Araucarias, 4 feet, 20s.; 5 feet, 30s.; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d.; Green Hollies 1 to 1½ foot, 25s. per 100.
E. WALKER, Farnborough, Hants.

Cheap Kentish Fruit Trees, etc.

On Ground that must be Cleared this Season.
SPECIAL OFFER.
15,000 APPLES and PEARS, Standards and Pyramids, from 6oz. per 100.
20,000 PLUMS, Standards and Pyramids, from 50s. per 100.
5,000 CHERRIES, tall Standards, 75s. per 100; Maiden Morellos, 50s. per 100; trained, from 18s. per dozen.
LIMES and SYCAMORES, 10 to 12 feet, from 75s. per 100.
A van-load delivered free in or near London.
T. EVES, Gravesend Nurseries.—(Established 1810.)

To the Trade.—Immense quantities of extra fine SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to
LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Fruit Trees.

SCOTT'S ORCHARDIST, the most useful work on Fruit Trees in the English language, free for 32. 6d.
The Merriott Nurseries contain all the best varieties of APPLES, PEARS, PLUMS, CHERRIES, CURRANTS, GOOSEBERRIES, APRICOTS, PEACHES, NECTARINES, NUTS, FILBERTS, WALNUTS, &c. Trees of all sizes and shapes. Priced LIST free on application to.
J. GEORGE HILL, (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

TO THE TRADE.

MANETTI STOCKS, strong, clean grown, and well-rooted, 25s. per 1000.
LIMES, 10 to 12 feet, magnificent trees, 8 to 9 inches round a foot from the ground 1, 25s. per dozen.
ELMS, English, 7 to 8 feet, 20s. per 100; 10 feet, 30s. per 100; 12 feet, extra stout, 12s. per dozen.
HORSE CHESTNUT, 9 to 10 feet, extra strong and straight, 30s. per dozen.
OAK, English, 10 to 11 feet, fine trees, 30s. per 100.
CHERRIES, Morello, extra fine, dwarf-trained, 20s. per doz.
H. BLANDFORD, The Dorset Nurseries, Blandford.

LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed: form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates:—15s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

A Few Thousands of

CAMELLIAS and AZALEA INDICA, fine plants with buds, at low prices (on application).
COCOS WEDDELLIANA in single pots, 12 inches high, 30s. per dozen.
ARECA BAUERI, 12 inches high, 30s. per dozen.
Apply at once to
JEAN NUYTENS VERSCHAFFELT, The Nurseries, Ledeberg, Ghent, Belgium.

Plants for Winter Flowering and Decoration.

MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following:—[per dozen.
AZALEA INDICA, fine plants, and well budded, 24s. to 42s.
BOUVARDIA, in variety, 18s. to 24s. per dozen.
CARNATION, Miss Jolliffe, La Belle, and others, 24s. per doz.
EPACRIS, in variety, 24s. to 30s. per dozen. [per dozen.
ERICA HYEMALIS, fine plants, full of bloom-bud, 15s. to 30s.
LILY OF THE VALLEY, single crowns, 8s. per 100.
PELARGONIUMS, 18s. to 24s. per dozen.
PINK, Lady Blanche, 9s. per dozen.
POINSETTIA PULCHERRIMA, 18s. per dozen.
ROSES, in pots, great variety, 24s. to 42s. per dozen.
SOLANUMS, well berried, 15s. per dozen.
PALMS and DRACÆNAS, 24s. to 42s. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30s. per dozen; besides a large general stock of STOVE and GREENHOUSE PLANTS.
CATALOGUES of which may be had on application.
Royal Nurseries, Ascot, Berks.

QUEEN OF LILIES, LILIUM AURATUM.—Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6d.; No. 2, 1s.; No. 3, 1s. 6d.; No. 4, 2s. each.
ORCHIDS.—Special offer of the following fine Orchids, for £5 5s.:—1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum giganteum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Limatodes rosea.
All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to
WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 58, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

WM. MAULE AND SONS, The Nurseries, Bristol, beg to call the attention of Planters to a few large extra-sized EVERGREEN TREES they have in their nurseries to offer, so desirable for planting new grounds or forming screens or blinds so as to produce an immediate effect:—
CEDRUS DEODARA, 8 to 10 and 10 to 12 feet, 10s. 6d. each.
ABIES DOUGLASII, 10 to 15 feet, 3s. 6d. each.
PICEA PINSAPO, very bushy, 8 to 10 feet, 7s. 6d. each.
SPRUCE, Norway, 6 to 8 ft., 2s. 6d.; 8 to 10 ft., 2s. 6d.; 10 to
FIR, Silver, 8 to 10 feet, 2s. 6d. each. [12 ft., 3s. 6d. ea.
JUNIPERUS SINENSIS, 6 to 8 feet, 3s. 6d. each.
THUJOPSIS BOREALIS, 6 to 8 feet, 3s. 6d. each. [each.
WELLINGTONIA GIGANTEA, 4 to 5 ft., 5s.; 6 to 8 ft., 7s. 6d.
ARBOR-VITÆ, Chinese, 6 to 7 ft., 2s. 6d.; 8 to 10 ft., 3s. 6d. ea.
CUPRESSUS Lawsoniana, 6 to 8 ft., 2s. 6d.; 8 to 10 ft., 3s. 6d. ea.
THUJA GIGANTEA, or CRAIGEANA, 8 to 10 ft., 3s. 6d. ea.
RHODODENDRON, Catawbiense and Ponticum vars., 4 to 5 feet, very bushy in proportion, 3s. 6d. and 5s. each.
AZALEA PONTICA, 4 to 5 ft., bushy in proportion, 2s. 6d. ea.
LAURELS, Portugal, 4 to 5 feet, 2s. 6d.; 5 to 7 feet, 5s. each.

CHARLES NOBLE, Bagshot, Surrey, in a re-arrangement of his Nursery, finds he has an overstock of the undermentioned, which he will sell at 50 per cent. discount for cash, taken in quantities of 100 or upwards in variety at one time. Sample 100, if desired, sent.
Standard Apples, Pears and Cherries, finest named kinds; Gooseberries, White Currants, and Cob Nuts.

8, 10, and 12 feet high.	Various Heights.
Horse Chestnut.	Portugal Laurels.
Scarlet Chestnut.	Common Laurels.
Scarlet Oaks.	Colchic Laurels.
" Maple.	Mahonia Aquifolia.
" Thorn.	Rhododendron ponticum.
Laburnum.	" hybrids.
" Purple.	" hybrids, named.
Lombardy Poplars.	Andromeda floribunda.
Italian Poplars.	Kalmia latifolia.
English Elms.	Azalea pontica.
American Elms.	Cupressus Lawsoniana.
Service Trees.	Picea Nordmanniana.
Sycamore.	Dwarf Roses.
" Purple.	Erica carnea

SWEET VIOLETS.
BLANDYANUM, Double.
BELLE DE CHATENAY, new.
KING OF VIOLETS, Double.
MARIE LOUISE, best Double.
NEAPOLITAN, Double.
REINE DES VIOLETS, Double.
NEAPOLITAN, Single.
WHITE CZAR.
VIOLET CZAR.
VICTORIA REGINA, best Single.
The above are large clumps, suitable for potting, forcing, or forming beds and clumps in flower gardens; 6s. per dozen, 40s. per 100.
PRINCESS MARIE DE SAVOY, new, 3s. 6d. each.
PATRIE, 1s. each.
One plant each 12 vars. free by post, 7s. 6d.
Trade LIST on application. P. O. O. payable to
FREDERICK PERKINS, Regent Street, Leamington.

Cover Planting.

MESSRS. JOHN STANDISH AND CO. have the following Plants to offer, in large quantities, well rooted, suitable for Cover Planting:—
RHODODENDRON PONTICUM, 12 to 18 inches, and very bushy
BERBERIS DARWINII 1½ to 2 feet.
" AQUIFOLIUM, and others.
LAUREL, common, 2½ to 4 feet.
" Portugal, 2 to 3 feet.
" caucasicum, 2 to 3 feet.
AUCUBAS, and other Plants.
When large quantities are taken a very liberal reduction will be made from the catalogue prices.
Samples and prices on application.
Royal Nurseries, Ascot, Berks.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

LARCH FIR—300,000, 2 to 3 and 3 to 4 feet, and large quantities of other Forest Trees.
NEW HEDGE PLANT, Myrobella Plum, of far more rapid growth than Quick.
FRUIT TREES, ORNAMENTAL TREES and SHRUBS, in large quantities.
Priced CATALOGUES, also terms to the Trade, on application to
J. CHEAL AND SONS, Lowfield Nurseries, Crawley, Sussex.

SPECIAL OFFERS TO THE TRADE.

MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

LEWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

PLANTS for NATURALISING in the Wild Garden, Shrubbery Border, Woodland Walks, Hot Banks, Swampy Ground, and in any other position where the plants are allowed to grow naturally, reproducing themselves. See present year's A B C BULB GUIDE, free on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

The Following are Offered at a Low Price by

W. H. ROGERS,

Red Lodge Nursery, Southampton: -

RHODODENDRONS, choice named.
AZALEAS, fine Ghent, and seedling.
RETINOSPORA PISIFERA AUREA.
" LEPTOCLADON
CUPRESSUS LAWSONIANA DENSA.
TAXUS ELEGANTISSIMA
CUPRESSUS THYOIDES VARIEGATA.
" LAWSONIANA VARIEGATA.
THUJOPSIS DOLABRATA.
" BOREALIS, 1 to 3 feet
WELLINGTONIA GIGANTEA, 2 to 6 feet.
PINUS CEMBRA, 1 to 6 feet.
PERNETTYA MUCRONATA.
ARBUTUS UNEDO, 2 to 3 feet.
DESFONTAINEA SPINOSA, in pots
EUGENIA UGNI and APICULATA, in pots.
EUONYMUS OVATA AUREA, in pots.
" RADICANS VARIEGATUS.
GRISLINIA LITTORALIS, in pots.
LIGUSTRUM OVALIFOLIUM, 2 feet.
OSMANTHUS ILICIFOLIUS.
SKIMMIA JAPONICA, berried.
RHODODENDRON PONTICUM, bedded, 6 to 12 in.
CAMELLIA STOCKS, in single pots.
COTONEASTER SIMONSII, 1 to 2 feet

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurel of many varieties, variegated and green Hollies, nearly every variety of Coniferæ, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree; also a fine and select assortment of pyramid and bush Fruit Trees, Apples, Pears, Plums, and Cherries, 12-yr. and 15-yr. old, well transplanted and in full bearing.

Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable.

PROPRIETOR, Whitchurch Gardens, Edgware, London.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

SPECIAL CHEAP OFFER.

PEARS and CHERRIES, stout fruiting standards, well-grown trees.
AUCUBA JAPONICA, 1 to 2½ feet, very bushy and well-coloured.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3 to 4½ feet, beautifully feathered specimens, and take up with good balls.
HOLLY, for hedges, transplanted Spring 1878, bushy and good, all sizes from 1 to 3 feet.
" Gold Queen, Silver, and other variegated and green-leaved sorts, all sizes, 1 to 6 feet.
" crenata, or Fortunei, 12 to 18 inches, bushy and well-rooted, fine for winter bedding
IVY, maculata minor and major, variegated, extra strong plants.
Lists sent post-free on application. Plants extra to cover carriage. Trade price on application.
JOHN NELSON, Nurseries, Heeley, near Sheffield.

SPECIAL CHEAP OFFER of WINTER and SPRING BEDDING PLANTS.
AURICULA, Alpine, fine strain, in 60-pots, 12os. per 1000, 15s. per 100.
DAISY, Aucubæfolia, golden netted foliage, strong clump, 30s. per 1000, 4s. per 100.
" Crown, fine, strong clumps, 25s. per 1000, 3s. per 100.
" Rob Roy, fine red, ditto, 25s. per 1000, 3s. per 100.
" Bride, finest large white, ditto, 35s. per 1000, 4s. per 100.
MENTHA PULEGIUM, strong clumps, 15s. per 1000, 2s. per 100.
MYOSOTIS DISSITIFLORA, true, well rooted fine clumps, 4s. per 1000, 5s. per 100.
PANSY, Cliveden Blue, fine healthy plants, 50s. per 1000, 6s. per 100.
" Blue King, ditto, 50s. per 1000, 6s. per 100.
" Dean's White, ditto, 50s. per 1000, 6d. per 100
" Yellow Bedder, ditto, 50s. per 1000, 6s per 100.
PRIMROSE, Double Yellow, ditto, 85s. per 1000, 10s. per 100.
ROCKETS, Double Purple, ditto, 10s per 100.
" Double White, ditto, 8s per 100.
CATALOGUE of General Nursery Stock on application.
W. BALL AND CO., Bedford Road Nursery, Northampton.

SPECIAL OFFER TO THE TRADE.—SURPLUS STOCK on SALE, as the land must be cleared for building purposes: all fine healthy plants, many times transplanted.

FRUIT TREES.

CHERRIES, Standards, extra strong, 9s. per dozen, 60s. per 100; half do., do., 6s., per dozen, 45s. per 100.
PEARS, Pyramids, 3 to 4 feet, extra strong, 5s per dozen, 30s. per 100. Half-standards, 4 to 5 feet, strong, 7s. per dozen, 50s. per 100.
CURRANTS, Black Naples, fine, strong, 8s. per 100, 70s. per 1000.

FOREST TREES.

BEECH, 4 to 5 feet, strong, 8s. per 100; 3 to 6 feet, 16s. per 100, 6 to 8 feet, 25s. per 100; 8 to 10 feet, 50s. per 100.
CHESTNUTS, Horse, 6 to 8 feet, strong, 16s. per dozen; 8 to 10 feet, 26s per 100
" " Scarlet, 3 to 6 feet, strong, 8s. per dozen; 6 to 8 feet, 10s. per dozen.
LIMES, 2 to 3 feet, strong, 4s. per 100; 3 to 4 feet, 6s. per 100, 4 to 5 feet, 10s per 100; 5 to 6 feet, 15s. per 100, 6 to 8 feet, 25s. per 100; 8 to 10 feet, 60s per 100.

EVERGREEN SHRUBS.

BOX, Green, 1 to 1½ foot, 2s. per dozen, 12s. per 100.
RHODODENDRONS, 6 to 9 inches, 8s. per 100; 9 to 12 inches, 12s. per 100.
" fine and bushy, 1 to 1½ foot, 20s. per 100; 1½ to 2 feet, 25s. per 100.
YEWS, English, 9 to 12 inches, 10s. per 100; 1½ to 1¾ foot, 12s. 6d. per 100; 1 to 2 feet, 16s per 100; 2 to 3 feet, 25s per 100; 3 to 4 feet, 45s. per 100, and 9s. per dozen.
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Exhibition, Herbaceous Border, and Spring Flower Gardens.

All choice sorts, true to name.

In 12 sorts, per doz.—s. d.		In 12 sorts, per doz.—s. d.	
Carnations and Picotees		Pentstemons	3 6
Single plants ..	6 6	Phloxes	3 0
Pairs	12 0	Pinks	4 0
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Hollyhocks, from first-class seed	4 0	Saxifrages	3 0
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Paonies	9 0	Veronicas, large bushes, 9 to 15 in. through..	6 0
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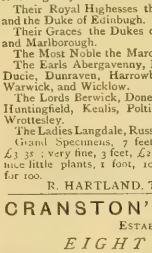
	Per doz. Per 100 s. d. s. d.		Per doz. Per 100 s. d. s. d.
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Ajuga variegata..	2 6 ..	,, single pink	2 0 12 0
,, purpurea ..	3 0 ..	,, ,, white ..	3 6 ..
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Sweet Williams ..	1 0 5 0	,, President ..	9 0 ..
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Hepatica, double red and single blue ..	4 0 25 0	,, Cheshire Favourite and Exile.. each	2 0 ..
,, single white and red ..	6 0 ..	Sedum acre aurea, acre elegans, glaucum, and lydium ..	1 0 6 0
,, double blue	18 0 ..	Stellarea aurea ..	1 0 6 0
Iberis rotifolia ..	1 6 10 0	Veronica repens..	2 0 ..
,, Tenoreana ..	1 0 10 0	Sempervivum tectorum ..	1 0 6 0
Mentha Gibraltaricum ..	1 0 5 0	,, californicum	2 0 12 0
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Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

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Grand Specimens, 7 feet, £5 5s.; splendid plants, 5 feet, £3 3s.; very fine, 3 feet, £2 2s.; stout plants, 2 feet, £1 1s.; nice little plants, 1 foot, 10s. 6d.; 13 for 12; 55 for 50; 115 for 100.

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PEARS on the Quince and Pear stocks.
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CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
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PEACHES and NECTARINES, fruiting trees in pots, a fine stock; do., trained trees.
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STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds; do., in pots for forcing, stout and well grown plants.

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Established Upwards of a Century.

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ASH, 2 to 2½ feet, fine, 20s. per 1000
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BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
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" English (upright), 6 feet, clear stems, with good heads, 120s. per 100
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 50s. per 100; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100; 8 to 10 feet, fine, 12s. per 100
" Lombardy, extra fine trees, 8 to 10 feet, 20s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
" ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
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ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s per 100
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5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 6 inches to 3 feet.
10,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
10,000 large trees for immediate effect, consisting of LIMES, ACACIA, BIRCH, ELM, POPLARS, SYCAMORES, &c.

Kent, the Garden of England.

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Large Spruce, Mulberries, Aucubas, &c.

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FINE DWARFS on MANETTI, all the leading varieties, 35s. per 100
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To the Trade.

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OVAL or BROAD-LEAVED PRIVET, nice bushy stuff, 2 to 2½ feet, 8s. 6d. per 100. COMMON LAUREL, fine, 3 to 4 feet, 20s. per 100. RHODODENDRON PONTICUM, bushy, 12 to 15 inches, 15s.; 15 to 20 inches, 18s.; 18 to 24 inches, 25s. per 100. AUCUBA JAPONICA VERA (the green-leaved, berry-bearing variety) 12 to 15 inches, 10s.; 15 to 18 inches, 15s. per dozen. HOLLY, Shepherdii, fine, 1½ to 2½ feet, 12s. per dozen; Golden Queen, fine, 12 to 18 inches, 18s. per dozen. LIST on application.
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NOBLEANUM is apparently not so well known in England as it deserves to be; invaluable where flowers are in demand in Winter and Spring; forces easily in greenhouse or other warmer structure, and flowers very early out-of-doors. There is probably no other plant, size for size, yields such a bulky return of lively coloured early flowers. These vary from light pink to bright red.
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CHESTNUTS, Spanish, 6 to 10 feet, 8s. per dozen.
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LIMES, 6 to 7 feet, 7s. per dozen; 7 to 8 feet, 10s. per dozen; 8 to 12 feet, 14s. per dozen: extra fine trees, suitable for Parks, from 2s. 6d. to 3s. 6d. each
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EPIPHYLLUMS, in variety, fine bushy plants, well set with blooms, 18s. and 24s. per dozen,
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ROSES, good standard and half standard of all the best sorts, 12s. per dozen, 8s. per 100.
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To the Trade

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LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
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WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen.
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To the Trade.

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BROMPTON STOCK, Giant Scarlet
CYCLAMEN PERSICUM, from large flowers.

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NEW WHITE-FLESHED MELON
THE "NETTED VICTORY."

MELON "NETTED VICTORY" was honoured with a First-Class Certificate from the Fruit Committee of the Royal Horticultural Society, South Kensington, July 2, 1878, and confirmed November 19, which makes Eight First-Class and Special Certificates awarded to Mr. Gilbert for Melons alone, and the raiser believes "Netted Victory" will exceed all those that have preceded it.
"Netted Victory" is free in its growth, a capital setter, deep in flesh, and of exquisite flavour.
Mr. Gilbert is now sending in Fruit of this variety, November 13, and the flavour at this late season is simply perfect.
The whole of the Stock has been grown from the Fruit which obtained the Certificate. Sent out by
WILLIAM & JAMES BROWN,
NURSERYMEN and SEED MERCHANTS
59, HIGH STREET, STAMFORD.
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Come and See.

MY PELARGONIUMS, WHITE VESUVIUS, SALMON and STRIPED ditto, which are now a grand sight. The former at a short distance has the exact appearance of a bed of snow, and is even more floriferous than the original.
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WHITE VESUVIUS, 9s. each, 18s. per dozen.
SALMON do., 1s. 6d. each, 12s. per dozen.
STRIPED do., 1s. each, 8s. per dozen.
Free by post.
☞ H.C.'s Zonal House is now truly magnificent.
H. CANNELL, The Home for Flowers, Swanley, Kent.

The Lily Nursery, Ghent, Belgium.

J. VANDER SWAELMEN'S English CATALOGUES of Ornamental Plants, Winter and Spring Flowering Plants, Lilies, and other Bulbs and Roots, can still be had free on application.

ROSES, Standard and Half-Standard, splendid plants, fine straight stems, 75s. per 100.
GENISTA FRAGRANS, fine bushy stuff, in 48-inch pots, 50s. per 100; do., in 4-inch pots, 30s. per 100.
PRIMULAS, double white, fine plants, in bloom, 12s. per doz.
MAIDENHAIR FERNS, fine plants, in 4-inch pots, £4 p. 100.
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Standard Tea Roses and Budded Camellias from PARIS.

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ASH, 2-yr. seedling, 3s. per 1000.
YEWS, Irish, 3 to 4 feet, 35s. per 100.
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FLOWERING SHRUBS of sorts, 12s. per 100.
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PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Chrestchurch, Hants.—BROWN FIBROUS, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turfs and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s.; five bags, 21s.; 12 bags, 40s. Some also, of good quality, at 13s. 6d. per ton, four tons and upwards.

PEAT SOIL, PEAT SOIL.—BROWN FIBROUS, good quality, for Orchids, Pot Plants, Ferns, &c., 46s. per truck BLACK, good quality for American Plants, Rhododendrons, Azaleas, Heaths, &c., 17s. per ton, or 6-ton truck for £4 10s. Delivered on rail at Blackwater, S.E.R., or Camberley, S.W.R., by the truckload. Cash with order. Sample sack, 5s. 6d., or four sacks, 20s.
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Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c.; £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton.
Delivered on rail at Blackwater, S.E.R., or Farnborough, S.W.R., by the truckload. Sample bag, 4s.; 5 bags, 20s.; 10 bags, 35s. Bags 4d. each
Fresh SPHAGNUM, 10s. 6d. per bag.
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PEAT, Brown Fibrous, superior quality, for Orchids, Ferns, &c., £6 per truck. Also good Black Fibrous Peat for Rhododendrons, Azaleas, &c., at 16s. per ton, or £4 10s. per 6-ton truck, delivered at either Bagshot or Farnborough Station on S.W.R., or Blackwater, S.E.R.
Mr. W. TARRY, Bailiff, Bagshot, Surrey.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3d. per bushel, 100 bushels (33 bags) 20s., truckload (loose) 30s., put free on rail; 5s. for one-horse van-load, if sent from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society.—Four-bushel bag (bag included), 1s.; 30 bags (bags included), 20s.; truck free to rail, 25s.
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GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and many eminent Gardeners.
3d. per bushel; 100 for 20s., truck loose, 250 bush.), 30s.
4-bushel bags, 4s. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s.; or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; 12 for 40s., or 34s. per ton; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. half ton, 26s. per ton; in 1 cwt. bags, 4s. each.
YELLOW FIBROUS LOAM and POTTING MOULD, 1s. per bushel, 10s. per half ton, 23s. per ton.
SPHAGNUM MOSS, 8s. per sack
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth and Paper.
Write for free PRICE LIST. Goods free to rail.
H. G. SMYTH, 10, Castle Street, Endell Street, Long Acre, W.C.

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
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ROCKWORK.—Red Sandstone Rock, for Rockwork, Ferneries, Grottoes. Best and most ornamental Rock for the purpose on rail here from our own pits.
WALKER AND CO., Farnborough Station, Hants.

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UPPER GROUND STREET,
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Have the largest and most complete stock in the Trade; upwards of £20,000 worth to choose from.

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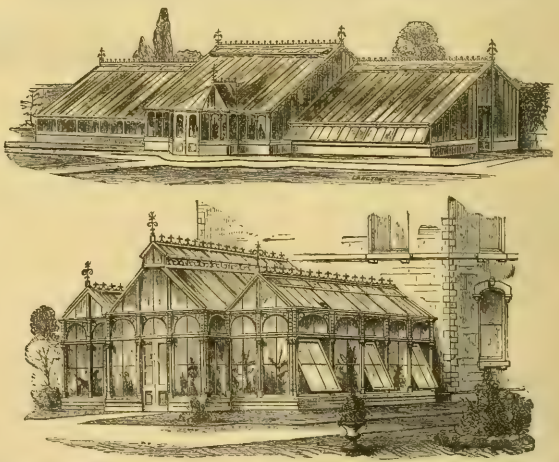
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Land Loan and Enfranchisement Company,
22, Great George Street, Westminster, S.W.



SATURDAY, NOVEMBER 30, 1878.

ENGLISH FOLK-LORE.*

THE remark that times change and that we ourselves change with them, although not new, has at any rate the advantage of being true—so true indeed that it is quite unnecessary to devote any space to the adducing of evidence in support of so self-evident a proposition. The old heathen who was called upon to destroy what he had formerly worshipped, and to worship that which he had formerly destroyed, would not have undergone a more complete revulsion of feeling in complying with this request than is evinced by the attitude of many at the present day with regard—let us say—to such a subject as the study of what is termed by the convenient, though recently coined name of folk-lore. We have done all in our power to eradicate superstition and fable from the bucolic mind; we have driven away our fairies and substituted spirits which communicate their ideas by the prosaic method of rapping on tables for the ghosts which lent a gloomy attraction to many a country mansion; we have by drainage or some other method terrified "Jack o' Lantern" off the face of the earth, for whoever hears of him now-a-days? Board-schools and elegant accomplishments have supplanted the village school-mistress and the "criss-cross rows," in fact, but for the proverbial toughness of popular tradition, we should have succeeded in very little more than abolishing it altogether, just at the very time when it was beginning to be suspected that even old wives' fables had their value, and that the popular sayings and traditions of English people were after all as interesting as those of the New Zealanders, or of any tribe of African savages. And so far have we gone now in an opposite direction that this very year of grace 1878 has been marked by the foundation of a "Folk-lore Society," constituted for the express purpose of preserving "the fast-fading relics of our popular fictions and traditions, legendary ballads, local proverbial sayings, superstitions, and old customs (British and foreign), and all subjects relating to them."

This change of front with regard to folk-lore is mainly due to the fact that "the researches of the antiquary and the archæologist are now recognised as important elements in the scientific evidence as to human history." To see this brought out fully we must consult such works as Grimm's *Deutsche Mythologie*—of which we are glad to see an English translation advertised—or Tyler's *Primitive Culture*; while such points as the world-wide diffusion of certain folk-stories or fairy-tales are in themselves of considerable interest. And it must not be supposed that all these matters necessarily tend in the direction supported by the advanced thinkers of the day. Just as the most recent and most advanced speculations with regard to man are distinctly in accordance with the hypothesis that all the varieties of race are traceable to one common origin, so the world-wide diffusion of a popular myth seems to point to some common source in which all the varying forms of it find their rise, although we may not perhaps feel inclined to accept the inglorious supposition suggested by a juvenile philosopher of our acquaintance, who, hearing this matter talked of as affording ground for speculation, said—"Well, I suppose Noah told his children the stories when they were in the ark, and afterwards they told them to their children, and so the stories got spread all over the world." But when we find, for example, a Zulu or an Aztec riddle corresponding almost exactly with one of our own nursery conundrums, or learn that one of our own nursery games existed in the days of Nero, and is now-a-days met with among the Samoans and New Zealanders, we see how things trivial enough in themselves may come to have an historical importance and interest which at first sight is certainly not apparent.

It is time, however, that we returned to Mr. Dyer's book, which is the latest contribution to English folk-lore literature, and is well calculated to bring the subject in an attractive form before many who have not hitherto paid any attention to it. It contains no original matter, nor does its author speculate to any great extent upon the origin or meaning of the many singular beliefs which he records. This last point is in his favour, especially as, in one or two cases where he offers some such speculations, he seems to us rather unsuccessful. Collected mainly from that storehouse of folk-lore, and indeed of information of every kind—we mean *Notes and Queries*—Mr. Dyer has grouped his materials together in a collected and consecutive form, and the result is a readable little volume, which ought to stimulate many to note and publish the folk-lore of their own neighbourhood. The chapter most connected with our own branch of science is the first, wherein Mr. Dyer dilates on the folk-lore of plants. A volume might well be filled with this subject alone; our own columns two or three years since contained a series of papers on the subject which our author might have consulted with advantage, although it would hardly be fair to criticise on the score of omissions a volume so inadequate in its proportions to the subject of which it treats. But some of the most commonly received traditions have been curiously overlooked: for example, while we have a charm connected with "a Clover of two," which Mr. Dyer rather vaguely explains to be "a piece of Clover with only two leaves upon it," we find hardly anything about the "four-leaved Shamrock," one of the most familiar of lucky plants, rendered so to English ears by one of the prettiest of Samuel Lover's songs. It is probable that a belief in the magical properties of the four-leaved Shamrock is still general in Ireland; at any rate, it was but the other day that the writer of this notice was told of an incident which happened to an acquaintance of the narrator. This worthy man was walking along the street (of course in Ireland) with some hay upon his back, when he saw a cock dragging a beam along! Naturally surprised at so unusual a sight, he directed the attention of a friend to the circumstance, and was at once informed that the supposed beam was a "sthraw." This excited his suspicions, and he found on making a search that he was carrying a four-leaved Shamrock among the hay, which at once explained the delusion under which he had been labouring

The Hawthorn is another plant which merits more attention than Mr. Dyer has bestowed upon it. This tree has long been associated with the supernatural by the peasantry in Donegal and other parts of Ireland, where old Hawthorn trees are looked upon as intimately connected with the fairies. In Normandy it is said to have furnished the material of which the crown of thorns was made, and to have the power of protecting from lightning; and among ourselves it is in some districts, as in parts of Essex and Norfolk, considered unlucky to bring a flowering branch into the house. In Sussex it is considered the safest tree under which to take

* *English Folk-lore.* By the Rev. T. F. Dyer. London: Hardwicke & Bogue.

shelter in a thunderstorm. Mr. Dyer's index is unfortunately far from complete, and on this account we may over-estimate his omissions, which, after all, are unavoidable in so small a work, but it is hardly fair to include under the head of folk-lore such matters of fact as the weather indications derived from certain plants. A great want, too, is a more complete series of references to works quoted. It seems to us that in every case of importance facilities should have been given for the verification of quotations and statements, but as the matter now stands a very considerable amount of trouble must be taken by any one who has a laudable objection to quoting at second-hand if he wishes to discover the authority for a given statement. A greater attention to this point would have made the book much more useful to the student, without in any way interfering with its interest to the general reader. There is room for improvement too in other particulars, as in the reading of proofs, and notably in the index. *B. M.*

New Garden Plants.

CŒLOGYNE MASSANGEANA, *n. sp.**

This is a remarkable new Cœlogyne, that stands nearest the old well-known C. asperata (Lowii). It has all its dimensions, but a far longer laxer raceme and a totally distinct lip, so that there can be no doubt left about its distinctness. The pseudobulbs are pyriform and bear two Stanhopea-like leaves. The long pendulous raceme bears twenty-two flowers at distant intervals. The bracts are rather wide, half as long as the stalked ovary. Sepals oblong, light ochre coloured, keeled in the middle outside. Petals nearly equally broad. Lip trifid, its side laciniæ very much longer than in C. asperata, beautifully maroon-brown with ochre coloured veins. Anterior lacinia whitish with large brown disk. The keels are light yellow. There are three keels from the base to the base of the anterior lacinia, rather prominent, toothletted at some places, and six confluent rows of very green retuse-angled cells before, which remind one of human molar teeth. The column has a retuse membranous border around the androclinium, is light ochre coloured and bears longitudinal brown streaks from the base of the stigmatic hollow to the very base. The rostellum blade is as energetically developed as in a Vanilla, so that the just mentioned cavity with its much developed callous border is scarcely to be seen so long as the rostellum is not bent upwards. This curiosity comes from the Château de Baillonville, près Marche, the residence of Mons. D. Massange, an enthusiastic orchidophilist, to whom I feel pleased to inscribe it. M. C. Wildre, *chef de culture*, gave me the information concerning it, and informed me that it came from Messrs. L. Jacob-Makoy & Co. *H. G. Rchb. f.*

ASPASIA PSITTACINA, *Rchb. f.*†

This rare plant has appeared for the second and third time (as far as I know of), and twice in Yorkshire. It has a raceme of several flowers usually one-sided, bent over, viz., keeping their original position, having the lip turned to the chief axis. It may be compared to the Aspasia epidendroides, but the flowers are larger. Sepals and petals light green with brown transverse bars, which sometimes consist of separate stripes, at other times of confluent ones. The pandurate lip shows two keels and a few purplish dots over its top. The column is brown at its top, then violet, white at the base. It comes from Ecuador, where it was originally discovered by the late Wallis. Now I have obtained it through the kindness of Capt. Hincks, Breckenborough, Thirsk, and Sir C. Strickland, Hildenley, Malton. *H. G. Rchb. f.*

ONCIDIUM LAMELLIGERUM, *Rchb. f., supra*, 1876, vi., p. 808, Dec. 23.

I was most agreeably surprised to see a fresh flower of this Oncid (a glorious rival of Oncidium macranthum, Lindl., itself), sent by C. Dorman, Esq., of Sydenham, through the kindness of Messrs. Veitch. The flower is equal to that of the just-named species. The petals are rather undulated and plicated, as in Oncidium annulare, with brown points on the superior (interior) part, and a violet claw. The lip is very beautiful, with most spreading callosities, forming a rhomboid keel between the two projecting serrated lamellæ, which suggested the name of the species. The species is one of the discoveries of M. Rœzl's elder nephew, M. Edward Klaboch, from Ecuador. The flowering plant is no doubt an offspring of those very numerous Klabochian gales which have so often induced great excitement among Orchidists. *H. G. Rchb. f.*

* *Cœlogyne Massangeana*, n. sp.—Aff. C. asperatæ, Lindl.—Pseudobulbo pyriformi, foliis petiolatis cuneato oblongis acutis; pedunculo longissimo deflexo laxiflоro, parcissime hinc nigro asperato; bracteis cuneato oblongis obtuse retusis ovaria pedicellata vix dimidio æquantibus, ovariis parce nigro muriculatis; sepalis ligulatis obtusis, extus linea media carinatis; tepalis lineari-ligulatis obtuse acutis; labello trifido concavo, laciniis lateralibus semiovatis antice acutis, lacinia media abbreviata transverse ovali emarginata cum apiculo, carinis ternis crenulatis a basi in basin laciniæ anticæ; carinulis ibi antepositis alternantibus senis ex papulis retusis multangulis dentes molares humanos æmulantibus; columna antice alata, ala retusa circa androclinium. *H. G. Rchb. f.*

† *Aspasia psittacina*, Rchb. f., in Linnæa, vol. xli., p. 102. —Racemo tri—quinqueflоro; bracteis ancipitibus carinatis ac uninatis ovaria pedicellata non æquantibus; sepalis tepalisque ligulatis obtusis acutis; sepalis lateralibus deflexis; sepalo dorsali imæ columnæ basi adglutinato; labello cum media columna connato anguste ligulato pandurato retusiusculo; carinis geminis abbreviatis per discum.

Longe recedit ab Aspasia variegata: sepalis tepalisque obtusioribus; labelli circumscriptione, defectu pulvinaris papulosi in labelli basi. Sepala et tepala pallide viridia, seriebus striarum brunnearum seu fasciis brunneis fasciata. Labellum album nunc macula purpurea antice. Columna tricolor seu quadricolor brunnea, violacea, alba, basi nunc viridis. —Ecuador. *H. G. Rchb. f.*

STOCKS FOR ROSES.

IN reverting to the consideration of this important part of Rose culture, it is not unnatural to inquire why it is that experiments have not been made with seedling Manettis as well as with seedling Briers. Whatever improvement has been made in the last named as stocks (in my opinion chiefly owing to the influence of superior cultivation) would no doubt be paralleled in the first; at least such is a fair conclusion. It is to be hoped that this hint may attract the attention of experimentalists, to be carried out at the proper season, because for dwarfs, and for general suitability to various kinds of Roses, it is certainly surpassed by none. In buying in Manettis for next year's use it will be well to remember the caution to see that all eyes below the ground line are thoroughly removed before planting. If this be effectually done, the plant is safe from suckers. Nothing can eradicate this tendency in the Brier, which in itself is a sufficient reason for preferring the Manetti, to say nothing of the more multitudinous character of its fibrous roots.

In planting Roses themselves, to be wholly or partially used for stocks, we might employ the pillar Roses for the purpose, particularly where the sorts are strong-growing summer varieties, such as Blairii No. 2, Brennus, Charles Lawson, Vivid, Paul Verdier, and others of cognate origin. By budding these with vigorous perpetuals, pinching off the buds of the continuous sorts at a very early stage, so as not to come into bloom at the same period with the flush of summer flowers, an approximation to a perpetual pillar Rose would be made. Jules Margottin (possibly rightly) has been described as a perpetual Brennus. Looking at the matter from the standpoint of similarity of habit, either of these ought to make good stocks for all of the less robust perpetuals of similar strain, indicated very greatly by the elongated sepals beyond the tip of the bud, much resembling in form that of the Moss. Baronne Prevost again has very distinct characteristics in its growth, and would form a stock for many kinds. Madame de Cambacères, H.P., and Duchesse de Morny, might also be brought under trial; indeed there are hosts of fine old varieties that are worthy of being brought under trial, which it is the object of these papers to induce.

It is a confirmed opinion with the writer, as already hinted at, that worked Roses most frequently fail from an ill-assorted union being attempted by the propagator. An incompatibility of temperament, if not of temper, exists between too many of the parties to the enforced yoke; the one thrusts out the other in disgust, or the other takes itself off in despair; either way the plant, as such, is brought to naught. This might probably be avoided by exercising great care in the constitutional assimilation of stocks by varieties.

In carrying out this view, it must be recollected that multiplying plants by means of grafts or buds is a very different affair in radical principle to that of producing new varieties from seed by combining through crossing the qualities of different parents. It is probable that the sap of species in the vegetable differs in certain constituents as much as the blood does in the animal creation, though the general elements are the same. Bearing this in mind, the absurdity of uniting a weak slow-growing variety to a vigorous and copious assimilator of sap becomes at once apparent. These ideas are not laid down dogmatically, but as suggestions for careful thought by the pioneers in a pursuit which, after all, contains scientific considerations as well as mere amusement.

I was particularly struck with the difference in the constitutional idiosyncracies of Roses, during the past summer, at a visit I paid to Waltham Cross. There were several rows of such old varieties as Paxton, Jacques Lafitte, Anna de Diesbach, and others, growing in the same soil, under the same conditions and treatment, in juxtaposition with many of more recent date. The first were full of vigour, their branches long, stout, and free; the second were puny samples. All were on similar stocks. This struck me as a patent illustration of the incongruity of the principle of budding dissimilar habits upon one kind of stock. In the present stage of our knowledge it may be necessary to practise the system for trade exigencies, but for them alone; meanwhile, let patient experiment, the parent of discovery, be pursued till we light upon a more scientific mode of procedure. I venture to think this may be found in the study of affinities in the line indicated. The weaker may perhaps be strengthened by union with stronger varieties of species, or of cognate origin, but not with those in many points entirely diverse; at least, such is my opinion. *W. D. Prior.*

HARDY STONECROPS: SEDUMS.

(*Continued from p.* 658.)

‡‡ Flowers lilac or white.

33. S. PULCHELLUM, Michaux, Fl. Bor. Amer. i., 277; Gray, Manual, 172; Mast. in Gard. Chron. 1874, ii., 552; Hook. Bot. Mag., t. 6223.

Glabrous. Branches slender, trailing, or ascending, 3—6 inches.

Leaves in several rows, linear, terete, pointed, gibbous at the base, scarcely ½ inch long.

Inflorescence a 3—4-branched cyme, with erect flowers crowded in two rows along the upper surface, and each provided with a leafy bract.

Flowers ½ inch diameter, rosy-purple.

Sepals linear-oblong, ⅛ inch.

Petals lanceolate, acuminate, half as long again as the sepals.

Stamens of unequal length. Anthers orange-coloured.

Carpels greenish, as long as the stamens. Scales small, emarginate.—Fl. July.

S. pulchrum, DC. Prod. iii., 403; Don, Gard. Dict. 3. 116.

United States.

A very handsome species, too little known. Its forking cymes of rosy-lilac flowers render it very attractive on a rockwork or in a border (see fig. 114, There is a white variety described in American books.

†† Leaves blunt at the tip.

‡ Flowers yellow.

34. S. ACRE, Linn. Sp. Pl., ed. 2, 619.

Glabrous. Barren stems creeping branched, about 2 inches, slender cylindrical, rooting near the base. Fertile stems erect, 2—3 inches.

Leaves minute, ⅛—¼ inch long, crowded (⅛), thick, conical obtuse, gibbous at the base, those on the flowering stem scattered.

Flowers numerous, yellow, ½ inch in diameter, in 2—5-forked, one-sided cymes.

Buds conical, elongated.

Sepals like the leaves, half the length of the petals.

Petals lanceolate, spreading.

Filaments nearly as long as the petals, slender, yellow, anthers minute, yellow.

Carpels elongate, style short, ultimately spreading to form a star-like fruit. Scales whitish.—Fl. Summer.

DC. Plant. Grass., t. 117; DC. Prod. iii., 407; Eng. Bot., t. 839.

Syn. S. pallidum of some gardens, a large form with paler yellow flowers, not the S. pallidum of Marsh. Bieb. Europe, Northern Africa.

This is the commonest British species, growing on walls, rocks, hedgebanks, inland or close to the sea. In cultivation it makes an admirable plant for carpet bedding, for edgings or for covering bare places. It will grow almost anywhere, and is on that account a good plant for towns, and may often be seen on the window-sills of London alleys, which it invests with a look of cheerfulness otherwise too often wanting. Its bright fresh green is always welcome and its sheets of golden flowers are nothing short of gorgeous when seen in masses. It is one of the commonest, least considered of all plants, but very few have really higher claims to notice. The leaves have an acrid taste, whence the common name of Wall Pepper. In cultivation there are two or three varieties which are worthy of notice,

Var. *aureum*.—Leaves and shoot-tips bright golden-yellow in spring. = S. acre var β, Haworth, Synops. Pl. Succ. 1812, p. 120.

This is a charming variety, admirably suited for spring bedding or for giving colour at a dull time of the year. As summer comes on it loses its yellow tint, and is never quite so robust as the green form.

Var. *elegans*.—In this form the tips and young leaves are of a pale silvery colour. It is not so effective as the var. aureum, and is much more delicate.

Var. *majus*, Mast.—Larger and more robust than the type. Leaves in seven rows, closely crowded, thick, deltoid-ovoid, scarcely auricled at the base, flowers ¾ inch diameter in a two-parted cyme, with a central sessile flower, cyme branches recurved, one-sided. Buds conical. Sepals linear-oblong, slightly gibbous at the base. Petals twice the length of the sepals. Stamens 10, glabrous. Anthers yellow. Carpels glabrous, cylindric at first, erect. Fruit not seen. Scales white, emarginate. Morocco, mountains, S.W. of Tetuan. Coll. ill. Maw.

This is a very distinct variety, perhaps even deserving of specific rank. Mr. Ball, however, in his *Spicilegium Floræ Marocanæ, Journ. Linn. Soc.* xvi., p. 453, 1878, though he speaks of having seen a specimen from Mr. Maw, does not separate it from typical acre. I am inclined to think that so acute a botanist cannot have seen the variety in question, but only ordinary acre, or perhaps he only saw a dried specimen, in which the characters are not so obvious. At any rate, in cultivation the form above described is abundantly distinct.

35. S. SEXANGULARE, Linn. Sp.

Glabrous. Barren shoots ascending, 2 —3 inches, branched. Fertile stems erect, 2—3 inches, very slender. Leaves densely crowded in 6—7 rows, spreading or ascending, each about 2 lines long, linear-cylindric, slightly gibbous at the base.

Inflorescence a 3—5-branched umbellate cyme, 1—3 inches across, with scorpioid one-sided branches. Flowers yellow, ½ inch diameter.

Sepals linear-oblong obtuse,

Petals ⅛ inch, double the length of the sepals, lanceolate.

Stamens as long as the petals, or shorter.

Carpels smooth, diverging when ripe. Scales pale retuse.—Fl. July.

Europe, Britain.

Eng. Bot., t. 1946.

Syn. S. boloniense, Lois. Not., 71. S. Forsterianum, Rchb., Ic. 9, f. 1135. S. pulchellum of some gardens, not of Michx.

This is a neat-habited species, answering well for carpet-bedding purposes. It varies in size, and occasionally the leaves are recurved. The specimen in Linnæus' herbarium under this name is S. acre, according to Mr. Baker. In Hooker's *Student's Flora* the species is not considered as a true native. On what grounds this conclusion is arrived at we do not know. We found the plant apparently wild and in profusion on the beach at Hythe, in Kent, last autumn.



Fig. 114.—Sedum pulchellum. Flowers pale violet-rose. (See p. 684.)

36. S. HILDEBRANDI, Fenzl, Verh. Bot. Zool. Wien, 1856, p. 449.

Glaucous.

Leaves ⅛ inch, densely packed, linear, turgid, subulate, erecto-patent, longer and narrower than in S. acre.

Cyme branches ½ inch.

Sepals lanceolate.

Corolla ⅜ inch, petals lanceolate acute, bright yellow.

Stamens rather shorter than the petals. Anthers globose.

Carpels yellow, as long as the stamens.—Fl. July. Hungary.

We have not seen this species, and are indebted for the above memoranda to Mr. Baker. The plant so called in many nurseries is S. sexangulare, or S. lydium.

‡‡ Flowers white or pink.

37. S. GLAUCUM, Waldst. et Kitaibel, Pl. Rar. Hungar., p. 198, t. 181.

Glaucous. Barren shoots 2 inches, branched.

Flower-stems 3—4 inches, reddish.

Leaves densely crowded, about ¼ inch, linear, greenish grey, becoming reddish, studded with fine hyaline pimples at the tips.

Cymes 3—7-branched, umbellate, branches spreading, slightly pilose.

Flower-bud 5—6-angled, 5—6-furrowed, ovoid-acuminate.

Flowers 6-merous, ½ inch in diameter, pinkish white.

Calyx-tube shallow, cup-shaped, sepals deltoid, acute.

Petals oblong, narrrowed at the base, prolonged at the apex into a long sharp point, 1-nerved, nerve prominent on the under-surface and pink.

Stamens 12, all inseparate from the base of the flower; anthers purple.

Carpels oblong, pinkish, pilose, with a long style, erect, ultimately spreading; scales retuse, pale.—Fl. July.

Rchb. Pl. Crit., t. 1137; Boiss. Fl. Orient. ii., 789; Dillen. Hort. Eltham, t. 256, fig. 332.

Syn. S. hispanicum, Linn. Sp. 618; Jacq. Austr. 5, p. 54, tab. app. 47; Aiton, Hort. Kew., ed. 2, vol. iii. (1811), p. 114; Haworth, Synops. Pl. Succ. (1812), p. 118; S. sexfidum, Mars. Bieb. Fl. Taur. Cauc. i., p. 354; S. Witmanni of some gardens.

Central and Southern Europe, but *not* Spain.

This is a very pretty dwarf species, largely used in carpet-bedding and for other purposes, for which its neat habit and pretty pinkish glaucous hue render it suitable. It is described in some books as annual or biennial, but we find it truly perennial. In cultivation it does not appear to vary much, but Boissier, who has studied the plant closely in a wild state, describes it as very variable but always recognisable by its 6-merous flowers, pointed petals, &c.

The name hispanicum given by Linnæus is the oldest, but it is inappropriate, as the plant is not found in Spain, and is not mentioned in the most recent work of Willkomm and Lange on the flora of that country. Moreover the name glaucum is that by which it is best known in English gardens. It must not, however, be confounded with the variety albescens of S. reflexum, which is also frequently called glaucum.

As some of the varieties mentioned by Boissier, *l.c.*, are likely to be met with in English gardens, we append their names and synonyms.

Var. *leiocarpum*.—Carpels glabrous.

Var. *eriocarpum*.—Carpels more or less hairy.—S. eriocarpum, Sibth. Fl. Græc., v., t. 449. S. orientale, Boissier. S. hispanicum, β Buxbaumii, Griseb. Spicileg. i., p. 324. S. armenum, Boiss. S. modestum, Boiss. in Pl. Kotsch. *exsicc.*

Var. *bythinicum*.—Carpels hairy; plant provided with sterile shoots, and therefore perennial.—S. bythinicum, Boissier.

This latter apparently is the form most common in English gardens.

Var. *polypetalum*.—Petals 7—9.

38. S. LYDIUM, Boissier, Fl. Orientalis, ii., p. 782; Mast. in Gard. Chron. 1877, p. 521.

Glabrous.

Barren shoots 2—3 inches, erect, reddish. Flowering shoots 4—5 inches.

Leaves crowded, ¼ inch, linear subterete, greenish or red-tipped, auricled at the base, and with numerous fine pimples at the tip when seen with a lens.

Cyme corymbose, many-flowered.

Flowers ⅙ inch in diameter, pinkish.

Buds 5-angular.

Sepals oblong obtuse, reddish.

Petals oblong lanceolate, twice the length of the sepals.

Anthers reddish.

Carpels erect, whitish, with a long style.—Fl. late summer.

Syn. S. lividum, S. pulchellum, S. anglicum of some gardens.

Asia Minor.

A charming little plant for rockwork edgings or carpet bedding.

(*To be continued.*)

BROCCOLI.

EXCEPTING, perhaps, Brussels Sprouts, there is no vegetable so useful, or deserving so large a share of attention as Broccoli; and now that we have that invaluable early autumn variety of Veitch's, there will be no difficulty, except in very severe winters, in having a plentiful supply of either these or Cauliflowers every day in the year. In order to do this, however, there should be a proper preparation of the seed-beds, for, like everything else connected with gardening, and more particularly that part of it relating to the raising of plants, much depends on a good start. If Broccoli is sown thick and drawn up weakly, as is frequently the case, it is impossible for the plants to acquire that strength and hardness of stem so necessary to enable them to produce fine heads and withstand sharp frosts and cold cutting winds. Instead of sowing broadcast in the ordinary way on small beds, it will be found much better to put the seed thinly in drill rows 6 or 8 inches apart, so that they can get plenty of light and air between, instead of being crowded like Mustard and Cress, struggling with each other for room, and becoming etiolated as soon as they are fairly out of the ground. The only excuse most people have for crowding them in the confined limits of a bed, is that they can be the more easily protected from the ravages of birds, but by the use of a little paraffin oil or red lead or carbolic soap as a dressing, these depredators may be put at defiance, and those concerned rest at ease as to the safety of the seed. If either of the above-named liquids are used, there should only be just sufficient to moisten the shell, and as the carbolic soap is of a somewhat adhesive nature, a little dust or dry sand is necessary to get the grains to separate freely. The digging in of a lot of crude rank manure into the ground is a great mistake, as the plants are forced on too fast before there is sun and warmth sufficient to solidify the growth they make, and even at any time the use of highly enriched land for Broccoli is very questionable, causing as it does a too soft succulent habit, which, although in exceptionally mild seasons, may be in favour of increased size, such plethora is anything but conducive to their hardiness, as in severe weather the sap vessels become ruptured, and the after results are a mass of rottenness. Instead therefore of digging a quantity of manure into the ground before sowing, it will be far better to give it a good sprinkling of soot, which is not only a suitable and sufficient stimulant, but is most valuable for keeping off the maggot that causes clubbing, as will also wood-ashes, used either alone or in combination with the soot.

The earliest and best varieties to sow first are Veitch's Early Autumn, Snow's and Backhouse's, the former turning in from October to Christmas, and the two latter following close on till Adams' Early White, Knight's Protecting, and suchlike sorts are ready to keep up the supply. To carry on from then till Cauliflowers come in, there are none equal to Dilcock's Bride, Veitch's Late Spring White, and Cattell's Eclipse, the latter a most valuable old variety, bearing exceedingly close firm heads that are beautifully white and remain compact and fit for use a long time. Not only is this the case, but their stems are so dwarf and woody that they will endure almost any amount of frost, and it is not an uncommon occurrence to find these stand when most other sorts are destroyed. A sowing of the first-mentioned should be made not later than the last week in March, and the middle of April will be time enough for the others, as there is nothing gained by getting them in too early.

The general or almost a common practice is to plant from the beds, but nothing pays better than Broccoli for the trouble of pricking out, as it induces a more sturdy habit, and greatly increases the fibrous roots, which are the most important not only to these but to all other plants. When not pricked out they generally stand much too long for their welfare, and it is surprising how soon they take harm if left to themselves, unless they have much more room than is usually allotted. As the early kinds come into use at a dull time of year they should be planted in a sheltered, sunny spot, where, if necessary, they can either be laid in or receive protection by having some short straw, bracken, or something of that kind scattered among them when severe weather threatens. In cold districts the best way is to dig them up with good balls of earth, and let their stems well down in a leaning direction on some nice south border, where they will be immediately under notice and readily accessible for covering quickly whenever occasion requires. A great number may be wintered in this way and kept safe from harm with but little labour, as may also Cauliflowers, which keep far sounder when so managed than they ever do in pits or frames where air cannot pass freely among them.

To prevent the attacks of maggots at the roots, which in some soils Broccoli are very liable to, it is a good plan when planting to dip them in a thickish liquid made of lime, soot, and clay, which will be found to have the desired effect. Much difference of opinion exists as to the desirability or otherwise of trenching or breaking up land previous to putting out the plants, but much depends on the nature of the soil one has to deal with, as that which is shallow and poor requires very different treatment to such as is of a loamy character resting on a cool, moist bottom. In a garden of this description, Broccoli may be grown thoroughly well without any preparation whatever beyond a surface-stirring with the hoe to destroy weeds previous to planting, and this is the practice pursued by some of our best cultivators, who assert, and very truly, that when so managed the plants are altogether more compact, and better able to withstand the vicissitudes of winter. Such a system of planting where it answers is an immense saving of labour just at a very busy season, and with a little forethought it can always be managed to have them succeed some other non-exhaustive crop, as, for instance, any of the roots, the earliest sown Peas, or, better still, any of the Strawberry plantations that are to be destroyed when the fruit is gathered. All that is necessary is to push away the litter so as to admit the point of a crowbar with which to make the holes, and if these are filled in around the roots by casting a handful of fine soil, and the same washed down by water poured through the spout of a pot, the plants will soon start away freely. In dry hungry soils the best way is to trench the manure in low down, and before planting to make it as solid as possible by well treading; but in all cases the rows should be at wide distances apart, and where land is prepared by deep cultivation it is a good plan to grow at intervals of 4 feet and have a row of Potatos between. These being cleared off early, an abundance of light and air are admitted just at the time they most need it to harden up and consolidate their growth. Plants so favoured will scarcely require the additional care of heeling in for the winter, although this is a practice much to be commended with a portion of the crop, as when so treated the winter must be exceptionally severe if they then receive injury. Having much less of their stems exposed, and being brought so near the ground, their leaves help to shelter and protect each other instead of falling away as they would otherwise do, leaving the hearts bare. The check caused by the operation is likewise in favour of increased hardiness, and therefore it has much to recommend it, especially when the plants are over robust. *J. S.*

THE ANNUAL ROOT SHOWS.

IT was, we believe, Messrs. Sutton who first conceived the idea of exhibiting to the public the best specimens of root crops and other cattle food from seed of their own selection and production. Prizes offered to their customers soon collected the requisite number of specimens of all kinds—Swedes and Mangel Wurzel, Kohl Rabi, and field and garden produce of various kinds; and large numbers on a Reading market day assembled to inspect and to admire. Their exhibition now—on the floors of enormous warehouses, galleries, and the various departments of their extensive premises — is in wonderful contrast to those which we remember of twenty years ago; and their example has long been widely followed.

The entries were this year so numerous that only six roots were exhibited of each, in place of the twelve that had been sent. The Globes and Long Red Mangels and the Tankards and Intermediates were astonishingly fine. The collection competing for a 20-guinea gold cup was really extraordinary, and the two between whom the decision lay, united enormous quantity with really admirable quality. The Swedes exhibited, as was to be expected, great variety. The principal awards were given to good quality along with sufficient weight. The common Turnip classes, Green and Purple-top Globes, Greystones, and White and Yellow Tankards were large classes of good roots. The yellow-fleshed Globes of greater variety of size, and Tankards a small class of very various quality. The special classes for roots from sewage farms were the most surprising and among the most interesting in the whole show, for the admirable quality as well as great size of the roots, chiefly Mangel Wurzel, which they have sent. Indeed the Reading Sewage Farm could this year have covered the great floor with roots of uniform excellence, combining size and quality in a way leaving nothing to be desired. We saw cartloads outside of Globe Mangels and Kohl Rabi, and were told that the crop was this year an extraordinary one, as indeed we are quite ready to believe it must have been. There was a fine collection of garden vegetables, Potatos, Onions, &c., and a capital competition among gardeners for displays of ten or twelve sorts in each exhibit.

Messrs. Carter & Co., of Holborn, were among the earliest to adopt these annual shows, and first at the Crystal Palace, and latterly in the galleries of the Agricultural Hall, an enormous display has been annually exhibited, which is this year supplemented by something quite unique in the rugged masses they present, in the shape of a Canadian contingent present at the review, a lot of enormous red Mangel Wurzels from Messrs. Carter's seed, weighing more than 50 lb. apiece. Here, too, are admirable classes of Long Red, Globe, Tankard, and Intermediate Mangels. Nowhere have we seen such fine Tankard Mangels. One set of roots exhibited by Mrs. Morten, of Rickmansworth, with coarse neck, were of such extraordinary weight that the firm have given an equal 1st prize, and that although they had been passed by the judges. In Swedes, too—a very large collection of admirable roots—the prizes went to well-formed, clean, and neat roots, by no means of the largest size. In smaller classes of Turnips, in admirable classes of Kohl Rabi, and in extensive classes of single roots, Messrs. Carter have also had a splendid display. White Carrots and Parsnips were most admirably represented. In the class of single roots, in which they are alone among root shows we have seen, the spectator had an opportunity of studying perfect form and maximum weight more easily than he can when comparing separate dozens with each other. And, certainly, in both Swedes and Mangels the show has been very fine. The sewage farms here, too, sent up a very fine display. And Canada, as we have said, has sent a most robust and astonishing collection. The show of Potatos and Onions was very fine, and the garden competition, too, most admirable.

Messrs. Webb & Co., of Wordsley, later on the scene, have sprung full-grown into the competitive arena. And though this was only their third or fourth annual show, it already vies with all in the extent and quality of the display. This year they removed their many hundred specimens to Curzon Hall, Birmingham, and on the raised platforms and on the floors there were an immense collection of all kinds of farm produce, containing at least one specimen—a Long Red Mangel of perfect form, weighing over 61 lb.—which excels anything we have seen elsewhere. The specimens were placed in the order of their arrival, without any attempt on the part of the firm to give preference to any. The name of the exhibitor was placed under one of the roots, and was not seen until the award had been made. The classes of long Mangels were especially fine—Swedes rather more necky than usual. Tankards and Globe Mangels very good. Kohl Rabi first-rate, Turnip classes small in number and various in size—Cabbage enormous—Carrots and Parsnips very good. Potatos most beautiful, Onions very good. A most various and abundant supply of Gourds of all kinds and sizes; and a capital display, in which Messrs. Webb stand alone, of their admirable Wheats, Barley, and Oats.

Messrs. Harrison & Sons, Leicester, held their ninth annual exhibition on the 28th, when a splendid collection of between 2000 and 3000 specimens of Mangels and Swedes alone, from all parts of the country, and grown exclusively from their seed, were exhibited. The roots were admirably arranged upon raised benches slightly sloping to the front, which showed them off to the best advantage. The show was visited by over 5000 people. In the class for twelve roots of Harrison's Normanton Globe Mangels, Messrs. Harrison stipulated that they must be drawn from a crop of not less than 2 acres. This brought competitors to the number of forty-eight, and many of the lots were remarkably fine. The class for twelve roots of Harrison's Normanton Globe

Mangels brought together a quantity of very large examples, including a very fine lot grown by Mr. Thos. Stirton, farm steward to Sir R. Sutton, to whom the silver cup was awarded. The class for Harrison's Giant Long Red Mangels was well contested, the number of competitors being nearly double that of last year. Next in interest to the Mangels came the Swedes, and, although not quite equal to last year, there was a large competition for the silver cup and other prizes offered. A fine collection of Potatos, Onions, Carrots, Cabbages, &c., was shown in the seed warehouses, but not for competition. *Condensed from the "Agricultural Gazette."*

CRASSULA RAMULIFLORA.

Cape plants have become rather scarce in our collections, and if an old, perhaps long forgotten, representative of that flora turns up again, it is with a double satisfaction that we hail it. I enclose a flowering branch of the above-named species of Crassula, which I discovered by chance at a small provincial show. Very likely I should not at all have noticed the plant if it were not for the curious spiral twisting of the flower-stalks, which struck me at once, and which Professor Ascherson considers as an interesting monstrosity. Inspector Bouché, from Berlin, states that this phenomenon is not reproduced constantly by cuttings, nevertheless I shall try if I am more fortunate. I do not know if this species is cultivated in England; if not I am quite willing to distribute next spring small plants of this pretty Cape plant. *Ed. Goeze, Botanic Garden, Greifswald.* [The stem is so twisted as to bring all the leaves and the flowers in their axils into one continuous spiral line. Eds.]

ORNAMENTAL TREES AND SHRUBS.

In the home nursery of Messrs. T. Bunyard & Sons, which occupies a gentle slope on the Kentish hills, and has a soil suited to the growth of many plants of a reputed tender character, a good study of many fine things in the way of ornamental trees is afforded. Like other nurseries in close contiguity to busy and growing towns, it is being gradually encroached upon by the builder, and possibly before many years are past these ornamental trees will have to be removed. Planted years ago when many of the subjects were new to English gardens, they have established themselves, and a record of them may prove of service now that planters will be busy, and many a new garden will be designed and laid out, and old ones improved in some of their details.

Aralia japonica, recently figured in the *Gardeners' Chronicle*, is an imposing plant, with its bold pinnate spineless leaves, and large clusters of white flowers, having quite a tropical appearance. Aralia spinosa is flowering now: it is supposed this particular specimen was planted on this spot fully sixty years ago; it has large deeply divided leaves and a spiny stem, and blooms best in a warm soil. A variety of the purple-leaved Birch obtained from the Continent has leaves of a bright bronzy purple colour, and is very effective. Cripps' variety of the golden Catalpa was very fine, taking on its best character at this time of year; it is a tree that does well in most soils, but a warm early one suits it best. Ceanothus rigidus was doing remarkably well in the open, grown as a shrub, its slate-blue flowers opening early in April, when it is an extremely pretty subject. It is a very effective decorative plant grown in this way. Catalpa Bungei must not be passed over: it has a peculiar close growth and good leaves, matching well with the mop-headed Robinia umbraculifera, and therfore suitable for geometrical gardens.

Some of the forms of Cerasus are particularly noticeable. A single-flowering variety, known as rosea pendula, blooms in the beginning of April, freely producing fleshy pink flowers. A variety of the Chinese Cherry, known as Watereri, is also very attractive at the proper season. The Mahaleb is also noticeable for its distinct foliage, and for flowering early—before the ordinary Cherries. What a fine old shrub Euonymus europæus is, and the variety of it known as latifolius is to be commended. At this season of the year the rose-coloured seed-pods open, and show the orange-coloured seeds; and when well covered with these is a handsome subject, and quite an object at this time of the year. Hedera helix maculata is a striking object grown as a pyramid when its foliage is well variegated. A good example of it was growing by the side of a flourishing plant of Bambusa Metake, and formed a pretty piece of accidental grouping. The Bambusa is quite hardy, and it is recommended that it be taken up and divided now and then to prevent it from flowering, as its decorative beauty lies in its foliage, not in its flowers. What is known as the Golden Tree Ivy makes a capital shrub, and is a very pretty object dotted about, especially in spring-time. Helleborus fœtidus was to be seen in quite large bushes, but its value lies in its suitability for planting under the trees quite in the shade; in this position it has been found to do remarkably well. Polygonum Sieboldi somewhat resembles a Spiræa, and flowers with great freedom and in all directions from the leaf axils; it is a valuable ornamental flowering shrub. Van Geert's Golden Poplar is very good, taking on an excellent golden colour at this season of the year. Rhus Cotinus in a large state is a very handsome subject in autumn, and richly deserves a high place among ornamental trees. Rhus glabra laciniata comes into use in the place of Fern foliage; the sprays are very handsome, the red leaf-stalks matching so well with the green foliage. Rhus Obeski is very fine, having foliage of a very ornamental character, but to have it in good condition it should be cut down annually like Fuchsias. A golden leaved Acacia, obtained from the Continent, was very good. The fine old Salisburia adiantifolia must not be overlooked, as it was a conspicuous object among other plants. It is a plant that grows somewhat slowly when young, but after reaching a certain stage progresses much more rapidly. A Thuja labelled Lawsoni lutescens is A 1 among golden Thujas; it keeps its colour all the year round, and promises to be a valuable plant for spring bedding. Thuja Lawsoni albo-spica has a very pretty variegation also, and may be pronounced very good. Thuja lutea is also good, but not equal in effectiveness to the first-named. Quercus glabra deserves notice for its effectiveness as an evergreen in a shrubbery border, as also for service as a single specimen on a lawn.

It would not be difficult to extend this list, as there are many other subjects of an equally valuable character. The foregoing list serves to illustrate the material nurserymen are found gathering together to gratify the taste of those having a taste for fine effects in pleasure-grounds, and valuable additions are annually made to what is already possessed. *R. D.*

POT VINES.

In many private gardening establishments the culture of pot Vines for early forcing is preferred to forcing permanent Vines that have been planted out in the usual way. It is certainly very exhausting to Vines to be forced year after year to ripen at the end of April or early in May, and my experience goes to prove that the Vines, if they have been fairly well cropped, become almost worthless in the course of ten years or less. If the Grapes are not required until the end of May the strain upon the Vines is not nearly so great. The main difficulty is to keep the leaves in good health after the fruit is cut and until it is time to prune the Vines in September. The leaves are not of sufficient substance to stand the early summer heat and if they suffer the Vines are certain to start into fresh growth, which is also injurious. Early forced Vines will not be exhausted if the leaves can be kept in health until the end of August.

I am not sure but another cause of exhaustion in early vineries is in the custom of covering the outside and inside borders with fermenting material. I can speak from experience as to the use of stable manure both outside and inside the houses as a fermenting material. This heats violently for two weeks or less, and then as rapidly cools down, causing a certain variation in the temperature; and I do not think that violent heat is desirable, especially when the roots are quite close to the surface. Rather let the outside borders be covered with dry oat straw and keep it dry by placing wooden shutters over it. The borders should be watered with tepid water before putting the straw on. In the opinion of many persons pot Vines give the best returns for the money expended, if the Grapes are wanted from the last week in March until the end of May. But, to be successful, it is necessary to have strong canes well ripened early in the autumn. It may be as well to give the system of culture pursued from the first. Many persons purchase the Vines, but they are expensive, and it must be owned that it costs a considerable sum to grow the Vines under any circumstances. I have grown the Vines from eyes put in about the first week in January, or from weak Vines of the previous year cut down and started a fortnight later. When it is intended to grow from eyes the same season (and I rather prefer canes raised that way), time is everything. They must be grown on from the first without any serious check, and to secure this it is best to pot the eyes singly in 60-sized pots; use good turfy loam with a little sand to start them. The temperature of the house at night should be about 55°, and the bed in which the pots have to be plunged is 85°; and let there be no mistake in this—if the test thermometer gives 85° a foot or so below the surface it will be under 80°, perhaps not more than 75°, at the surface where the pots are plunged. After the above conditions have been secured, success or failure depends upon the care with which the whole of the cultural directions are followed out. The compost, for instance, used to pot the eyes should be moderately moist, so that it will not be necessary to water until the young growth appears above-ground. If the soil is so dry that it is necessary to water it, it is very probable that many of them will rot off before they appear above-ground. When growth has commenced water must be applied with caution until plenty of fibrous roots are formed. The first roots formed are thick, and strike out at right angles from the stem and speedily rot through a slight excess of moisture. When the small pots are filled with fibrous roots it will be time to shift the young Vines into 6-inch pots, and for this purpose I again recommend turfy loam to which has been added some crushed bones. It is a question whether it is best to plunge the pots into bottom-heat again or to simply place them on the surface of the bed. It is best, I think, not to plunge them. The best canes I have ever seen were grown without bottom-heat after being potted the first time. They were placed on a wooden stage or framework at the back part of a half-span Pine-house. The temperature was 65° at night till May, when it would be 70° or more as a minimum, and, with plenty of atmospheric moisture, the growth was amazing, forming short-jointed canes of considerable thickness, and the wood was generally well ripened. The only compost I have used and that has given satisfaction for fruiting Vines in pots has been pure turfy loam. That obtained here has been a pasture for cows and horses for a quarter of a century, and requires no manure except the crushed bones, of which I use about one 9-inch potful to each barrow-load. I am able to get the top layer of turf with about 2 or 3 inches of soil, and this if laid up in a heap for about six weeks will be sufficiently decayed. I repot from the 6-inch pots into 8 and 9-inch, and like to repot again into 11 or 12-inch pots, which are the best size in which to fruit them. I use plenty of drainage and place some turfy loam over it before putting in any of the soil. The turf I tear up by the hand and in potting the soil is rammed in rather firmly with a wooden rammer. Water freely when the Vines have drawn roots and syringe twice a day at least, and in very hot weather three times a day, I never use manure-water, nor is any dressing of manure placed upon the surface. When the canes are full grown and the wood shows signs of ripeness, water must not be applied quite so freely, but it would be a mistake to let them suffer for want of it at the roots. We still want the eyes to plump up, the incipient bunch of Grapes must be formed at the axil of each leaf, and this will take at least six weeks after the wood is brown. When fully ripened the resting period has come, and this ought to occupy at least two months, and I like to have the canes shortened and the lateral growths cut off six weeks at least prior to starting them. We will suppose that time to have arrived—say it is the last week in October. A bed of tan, leaves, or manure should be prepared, and if the temperature at the depth of 1 foot does not exceed 85° the pots may be plunged in it. The canes should be twined round three sticks placed in the pots with the point of it well down so that the buds may break regularly throughout. Start with a temperature of 50° at night rising to 60° by day; the Vines should be dewed over with the fine spray from a syringe—they will soon start, and when this has taken place increase the temperature, and it may also be necessary to remove some of the buds. The bottom-heat will decline in the course of a month, but this will be gradual and it is best to let it be so. Its purpose has been served by causing a more regular break than would otherwise have been possible. Syringing is discontinued after the Vines are in leaf, and moisture is produced by evaporation from the troughs, and by damping the walls,

paths, &c. As soon as the roots are in active growth raise the temperature to 65° at night, and do not exceed this for Black Hamburgh, Sweetwater, Museadine or Frontignan Grapes. Muscat of Alexandria would require the house to be kept to 70° at night, with a proportionate rise by day, which would be 5° more in dull weather and from 10° to 15° more in sunshine.

I use manure-water whenever roots are being formed abundantly, but that is not until the fruit is set. A good plan is to place some rich dressing on the surface of the pots, this dressing may consist of rotten manure and good loam in equal portions. If this is done manure-water may not be used, but at least three dressings should be applied, the last one just before the Grapes take their second swelling, that is, after stoning is completed. As soon as the fruit is ripe it will be cut, but that portion of it required for succession must be kept in a house which is drier and more airy that than in which it has been ripened.
J. Douglas.

THE ARBUTES.

JUST at this season planters are considering what to plant, while dull flowerless days and approaching Christmas decorations are suggestive of berries. We may, therefore, be doing a service to some in calling attention to the genus Arbutus as furnishing evergreen shrubs, elegant in blossom, bright in the bark, and, in some cases, brilliant in the fruit. Moreover, there is a classical interest about them which adds to their attractiveness. The species or varieties to which we intend to allude in these present notes are the common Strawberry-tree, Arbutus Unedo, A. Andrachne, A. Menziesii, or, as it is generally called, A. procera, and A. hybrida. There are other species, but they are not so important for garden purposes. What the Latin authors meant by their Arbutus is probably A. Unedo, or it might have been A. Andrachne. Virgil tells us that the weaned kids were fond of browsing on the Arbutus. Young goats in a general way are not very particular on this point. But the most puzzling thing is as to the explanation to be given to Virgil's lines (Georg. ii. 69) "*Inscritur vero et nucis Arbutus horrida fœtu.*" Martyn translates this, "But the rugged Arbute is ingrafted with the offspring of the Walnut tree." A more recent translator, a good gardener too (R. D. Blackmore), renders it, "But nuts are grafted on the rough Arbute;" and another has it, "But the prickly Arbutus is grafted with the Walnut's offspring." Martyn further tells us that the term "horrida" refers to the bark. It may be so, but we should rather apply it to the prickly fruit. But this is a trifle compared to the engrafting either the nut or the Walnut on the Arbutus. We own we are unable to realise the idea.

A. UNEDO, the commonest species of those we have enumerated, is found in Southern Europe, and is also a native of South-Western Ireland.

In this country it usually forms a large shrub rather than a tree, with glabrous, obovate-oblong, saw-toothed leaves, the leaf-stalks, like the young shoots, being more or less pilose. The flower panicles are bent downwards, and bear numerous flowers rather larger than those of the Lily of the Valley, but urn-shaped, contracted near the throat, waxy white, suffused with pink. These flowers are succeeded by the berries (see fig. 115) superficially like Strawberries, but really widely different in structure. The little spines by which the fruit is beset are sharply pointed. The fruit takes long to ripen, so that it is not at all unusual to see the flower and the fruit on the tree at the same time. In this country the berries are insipid, and though in Italy we have partaken of them at the dessert-table, candour bids us say that they are more grateful to the eye than to the palate. Many varieties are found in the nurseries, varying in the breadth of the leaf, the degree of hairiness, and so forth, and there is one double-flowered variety interesting as to structure, but as it produces no berries it must rank as inferior to the ordinary form.

This species is probably the most hardy of the whole. It is only in very severe winters that it is hurt in the South of England, and even then it is not usually irreparably hurt. How far north it can be grown we do not know, but some correspondent may perhaps be good enough to tell us.

A. ANDRACHNE, Linn., is a more tender species than the foregoing, but still there are good-sized trees of it to be seen. Its leathery leaves are quite glabrous and quite entire, or sometimes serrate. The flower-panicles are erect, but our summers are rarely, if ever, hot enough for the fruit to be produced. We have only seen green specimens of the fruit, and in them the tubercles by which the fruit is studded are flattened at the tips, not pointed as in Unedo. The old greyish bark peels off in large flakes as in the Plane, revealing the younger bark beneath, which is at first green but ultimately becomes of a rich red colour, so that a tree of this kind lights up a shrubbery very effectively. The flowers are produced in spring, and resemble those of the preceding species. A. serratifolia is a slight variety of this species.

A. HYBRIDA.—This is a charming species or probably hybrid variety, combining the characteristics of Unedo and Andrachne. It has deciduous bark like the latter, and flowers earlier in the spring. The leaves are oblong-acute, serrulate and glabrous. An excellent figure of this plant was given in our columns on February 16 of the present year, p. 211, fig. 37. It is the A. andrachnoides of Link, and is not unnaturally supposed to be a hybrid, but we are not aware whether this was produced artificially or by accident. We do not know the species or variety at all in a wild state, so the presumption is that it originated in gardens. It is figured at t. 619 of the *Botanical Register*. × A. Milleri is stated to be a cross between the same two species.

A. MENZIESII, Pursh.—This is a Californian species, better known by the name of A. procera. It was introduced by Douglas, and is figured in the *Bot. Reg.*, t. 1753. A. laurifolia of Lindley, in the same publication, t. 67, is a smaller-leaved form of the same species. Gray, in Brewer and Watson's *Flora of California*, speaks of it as a handsome tree with very hard wood and red bark, flaking off as in A. Andrachne; others speak of it as a "most princely tree." The leaves are oval or oblong, entire or serrulate, pale beneath, bright green above. The panicles are dense, the flowers almost globular, white, succeeded by orange-coloured berries.

In this country it rarely grows beyond a bush. One of the finest trees of the kind is or was in Mr. Rogers' beautiful nursery at Southampton. Generally speaking, it forms an evergreen shrub with fine glossy foliage and delicate greenish white flowers. The tubercles on the fruit in native specimens are flattened. We are not aware whether it has ever fruited in this country, but as it is rather tender we should rather doubt it.

In addition there are A. intermedia, native of Greece; A. canariensis, of the Canary Islands; A. macrophylla, with downy leaves, from Mexico; A. varians, and A. densiflora, also from Mexico. We do not know if either of these is in cultivation. In garden catalogues also we find the names of A. Croomii, A. photiniæfolia, and A. Rollissoni; but we have no specimens at hand to compare.

Foreign Correspondence.

HOBART TOWN, TASMANIA. — In April, 1875, during a visit to Hobart Town, Tasmania, I visited the gardens of the Royal Society, where I met and went over them with the able director, Mr. F. Abbott. The present extent of the gardens consists of 25 acres, of which about 20 are under cultivation; the income of the gardens only amounts to the annual sum of £400, and realises by the sale of fruit, flowers, &c., about £100, and the prison labour given by the Government is calculated to be worth £150 a year. It is surprising to me how the garden can be so well kept stocked with valuable plants, all arranged in beautiful order, on so small a sum and opened gratuitously to the public.

I will now proceed to describe some of the trees and plants which I noticed, or to which my attention was more particularly directed by Mr. Abbott. On entering the gardens I observed a fine American Hickory (Carya nigra), about 30 feet high and bearing a quantity of fruit; also a fine Chinese Tree Pæony, or Moutan Rose (Pæonia Moutan), and a brilliant and dazzling row of Pelargoniums, the foliage beautifully variegated with gold, bronze, deep red, and masses of flowers of rich and bright colours. I observed Adenanthos sericea, from Western Australia, and a fine bed of Nerines, all in full bloom. A yellow variety from China (Nerine aurea) struck me as both novel and beautiful. The Argan tree (Argania Sideroxylon) grew in great perfection. This tree was twelve years old and about 8 feet high. It is a native of Morocco and grows in sandy soil. It is a thorny evergreen tree, attaining a moderate elevation of 10 or 12 feet, but the trunk attains a large diameter. The fruit is a small drupe, and the seeds contain a valuable oil. A large quantity of the Argan seeds procured at Barbary were, at the request of the Acclimatisation Society of New South Wales, sent to them by the Governor of Gibraltar in 1865. The seeds were collected by the British Minister in Morocco, Sir John Hay, at Mogadore. The seeds arrived at Sydney in excellent condition, and were generally distributed over the colony, but from some unaccountable cause, although the plants grew but very slowly, they never attained any size or bore fruit, as I saw them in Tasmania and in Adelaide, South Australia. The Hottentot Cherry (Cassine maurocenia) and the Fontanesia phillyræoides, a native of Syria, were very interesting. A singular Araliaceous tree attracted my attention by its remarkable growth and large projecting roots; it was Cussonia thyrsiflora from the Cape of Good Hope; when in bloom the foliage falls from the flowering branch, and when the seeds are mature partially dies, and the seeds drop. There was an evergreen species of Juglans from Mexico, and a choice collection of Hollies, as the Ilex latifolia, from Japan, a very pretty and attractive variety, with red and yellow berries, some with foliage edged with a gold and silver tint, and many other varieties equally beautiful. There was an elegant Genista—the G. monosperma—with drooping white blossoms, very ornamental for table decorations. The Paulownia imperialis, or Foxglove tree, was in seed; it is a deciduous tree, a native of Japan, and grows well and rapidly in the whole of the Southern Australian colonies. It belongs to the Scrophularia family, but bears an outward resemblance to the Bignonias; its leaves are large and broad; the flowers are in terminal panicles, and of a purplish violet colour, appearing in October. The seeds are winged, and contained in a hard, ovoid acuminate capsule. It is a soft-wooded tree, and grows rapidly from cuttings. I have seen it from 10 feet to 20 feet high. It is very hardy, and when in full flower a very showy tree. An interesting tree in the gardens was the Diospyros virginiana, the Persimmon, or Virginian Date Plum, a native of the United States, which attains a great elevation. The fruit is of a light orange colour, nearly round, very astringent in taste even when ripe, but said to be eatable after it has been exposed to the action of frost. The bark of the tree is bitter, and, like all the bitter barks, is considered in popular opinion to possess febrifuge properties. It is considered by American physicians to be useful in cases of cholera infantum and diarrhœa. I was surprised to see so far south the Brachychiton luridum of New South Wales covered by a profusion of its rose-coloured flowers. I also observed Entelea arborescens from New Zealand; the flowers are drooping, of a whitish colour, with a yellow centre, and it is closely allied to the genus Sparmannia of the Cape of Good Hope. It is a small branching tree.

I remarked the following New Zealand trees flourishing in the garden:—The Karaka (Corynocarpus lævigata). The Coriaria sarmentosa, or Wineberry tree, the Tupakihi, or Tutre of the natives; the wine made from the berries of this shrub tastes like Elderberry wine; the seeds are poisonous. Passiflora tetrandra, named Po-hué-hué by the natives, bears orange-coloured fruit, with seeds of a beautiful crimson colour. The Alectryon excelsum, or Tikoti of the natives, grows to a large size. A small but handsome tree was the Aristotelia racemosa, with racemes of pink flowers and black berries about the size of a pea, and eatable. The Aralia crassifolia, Horocka of the natives, was growing upwards of 12 feet high; it is called by Europeans the Fish-bone tree, from the singular form of its foliage; no branches are thrown out, unless the short stalks, from which the tufts of foliage arise in full-grown trees, can be so named. Near it was Brachyglottis repanda, allied to Senecio (the Groundsel tribe); it is a small branching tree, and has a singular white appearance, from its foliage being covered below with a soft, white cottony down, as well as the branches, petioles, and inflorescence; the flowers are yellow. It is the Cineraria repanda of Forster; the name given to me by the New Zealanders was Boka-boka; others give the native name as Rangiora. A slender climbing plant, the Parsonsia albiflora or variabilis, bears panicles of white sweet-scented flowers; and the Cordyline Banksii with its arboreous trunk crowned with long, broad, and linear-lanceolate leaves, and clusters of white flowers, succeeded by white berries, was a very graceful tree. It is named by the New Zealanders

Tiparæ, or Tingahere. A handsome tree is the Vitex littoralis, the Puredi, Puriri or Kauwere of the natives; the flowers are in panicles of a pink colour, followed by obovoid fruit of a bright red. The wood is very hard and durable, and is known as the New Zealand Teak. The Thuja Doniana, which I discovered in 1830, grows to 60 or 70 feet high, with a circumference of 8 to 10 feet; the timber is of a red colour and of an excellent quality either for plant * or spar. It is named Kawaha by the natives of New Zealand.

My attention was attracted to a fine collection of the Berberry family: among them I noticed Mahonia repens, M. Fortunei, M. nepalensis, M. Aquifolium, the sweet-fruited Berberis dulcis, rom the Straits of Magellan; Berberis Darwinii, with its elegant orange-coloured blossoms, and Berberis sanguinea. The whole of these are evergreens. I observed a Judas-tree (Cercis) with yellow flowers, and the Cassia chinensis, covered with a profusion of rich golden blossoms. The Carob-tree (Ceratonia siliqua) was growing luxuriantly, and the handsome Silver-tree of the Cape (Leucodendron argenteum); there was also the Cæsalpinia Tora in fruit, the flowers of which are yellow; and the Olea montana with its crimson drupes. There was a handsome species of Tasmanian Acacia, the Acacia Riceana, and two pretty shrubs—one the Solanum marginatum from South Africa, with white-edged handsome foliage, purple flowers, and large yellow fruit; the other was Witheringia superba, from South America, with a profusion of elegant purple flowers. Among a fine collection of European trees I noticed the common white Birch (Betula alba), the Horse Chestnut (Æsculus Hippocastanum), both the pink and the double white varieties. The Sycamore (Acer Pseudo-Platanus), and the Oriental Plane tree (Plantanus orientalis), the elegant and graceful Weeping Golden Ash (Fraxinus excelsior var. aurea pendula), and the common Ash (Fraxinus excelsior), the Oak (Quercus Robur), Poplars (Populus alba and P. nigra), and the Hornbeam (Carpinus Betulus), were all in perfection. I also noticed the Osage Orange (Maclura aurantiaca), the Agonis flexuosa, with its graceful drooping slender branches studded with small and delicate white blossoms: it is indigenous to King George's Sound, but is extensively grown in our botanic and other gardens in the Australian colonies. I also noticed the Garrya elliptica from California. I admired the Cotoneaster vulgaris covered with a profusion of pink berries, which made it a very ornamental shrub in the gardens at this season of the year, and when planted as a hedge to a garden border and kept clipped to the height of 3 or 4 feet it was exceedingly ornamental. There was another species, also ornamental, the woolly or Quince-leaved Cotoneaster (C. tomentosa).

The collection of coniferous trees was very extensive, and it was interesting to see such a display of fine healthy well-grown trees of that class from various parts of the world. I was somewhat disappointed at not seeing a good specimen of the Huon Pine in its native country, preserved in the gardens, as it is fast being destroyed in its natural state; it is the Dacrydium Franklinii, and its indigenous localities are on the banks of the Huon and other rivers. I saw some young pot plants of this Pine in the nursery preparatory to being planted out, and which I hope will live to become large trees and adorn this very fine pinetum. There was a noble Pinus insignis, a native of California; it was nearly 80 feet high, and was said to be sixteen years old. I found this species and the Aleppo Pine grew very well in all the southern colonies of Australia that I visited. I noticed also the Larch (Pinus Larix), the Norway Spruce Fir (Pinus Abies), the tree from which the Burgundy pitch is obtained; the Juniperus drupacea from Syria, the very handsome rough-branched Mexican Pine (Pinus Montezumæ), the Pinus Pinsapo from Spain, conspicuous from its most beautiful and singular growth. The elegant Maiden-hair tree (Salisburia adiantifolia) was growing luxuriantly, as well as the Podocarpus chilina, Sequoia gigantea of California, and Retinospora obtusa from Japan. The Norfolk Island Pines were very fine, and were from 50 to 80 feet high, as well as the Bunya-bunya (Araucaria Bidwillii), and the Chilian Araucaria (Araucaria imbricata), the latter, although attaining only a moderate elevation, about 8 feet high, and of stunted growth, bore both male flowers and female cones on the same tree, from the seeds of which Mr. Abbott succeeded in rearing 100 plants. Until recently it was believed to be strictly dioecious, and not to bear



Fig. 115.—Fruits of Arbutus unedo. (see p. 688.)

* Described and figured by Sir W. J. Hooker, in the *London Journal of Botany*, vol. i., pp. 571, 572. 1842.

cones until it has attained a considerable size and age. There is a notice of this fact in the *Gardeners' Chronicle*, as follows:—

"A remarkable instance of the provisions of Nature to ensure the propagation of a species is recorded in the *Monthly Notices of Papers and Proceedings of the Royal Society of Tasmania for 1873*. Under ordinary conditions the Chili Pine, Araucaria imbricata, does not bear cones until it has attained a considerable size and age, and the sexes are usually (?) on separate trees; indeed until recently it was believed to be strictly diœcious. However, a plant in the Botanic Garden at Hobart Town, Tasmania, about 8 feet high, but of stunted growth, produced two cones, from which about one hundred seedlings have been raised. The fact is very interesting, not only on account of the smallness of the plant, but also because the sexes are often separated. In this case we have a small isolated plant producing [apparently] both sexes, and ripening its seed. Is this a fact, may we ask, or is it possible that it was fertilised by pollen from another species? The seedlings will furnish the answer to this question in time. It is supposed that this is the first instance of this species bearing fertile cones in the Australian colonies."

There was also Pinus densiflora, and the Thuja pendula from Japan; the spreading-leaved Pine (Pinus patula) from Mexico: it is of elegant growth, and, throwing out its slender branches and foliage, bears a resemblance to a fountain in full play; the Pinus cephalonica, from Cephalonia; the Himalayan Spruce (Pinus Smithiana), the Aleppo Pine (Pinus halepensis), and the Pinus longifolia from the Himalayas. My attention was directed to Torreya taxifolia, the yellow-leaved Torreya from Florida, and the Californian Nutmeg (Torreya myristica); the latter was in fruit, which is at first of a dark green, changing when ripe to a purple colour, and has a powerful Nutmeg odour. The Deodar (Cedrus Deodara) and the pretty and ornamental Golden Thuja (Thuja aurea) from China [?], and the Thuja gigantea from North-west America, which seeds very freely in this country, were all in luxuriant growth; and I observed also the Libocedrus decurrens, which is often confused with Thuja gigantea, and although belonging to another genus, is closely related to Thuja. There was a fine-grown tree of Cupressus Lambertiana from California, and the common Savin (Juniperus Sabina). The Loquat (Eriobotrya japonica), the dwarf Fan Palms, Chamærops humilis from the South of Europe, and Chamærops Fortunei from China, were growing very well. I observed also an elegant Photinia, a genus of Pomaceæ, allied to Cratægus: it was Photinia serrulata, a native of China. It is an evergreen with handsome shining foliage, bearing panicles of small pure white flowers, succeeded by red berries. There was another species, Photinia arbutifolia, from California. This is a mere superficial account of the splendid collection of plants, &c., contained in these very interesting gardens. *George Bennett, M.D., F.L.S., &c.*

The Villa Garden.

CINERARIAS. — Some Villa gardeners may be getting a little uneasy about their Cinerarias, seeing that they are occupying a cold frame. There is little need for fear at present. True the days are dull and cold, and the nights show signs of frost, which ushers in the daybreak; but if the position be a rather warm and dry one, these advantages, with some covering put on at night when it appears likely to be a sharp frost, will keep the plants snug and right for some time to come. A warm position added to a dry bottom is of great advantage to both Calceolarias and Cinerarias. A few days ago we saw some Cinerarias in a cold frame that were remarkable plants, because grown in such a stocky manner. Plenty of air had been given on all favourable occasions, and their comparatively hardy habit would enable them to bear a much lower degree of temperature than is imagined. It is when plants are drawn, weakly and unclean, that cold checks them. As long as they are doing well in a cold frame they can stay there. Chrysanthemums and berried Solanums are now greatly helping the greenhouse display, and there is plenty of time for Cinerarias.

Just now, while the weather is dull, the plants do not require much water; at the same time they must not be allowed to suffer for want of it. This is hitting the happy medium; but it would be difficult for the best constructed sentences to make it clear to elementary Villa gardeners. The Cineraria is a moisture-loving plant; what it simply requires is sufficient water to keep growing healthily. We have alluded to the importance of giving air, but when it is done cold currents of air need not be directed on to the plants. Tilt up the lights on the leeward side, and let the air pass freely into them. If the condition of the frame is one too cold or damp, then the plants should be taken to the greenhouse and put into the coldest part of it, and the plants kept free from insects on the leaves and points of the shoots by fumigation or washing with some insecticide. It is the accumulation of greenfly that troubles amateur gardeners, and if the pest be not destroyed in time the ruin of the plants will surely follow.

CALCEOLARIAS. — These and the Cineraria are almost certain to be grown by any Villa gardener with a greenhouse. Like the Cineraria the Calceolaria is in its proper place at present if in a cold frame, and though a little hardier in constitution it yet requires the same attention. The stronger the plants are now, the better will they winter, if only they be kept clean. When greenhouses are kept shut up close in mild damp weather, greenfly spreads with great rapidity; a few careful fumigations will soon settle them, but no time should be lost in the first instance. As long as the plants are in the cold frame and air is given on all favourable occasions, and water is supplied as required, greenfly will not trouble them much; it is when the plants are housed that the danger from this cause threatens.

CYCLAMENS.—These are often recommended as Villa Garden plants for flowering at this season, but it is rarely bloomed well in a house of mixed plants. Any one with a desire to grow Cyclamens—and it would be difficult to name another plant more winsome and beautiful at this season of the year—should make a speciality of them, and have a small warm house or case in which to grow them by themselves. It is not difficult to manage when it is understood. Very many Villa gardeners have attempted to grow it, and have given it up in despair after repeated trials. At this season of the year Cyclamens in bloom require to be warm and close, for it is obvious they would scarcely be in flower at this season of the year were it not that they had the advantage of the quickening influences of heat. In a mixed house the aim of the Villa gardener should now be to keep it as cool and airy as possible, because many subjects are sinking into their autumn and winter rest, and while the heat required for Cyclamens would unduly and prematurely excite some of these, the cooler atmosphere required for plants needing it would impair the effectiveness of the Cyclamen. All our leading Cyclamen cultivators have houses for Cyclamens alone, where they have them under perfect control. Perhaps, as a rule, Villa gardeners with limited glass accommodation would do well to make specialities of a few things for certain seasons of the year—say the Cineraria in spring, Calceolarias and Pelargoniums in summer, Chrysanthemums in autumn, and Cyclamens and Primulas in winter and spring. A greenhouse in two divisions—one being kept warmer than the other, could with care be made to insure this floral succession or something similar.

Garden Operations.

KITCHEN GARDEN.

In order to make the most of the general appearance in this department, during this uninteresting period of the year, everything which can be done towards such an object should be effected. As soon as the leaves are off the trees let them be collected and removed, and after the pruning is done let the surface soil be turned over about trees and in every other part of the garden where it is practicable. The walks likewise should now also have attention; should any of these require draining, turning, or renewing, now is the time to set about such operations. In the case of edgings where Box is used, should this be getting large and unsightly it should be taken up, divided, sorted and replanted. March and April we know are the best months in which to perform such operations, but at such a time it is often neglected owing to the pressure of other important matters, and we therefore advise its being done now, or at any favourable opportunity; the rest of such edgings should be clipped and put in order as time and opportunities offer.

Proceed with preparatory measures for cultivation in the way indicated in a former Calendar upon this subject. When it is intended to sow Peas very early, the ground if not already prepared should be seen to at once. In selecting a spot for this purpose avoid having ground which has been frequently used for this crop. In many gardens the most suitable positions, namely, the south borders, have been so constantly used for early Peas that failure or an unsatisfactory crop may safely be anticipated. We, therefore, under such circumstances recommend a change to some other spot, even though the position may not be so advantageously placed. Now is a good time to make an early sowing of Peas in places which are elevated and where the atmosphere is dry; under other circumstances there is not much benefit to be derived, and we advise deferring the operation until January. If, however, it is to be done, Laxton's Unique stands preeminent with us for a dwarf kind of early Pea. A spot at the base of a south wall will be eminently suitable for sowing a row of these, and if sown in rows across a border the rows should be about 2 feet asunder. As a tall early kind we like William the First, which should have about 5 feet between the rows. Our early sowing is put in between the spring Lettuce, at 6 feet apart. A breadth of Beans may also be planted in single rows 3 feet apart. If jackdaws or rooks visit the spot where these are sown it will be necessary to protect them immediately they show indications of bursting through the ground. An occasional overlooking of Lettuce beds, also newly transplanted Cabbage plants, will be advisable, in order to keep the plots made up perfect. *G. T. Miles.*

FORCING DEPARTMENT.—When the forcing of esculents is extensively practised there will of necessity be much to be done at this season in connection therewith. For this purpose, if not already done, no time should be lost in getting together a good mass of leaves, with which should be incorporated enough stable manure to generate gentle fermentation. Under these conditions leaves of every description can be got together, even such as those from Plane and Horse Chestnut trees, which of themselves give but little warmth, but without an admixture of other materials decomposition will not be effected. The first year after gathering them this mass should be well mixed together, and fermentation will then speedily ensue, and by this means its condition will be improved and better adapted for immediate use, and the heat which afterwards is excited by being removed will be reduced in force, and its duration prolonged. The provision of these materials, in my opinion, is so essential in many ways that I reiterate my former advice concerning it, and emphatically recommend the practice wherever forcing operations are proceeding. Continue as time and pits fall vacant to make up beds for Asparagus, Seakale, Potatos, Carrots, and Asparagus. This delicious and wholesome vegetable will after this time be much more readily obtained. To ensure having it in good condition it will need to have at least about 70° at the roots, and from 50° to 60° about the tops. Under these conditions it should be aired freely, and good-flavoured grass will be the result. Seakale.—This delicacy is so much superior when cultivated solely under the influence of heat arising from fermentation, that other means should be abandoned. In making up beds for this subject, be careful about having too much heat at the first start. At from 50° to 60° it will develope itself perfectly where forcing is carried out in the ordinary plantations and out-of-doors by means of pots being placed over the crowns, and then surrounded with fermenting matter. Frequent attention should be given to the state of the heat lest it should become too powerful. French Beans.—Keep up successional supplies by making fresh sowings at short intervals. At this season these subjects will require a light place with an abundance of heat, and should be as near the glass as possible. They succeed best in about two-thirds loam and one of decomposed manure and leaf-mould mixed; and for this purpose, as well as for many others in connection with forcing operations, a heap of soil should be provided, and placed where it will keep in good order, from which supplies of it can be obtained as required. As these plants are so liable to be infested with red-spider, syringing should not be neglected. Rhubarb should be well watered as soon as it is introduced into the Mushroom-house or elsewhere, and afterwards be kept moist by copious supplies as needed. Carrots which were sown last month will now be up. Look well after slugs, as if these abound any neglect in this matter will cause the loss of the crop. Put into heat roots of Mint and Tarragon, and Chicory for blanching into the Mushroom-house: pots and boxes will be suitable for such roots. *G. T. Miles, Wycombe Abbey.*

HARDY FRUIT GARDEN.

The exceptionally fine weather with which we have been favoured during the autumn has had a most beneficial effect in ripening the wood of all fruit trees, and as the leaves are now fairly off, planting operations should be taken in hand at once in order that the roots may have time to heal over and form fresh fibres while the soil still retains a portion of its warmth to assist them in doing so. To defer this

kind of work any longer than it can possibly be avoided is a great mistake, as it detracts seriously from the strength of the trees, for although to all appearance they are dormant during the winter they in reality are not so, as the root growth they make then is something considerable. Whether those that are left undisturbed do so is an open question, but that it is the case with all freshly transplanted trees admits of no doubt, and is a fact patent to any one who has ever had to do with the removal of deciduous plants of any description. I have seen striking instances of this wonderful effort of Nature to repair an injury, when I have had trees laid in by the heel, or when from some reason or other trees have had to be shifted a month or two after being planted; and on every occasion I have found them bristling with freshly formed young white rootlets that appeared in the greatest state of activity. Now if transplanting is put off till the turn of the year or later, there is not sufficient time allowed for these to be put forth, before the rapidly-swelling buds are making demands that cannot be supplied, and the consequence is that they break weakly, the bark and wood becoming contracted, through lack of sap, from which condition the trees are long in righting themselves.

Important, however, though it is that such work as transplantation should be done early, there is nothing gained in carrying it on while the ground is wet and unfavourable for handling or during the time that frosts prevail, especially in the latter case, as then much injury is often done by the roots being exposed and the vessels ruptured through an undue expansion of the moisture they contain. To avoid this, after the planting is completed, a good mulching of half rotten littery manure is a most excellent preservative, as it acts most beneficially, not only in keeping frost out, but in assisting to keep heat in, and also in maintaining the soil about the roots more uniformly moist than it otherwise would be.

In planting Peaches and Nectarines and other choice stone fruits, although it may not be necessary to form new borders, it is always very desirable that old ones should be deeply trenched or well broken up, but in doing this the earth and subsoil should be returned to the same relative positions—not bringing the latter to the surface, as is commonly done when work of this kind is being carried out. A few barrowloads of fresh turfy loam laid immediately around the roots of trees will then give them a fair start, but I would particularly warn all against the use of leaf-mould or any vegetable matter whatever with it, as when they get at all dry fungus of some kind or other is sure to be generated and do irreparable mischief. With sweet pure loam there is no fear of this, and trees are always longer lived and far more healthy in it than when they have a more stimulating root run, besides which any help they may require can always be given in the form of liquid-manure when carrying a crop—he only time when it is in any way beneficial.

On the other hand, Pears and Apples and most of he bush fruits are greatly assisted in their growth and brought quicker into more profitable bearing by being planted in richer soil, as in their case a greater ncrease of wood is necessary, but even with these what manure is given should be thoroughly decomposed, and so worked into the soil that it does not come in direct contact with the roots. Where time will not permit trenching to be done for these at once, rather than defer planting it will be best to put off the former operation and get the trees in at the proper distance by digging large holes and leaving the trenching of the space between to be carried out at some future season. The fresh disturbance of the soil about them will then be a great gain, as they may be helped on by an admixture of clay or suchlike material, according to the nature of the land they occupy and other circumstances.

In all well ordered gardens, where a thorough system of rotation of crops is carried out, such things as Strawberries, Gooseberries, and Currants are never allowed to stand many years on the same ground, as fresh plantations are always far more profitable, and old quarters on which they have stood can then be made to come in in regular course. A good plan of growing the two latter is in single rows, to form the backs of borders or the margins to walks, where they are easily got at for gathering or protecting, and occupy less space than when planted in any other way. *J. Sheppard.*

FRUIT HOUSES.

Pines.—During the next and subsequent month scarcely any beneficial assistance can be expected to arise from natural causes, and therefore the treatment of these plants and the conditions afforded to them will necessarily be restricted to artificial means solely, a state which for the time named will demand considerable time and attention in order to maintain and regulate it so as to meet the requirements of the plants in the several departments. Throughout this period our winter temperatures will be ranged as follows:—In the sucker pit 57°, in the successional pits 60°, and in the fruiting compartments 70° at night, these are the minimum degrees, and will be regularly enforced, excepting in the presence of very adverse circumstances, when a few degrees less will be allowed to suffice. The temperature of the fruiting compartment should be raised 5° or 10° higher every day, according to outward influences. A similar rise will, however, not be necessary about the other plants unless it be successionals, which are required to show fruit. When this is the case the same conditions as named for fruiting plants will be applicable in every particular. The utmost care should be exercised in regard to watering at this season, and particularly in the case of plants which are plunged in beds where but a slight degree of heat abounds. Under such conditions plants in moderate sized pots will not require much water, and should only have it when it is absolutely necessary, and then in a tepid state. *Geo. Thos. Miles, Wycombe Abbey.*

Vines.—Where advantage has been taken of the unusually bright November weather, houses that were closed early in the month will now be showing signs of moving. Examine the rods, and if the terminal buds are taking the lead draw them down to a horizontal position, and syringe the less forward parts three or four times a-day with tepid water. Stir the fermenting material that has been used for internal warmth and moisture, and if necessary add a few fresh leaves from the reserve ground to be worked in as turning proceeds. When this stage has been reached, the outside borders, if it is thought advisable to adopt the old-fashioned plan, may receive a good covering of thoroughly worked and fermented Oak leaves in sufficient quantity to maintain a top-heat of 80° or 85°; place lights or shutters over all with a sharp slope to the front for throwing off water, but do not let them rest upon the leaves. If not already done, a careful examination of the inside border should be made by piercing through to the drainage, and if any part of the soil is still dry steady waterings must be followed up until this very important condition is secured. Admit a little air when the weather is mild, and slightly raise the temperature on bright days; but a low night range must be maintained for the present, say 58° as the minimum with a rise of 10° during the continuance of mild weather, and a general reduction in the event of an unfavourable change. Get succession-houses ready for starting in December, and follow up pruning, planting, and cleansing as far as the Grapes have been cut. Collect and save thoroughly ripened wood for eyes and grafts; the latter upon the bottle system should be put on when the leaf is falling, or during the season of rest—late houses having had a favourable time for casting their foliage. Grapes that were brought forward with the aid of a little fire-heat, judiciously applied in the spring, are looking fresh, plump, and promising, and now the foliage is off, the most critical period in the management of late Grapes has passed away; that is to say, Grapes that have been ripened by the end of September under treatment so frequently recommended in these papers. Unfortunately some people have an idea that Grapes for spring use should be allowed to come on naturally without fire-heat to ripen towards Christmas. This is one of the most fatal mistakes in Vine culture, as the wood never ripens properly, consequently the bunches are always loose and spare of berries. The foliage hangs into December, and is generally ripened off by a sharp frost, and if the Grapes escape damping they shrink and become uneatable as soon as they are removed to the Grape room—a compartment which now demands attention, as the time is fast approaching for turning it to account, particularly where late houses have to be filled with plants for bedding purposes. Here, as well as in the vineries, cleanliness and perfect ventilation are important items—the more so as too dry an atmosphere is quite as fatal to long keeping as the presence of stagnant moisture. The room in which I have found Grapes keep best is one with thick dry walls that are seldom affected by sudden fluctuations of temperature or changes in the weather, with good ventilation and sufficient heating-power for expelling damp or allowing the heat to fall below 45° in severe weather. Having properly cleansed and whitewashed the room, all the bottles should be cleaned and filled with soft water, to which may be added a small lump of charcoal, and placed in the racks ready for the reception of the Grapes. The cutting should be performed on a dry day, and care should be taken that no portion of the wood beyond the bunch be removed without the immediate application of styptic, as a means of preventing a drain upon the Grapes by the escape of moisture into the atmosphere. When all the Grapes have been cut, any alterations or additions to the inside borders should have immediate attention, and if the soil has become dry it should be well watered previous to the application of the top-dressing of turf, bones, and charred wood. *W. Coleman, Easthor Castle.*

Cucumbers, like other fruit, appreciate liberal treatment while producing and swelling off their fruit, which, as a rule, more especially from this date till March next, are of quite as much importance as, and perhaps more sought after than, any hot-house fruit then in season. Hence copious and frequent applications of tepid liquid manure in a weak state should be given, for by this time it may reasonably be presumed that the beds, boxes and pots in which the plants are growing are well filled with hungry roots. Where this is the case, and the drainage is perfect, and the plants are making growth freely, there need not be any apprehension of over-watering the plants, provided a bottom-heat of from 75° to 85° is maintained. Let the day temperature range from 70° to 75°, running up 5° or 10° with sun, and should there be any difficulty experienced in keeping up a night temperature of from 60° to 65° during severe weather, which we may expect to have this winter, it would be advisable to cover the house or pits in which Cucumbers are growing with mats or other protecting material, by which means the necessary heat could be maintained without overheating the pipes; moreover, the heat thus obtained is more congenial to the well-doing of the plants, inasmuch as pipes and boilers, when heated to their utmost heating capacity, produce a very arid heat—a kind of sulphury parched atmosphere. See that the plants are kept free of insect enemies, and that other matters connected with their culture are duly attended to. *H. W. Ward, Longford Castle Gardens.*

PLANT HOUSES.

Some care and attention should now be exercised in the ventilation of all plant structures. It will not do to keep houses closed up for days in succession, and attempt to grow their inmates, as it were, in a sealed bottle, as the evil of so doing will soon exhibit itself on every hand. Whether the houses be used as stoves or greenhouses air should be admitted on all favourable occasions. In cold weather a little extra fire-heat would soon raise the temperature sufficiently to ventilate from the apex, particularly in houses with a greenhouse or intermediate temperature. In foggy, wet, or damp weather, a little fire-heat with ventilation will be necessary to expel damp; we say little, because the pipes in such structures should never be allowed to get very hot except in cases of severe frost, under which circumstances it sometimes becomes a necessary evil. The day temperatures of stoves should be got up early in the day, in order to admit air as long a time as possible. The water-pot must also be used with judgment. No class of plants require to be watered indiscriminately, except aquatics, and yet how frequently do we find young men given to this thoughtless practice, never troubling or thinking of the evil results that follow. Also guard against mildew, which will, if allowed, spread rapidly at this time of the year. The foliage of plants nearest the hot-water pipes is also very liable to get infested with thrips, which should be closely looked after, or a good foundation will be laid for trouble next year. Chrysanthemums in all their various colours and types will now form the principal display in conservatories, and every means should be adopted to prolong the flowering season; doubtless the most useful section is the Japanese, which furnishes both earlier and later flowering varieties than the other sections. Successional batches of other plants to take their place should be kept on the move. Sericographis will require careful attention as to air, water, and temperature. If kept in too confined an atmosphere they are very liable to drop their flowers before they are expanded. Justicias, Eranthemums, Plumbagos, &c., should be well fed with liquid manure. Introduce batches of Roman and other Hyacinths into moderate heat to get them into bloom; also batches of Lily of the Valley into the forcing-pit as previously directed, with Tulips, Dielytras, Solomon's Seal, Azalea indica of the old white type, &c. If sufficient stock of Ghent Azaleas, Lilacs, Sweet Briers, Weigelas, Deutzias, Spiræas, Prunuses, Rhododendrons, &c., have not been prepared and grown in pots for forcing, they should now be potted up and plunged in a bed of ashes or other material in readiness for work, as should severe frost set in, they may not be get-at-able by-and-bye. Callas will be much benefited by a little fire-heat, and an unlimited supply of liquid manure. Cyclamens should be kept as near the light as possible to keep them stocky; a temperature of 60° will suit them admirably. Herbaceous Calceolarias and Cinerarias should also be kept as near the light as possible, all decaying leaves or matter should be picked from them. Never allow them to suffer for want of water, but guard against over-doing them. On the other hand Pelargoniums should be kept on the dry side; a temperature from 40° to 45° will suit them well. A higher temperature would cause them to grow weak and watery. Tropæolum Jarrattii should have the attention in tying the shoots and keeping them free from greenfly. All boilers should have the necessary attention by way of cleaning them out and getting them as free from sediment and rusty corrosion as possible before severe weather sets in, and see that all valves are in good working condition. *J. Otterhead, Wimbledon House.*

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 30, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec 2	Sale of Liliums, Spiræas, and Tigridias, at Stevens' Rooms.
TUESDAY,	Dec 3	Sale of Nursery Stock, at Eastdown Park Nursery, Lewisham
WEDNESDAY,	Dec 4	Sale of Roses, Fruit Trees, Shrubs, Bulbs, &c., at Stevens' Rooms.
THURSDAY,	Dec 5	Meeting of the Linnean Society, at 8 P.M.
		Sale of Nursery Stock, at the Brunswick Nursery, Tottenham.
FRIDAY,	Dec 6	Clearance Sale, at Messrs. William Rollisson & Sons, Tooting
SATURDAY,	Dec. 7	Sale of Nursery Stock, at Messrs. Cutbush & Son's Nursery, Finchley.
		Sale of Hardy Trees, Shrubs, Bulbs, &c., at Stevens' Rooms.

WE borrow from the *Annales Agronomiques* the following extracts from a paper written in Italian, and devoted to the consideration of the physiological FUNCTIONS OF THE LEAVES OF THE VINE. The conclusions of the author, M. MACAGNO, are so interesting that we lay them before our readers as ikely to be profitable to them, although they will of course remember that Vine culture in Italy in the open air is a very different matter from Vine culture under glass in England. Still, though the details are different, the principles are the same, and the experienced cultivator will know how to make the necessary modifications. M. MACAGNO sets himself to prove that the leaves elaborate in their tissues the Grape sugar—glucose—and the cream of tartar, which are found at a later period in the berries; he studies the effect of light and temperature on the formation of these substances; and lastly, he considers the effect of pruning upon them.

We cannot give the details of M. MACAGNO's paper even in the succinct form in which they are presented to us by the French translation, but we may call attention to some of the principal results. Grape-sugar and bitartrate of potash (cream of tartar) are found in the leaves, and in greatest proportion in the young leaves above the bunches. In the leaves on those shoots which do not bear bunches, and in the leaves below the bunches, the quantity of the substances in question is much less. The Vine operated on was the Moscatellone d'Alessandria, which we take to be our Muscat of Alexandria, and from his experiments the author has no difficulty in showing that the removal of the leaves above the bunches must interfere with the proper nutrition of the latter, and deprive them of a portion of their sugar or sugar-making substances and of their cream of tartar.

To estimate the effect of light and of its deprivation he covered half a row of Vines, sixteen in number, with a white screen (*toile*), the other half with a black screen, so that the latter received but little light. The observations were conducted from April 20 to the end of July, observations of the thermometer being taken daily. The mean temperature of the whole period was 21°.13 C. in the open air [about 70° F.]; 27°.53 C. [about 81° F.], beneath the white shading; and 33°.90 C. [about 93° F.], beneath the black canvas.

At the beginning of May it was observed that the growth of the Vines under the black canvas was more advanced than was the case in the open air, but, as might be expected, both leaves and bunches soon showed signs of ill-health, and at the end of May the shoots and leaves were shrivelled and black. Towards the end of June, however, new shoots were produced, but without any flowers.

Under the white canvas the Vines were, at first, ten days behind those in the open air as regarded their development, but at the end of June the foliage and shoots were scarcely inferior to those of the Vines in the open air, but the bunches, which were at first produced in abundance, had nearly disappeared.

At the end of July the shading was removed, and the ends of the shoots with the leaves, such as are usually removed by pruning, were removed and analysed, with the general result that it was found that the total quantity of potash was directly proportionate to the intensity of the light if combined with tartaric acid, so that when there is much tartaric acid formed in the leaves much potash is absorbed from the soil, and much cream of tartar is the result; but if the tartaric acid is not formed, or only in small quantities, then the potash is absorbed in proportionately small amounts.

The following figures (we omit the fractions) give the main result of these experiments very clearly. Supposing the normal weight of the shoots to be 100, under the white shading it is 80, and under the black only 10, and the proportionate quantity of the principal ingredients was as follows :—

	Unshaded.	White shading.	Black shading.
Grape sugar	126	69	0.
Tartaric acid	90	53	1.3
Carbonic acid	30	20	4
Ash	154	102	8.
Lime	21	15	0.8
Potash	31	20	1.3
Phosphoric acid	2	1	.07

These figures seem to be eloquent indeed as to the circumstances favouring leaf-action, and as to the results of that action, and it is no wonder the author counsels the desirability of considering well the effect of pruning before having recourse to it.

The great object of pruning, as he well says, is to secure a proper balance between leaf and fruit. Where there are relatively few berries to be nourished there it may be desirable to diminish the leafage, but in Italy, where twenty or thirty bunches may be seen on the same branch, the utility of diminishing the leafage may be doubted. To put the matter to a practical test the author pruned twenty Vines in July in the ordinary manner practised in Italy, and allowed twenty others to remain unpruned. At the vintage, when the crop was ripe, the juice or must of the two sets of Grapes from the pruned and from the unpruned Vines was collected and analysed. It was then found that the quantity of must obtained from the unpruned Vines was greater and that it was sweeter than that produced by the pruned Vines. The details of the analysis are as follows, omitting some fractions :—

	Pruned.	Unpruned.
Specific gravity	1.06	1.07
Grape-sugar per cent.	14.	17.
Dry residue per cent...	21.7	21.9
Total acidity per 1000	14.	13.
Cream of tartar per 1000	13.08	13.05

Though the conditions of an Italian vineyard and of an English vinery are so different, yet there is much that is worth consideration by the English gardener in these experiments of an Italian chemist.

—— LORD CARINGTON PINE.—This very handsome Pine-apple has been brought under the notice of the public through the agency of Mr. G. T. MILES, of Wycombe Abbey. In the first instance it was shown at the autumn exhibition of the Royal Horticultural Society at South Kensington, in November, 1875. On this occasion it was necessarily shown in the open class, and was awarded the 3d prize. Subsequently it was brought before the Fruit Committee of the Royal Horticultural Society, and was greatly admired, and its flavour was pronounced by them to be of unexceptionable quality. On January 17, 1877, it was again submitted to the Fruit Committee, and considered to be such a desirable acquisition that a First-class Certificate was awarded to it, and it was named Lord Carington. At the meeting held October 16 of the current year Mr. MILES again brought five very handsome fruits of it, which together weighed 28 lb. This exhibition was unanimously awarded a Silver Medal, and the largest fruit, which weighed 7½ lb., was selected by our artist for the accompanying illustration (fig. 116), in which the crown is somewhat exaggerated. We hope that ere long Mr. MILES will be able to put it into the hands of the public. The fine flavour which it possesses, combined with its wonderful keeping properties, will make it specially worth the attention of those interested in the cultivation of Pine-apples abroad for importation. Its constitution is vigorous, its habit erect, and its size and weight vary from 4 lb. to 7½ lb.

—— A LARGE BUNCH OF GRAPES.—When we published Mr. WARD's interesting communication at p. 632, on the Grapes at Charleville Forest, Tullamore, we did not anticipate that the large bunch of Gros Guillaume there described was destined to appear in our sanctum, and subsequently to prove such a fertile source of wonderment in our office-window. Nevertheless, thanks to the courtesy of Mr. ROBERTS, such has been the case, and for the past few days we have been enabled to show, what has probably never been seen in Wellington Street before, a genuine bunch of Grapes weighing nearly 19 lb., excellent in form, with well-swelled berries, remarkably well-coloured for the size of the bunch. It measures 28 inches across the shoulders, and 30 inches in length, and would have been considerably heavier than it is had not Mr. ROBERTS, in his anxiety to preserve and finish it off well, heavily thinned the centre in the early stages of its growth. Mr. ROBERTS, who brought the bunch with him from Tullamore, in King's County, to London, informed us, as he did Mr. WARD, that the Vine was five years old, and the cane a very strong one. It has been cropped three years. The first year it produced three bunches, which weighed 45 lb., last year a bunch weighing 23 lb. 5 oz., and this season the one now under notice; but so strongly does the cane show a tendency to fruit that Mr. ROBERTS believes he could have easily secured a crop of the aggregate weight of 6 stones or 84 lb., and that from a Vine which it must be stated is planted in an outside border, and in no way specially prepared to bring about such results. Mr. ROBERTS also brought with him a photograph of the three remarkably handsome bunches of Muscats with which he won the Veitch Memorial Medal at Dublin in August last, and which weighed in the aggregate 15 lb. 6 oz. From what we have heard, and the evidence we have this week had before us, it is clear that Mr. ROBERTS has well established his claim to an honourable position in the ranks of high-class cultivators, and we sincerely congratulate him on his well-earned success.

—— THE FALL OF THE LEAF.—"He falls as the leaf falls, and dies in October," so runs the strain of the old Bacchanalian ballad. As regards the principles therein inculcated, it may with truth be said they are much more to be commended in the breach than in the observance. But so far as the leaves are concerned they have been far from all dying in October this year, for on the north side of London on November 20 half the leaves of the Oaks, Beeches, and Elms had not only not fallen, but many were quite green and fresh. Many other trees have this autumn carried their leaves proportionately long. This may be attributed to several causes: the very late spring, consequent upon which they were late in attaining their full development; the more than usual rainfall which kept the roots moist and prevented any stagnation: to this also was directly attributable the much greater than usual second growth of some trees, especially Oaks—there were quantities of branches on which the second growth was double that of the first. In the case of old trees, which in this part of the kingdom suffer much from over-dry summers, it may be expected that the effects of such a season will be to much recruit their vigour, particularly if it should happen that the rainfall next summer is sufficient for their wants.

—— MARKET GARDEN PRIZES.—Following the action so successfully carried out at several past provincial gatherings in granting valuable awards to the best cultivated farms in the district of the annual exhibition, the Council of the Royal Agricultural Society are now advertising in connection with the great exhibition to be held in the metropolis next year prizes offered for the best market gardens and market farms, thus recognising in a peculiar way the immense importance of market garden productions in



FIG. 116.—THE LORD CARINGTON PINE-APPLE. (SEE P. 692.)

relation to the vast metropolitan population. The prizes are offered under three classes, viz., for market gardens within a radius of 20 miles from the Mansion House, and not exceeding 50 acres in extent, a 1st prize of £50; 2d, £25; and a 3d, £10. Also for garden farms within the same radius, and above 50 acres in extent, prizes of the value of £50, £25, and £10, are offered. A much more important class to those who largely combine the cultivation of market garden produce with ordinary farm crops is found under the heading of Market Garden Farms, situate in either of the five home counties of Middlesex, Kent, Surrey, Herts, and Essex, or in any other county if within a radius of 50 miles from the Mansion House. This will admit of portions of Hants, Berks, Bucks, and Beds being included. These farms are to exceed 100 acres in extent, and the prizes are the same as offered in the previous classes. It will thus be seen that the forthcoming exhibition should have special interest for all largely engaged in market garden work. Should the entries be large there can be little doubt that the judges will have a heavy and most responsible duty imposed upon them. The competition is novel to both competitors and judges, and therefore a grave amount of consideration is needful to prevent mistakes, whilst the principles on which the judgments should be based should be clearly understood and mastered

by those who will be entrusted with the important duty of making the awards. The entries close to-day—evidently an unreasonably early date, having regard to the short notice given. There can be no good reason why the date should not be extended to December 31.

—— NATIONAL AURICULA SOCIETY.—At the annual meeting of the southern section of the National Auricula Society, held on the 19th inst., at the offices of the Royal Horticultural Society, South Kensington, JAMES MCINTOSH, Esq., in the chair, the date of the next year's exhibition was fixed for Tuesday, April 22, the place selected being the garden of the Royal Horticultural Society. The President, Vice-Presidents, committee, and honorary secretary, were requested to continue in their respective offices, Mr. JAMES DOUGLAS, of Loxford Hall, being appointed as joint honorary secretary with Mr. DODWELL, the work entailed in carrying on the Society with spirit and success being at times found to be more than the state of Mr. DODWELL's health enabled him to accomplish. The Society will be the gainer, since it must receive an onward impulse from the united efforts of two such energetic and devoted florists as Mr. DODWELL and Mr. DOUGLAS. A few changes were made in the schedule, which will be printed and circulated at once. The amount of prizes distributed last year was £61 13*s.* 6*d.*, and the treasurer holds a balance of £13 4*s.* 7*d.*

—— INSECT POWDER FROM RAGUSA.—Mr. WILLIAM BARBEY, Valleyres, Vaud (Suisse), writes to say that the plant referred to by the Ragusa Chamber of Commerce in the circular which we published (p. 598) is Pyrethrum cinerariæfolium, Trev., *DC. Prod.* vi., 55, Chrysanthemum cinerariæfolium, Vis., which is cultivated at Valleyres from seeds brought from Monte Marian, near Spalato, Dalmatia, by TH. PICHLER, in 1871.

—— NATIONAL CARNATION AND PICOTEE SOCIETY.—The southern branch of this flourishing society held its annual meeting on the 19th inst., in the Council-room of the Royal Horticultural Society. JAMES MCINTOSH, Esq. occupied the chair, the meeting being, in fact, held concurrently with that of the National Auricula Society. The treasurer reported that £60 15*s.* had been awarded as prizes at the last show, and that a balance of £7 4*s.* 1*d.* remained in his hands. It was decided that the show should be again held at the Royal Horticultural Society's gardens, and should take place on July 22. The various officers were re-elected, and Mr. JAMES DOUGLAS was chosen joint honorary secretary to act in concert with Mr. DODWELL, by which the working power of the Society, more or less impaired by Mr. DODWELL's recent indisposition, will be reinvigorated. The prize schedule was examined and passed, and will at once be printed for distribution. We hope to see a further accession to the ranks of exhibitors in both this and the Auricula Society. The progress, so far, has been satisfactory, but the seed which has been sown should now fructify more abundantly.

—— PRINCE OF WALES CAPSICUM.—A number of plants in pots of this fine and useful decorative Capsicum was a leading feature in the vegetable department of Messrs. SUTTON & SONS' root show at Reading, on Saturday last. A line of them elevated along the centre of one of the vegetable tables served to show forth the decorative value of the plants. They were of dwarf standard shape, on stems 18 inches to 2 feet in height, with nice bushy heads literally laden with well coloured fruit, very pretty and bright in appearance. They had been grown by Mr. W. WILDSMITH, at Heckfield gardens, and were sent to illustrate how nicely this plant is adapted for table decoration when well grown. Probably a stove temperature would suit the plants best, or a warm greenhouse, and if their heads of golden fruit were mingled with those of berried Solanums having coral-red berries, a pretty effect would be secured. Now that berried plants for winter decoration are receiving much attention from gardeners Capsicum Prince of Wales may claim its due share of attention among them.

—— ROYAL BOTANIC SOCIETY.—At a meeting of this Society, held on Saturday last, Professor ST. GEORGE MIVART in the chair, it was announced that since the last meeting seeds had been received from Bengal of a variety of the Tea shrub indigenous to the district of Cachar, in the province of Assam, where it is found growing wild in the forests, and forming trees of 30 feet to 40 feet in height. Specimens of several varieties of the Tea shrub grown in the Society's greenhouses were on the table. An interesting discussion ensued, supported by Professor BENTLEY, F.L.S., Mr. S. W. SILVER, and Mr. G. J. SYMONS, F.R.S., as to the extreme importance of increased attention being given to climatological botany and to the utilisation of the very great variety of climatic conditions which exist in different parts of India. The general opinion of the speakers was that England, by the aid of its Indian possessions and colonies, will before long become independent of other nations for its supply not only of tea, coffee, sugar, cotton, quinine, but for many medicinal and economic vegetable products.

—— CASTILLEJA INDIVISA.—This interesting and peculiar plant, which has been recently figured in the *Botanical Magazine*, is generally regarded as belonging to a race of semi-parasitic plants which do not very readily submit to cultivation. We learn, however, from Mr. THOMPSON, of Ipswich, who claims the credit of first introducing this plant to English gardens—nay, more, of having actually cultivated it, and raised a small though sufficient stock of seeds to enable him to offer it as a rarity next spring—that when well grown it is really very striking in its character. He has been able to do this, notwithstanding the generally unpropitious character of the season for harvesting seeds of rarities, so that it may be presumed it will not be so difficult to manage as has been supposed. Mr. THOMPSON adds in a postscript that Delphinium cardinale proves to be a splendid thing.

—— CHRYSANTHEMUM BEAUTY OF KENT.—From Mr. CANNELL, of Swanley, we have received a bloom of a very choice sport of the variety named Guernsey Nugget, a well-known bright yellow show variety of the highest quality. In the sport the flowers are equally fine as regards form and size, the florets being broad, short, incurved, and well-filled to the centre, while the colour is a very distinct and pretty shade of buff or fawn colour, passing to yellow towards the centre, and tinged with rosy pink at the circumference of the flower-heads. The colouring is quite different from that of any other flower with which we are acquainted. We are informed that the novelty is to bear the name Beauty of Kent. The specimen before us is fully 4 inches in diameter.

—— STIRLING FIELD CLUB.—Under this name a Society has been formed at Stirling to investigate the natural history and archæology of the surrounding district. At the inaugural meeting Mr. CROALL indicated the general objects of the Society, and the means of fulfilling them.

—— PRIMULA SINENSIS RUBY KING.—The fine new variety of Primula sinensis at Messrs. SUTTON & SONS' Florists' Seed Grounds, London Road, Reading (mentioned on p. 666), has been named Ruby King in consideration of the peculiar hue of deep bright ruby-crimson which characterises it. Whether the splendid colouring or the size and form of the flowers be regarded, the variety is most striking and magnificent in appearance. The measurement of some of the pips was truly astonishing; their thick substance and finely-foliaged character corresponded with the dimensions of the blossoms.

—— EXHIBITING VEGETABLES.—Some years ago a question was asked and considered in one of the gardening periodicals, "Does the kitchen garden keep pace with the flower garden?" It was thought that, as a rule, the kitchen garden did fall behind the flower garden in regard to the matter of improvements, while in relation to exhibitions, form and quality in vegetables was nearly lost sight of in the admiration paid to colour in flowers. It was admitted that vegetables do not possess the one, but they do possess the others, and, if well grown, to an extent that entitles them to a high place in the estimation of those who attend exhibitions. Their appearance may not be so striking to the mass of visitors, but as examples of the really useful parts of garden produce, they are deserving of an equal share of favour. But the further question arises, Does the mode in which vegetables are shown generally, and especially at the Royal Horticultural Gardens at South Kensington, on November 19, on the occasion of the competition for Messrs. SUTTON & SONS', and Messrs. CARTER & Co.'s Special Prizes, tend to show off the produce of the vegetable garden to the best advantage? We think not. The mode of showing vegetables in a quadrangular space of so many feet square, with each variety placed in a heap, or in a line, with the bare labels below, and nothing to relieve the formality of such an arrangement, is not the best way to show off vegetables to advantage, and exalt the productions of the kitchen garden in the estimation of those who frequent shows. There are two extremes of showing vegetables which are open to objection,—the one is the practice which prevailed at South Kensington; the other is that of piling up large heaps in a huge ungainly wooden tray. Both methods have in their appearance too much in common with the huckster's stall. In many exhibitions of considerable importance, and where vegetables are largely produced, they are too frequently staged in a repulsive manner—laid out on rough slabs in a haphazard fashion, much as they are on a costermonger's barrow. Visitors turn from such with something akin to disgust, as might be expected. The tendency to isolate vegetables as the least attractive and interesting portion of a horticultural show, tends to the depreciation of vegetables as compared with flowers and plants. Until value is attached to the tasteful arrangement of vegetables by judges we shall look in vain for any substantial improvement in the method of displaying them. The practice of setting up the varieties in dishes and plates is preferable to heaping them up on bare boards; but the introduction of circular and oval baskets of a neat make, varying in form and size to suit the various articles, would bring about a manifest improvement. The employment of any garnishing material should be deemed lawful provided it was not used to a degree to hide from view any article; and the exhibitors should be encouraged to vie with each other in bringing a fine and cultivated taste to bear on the arrangement. The various kinds might not be placed at a dead level as is too frequently the case; some might be elevated a little, so as to break the dull monotony of a uniform position. Any mixture of flowers with competing collections of vegetables by way of garnishing individual groups is to be condemned as altogether opposed to good taste. It might sometimes be thought advisable in an exhibition where vegetables are numerous to break up the competing classes into sections, by placing groups of plants between them, but simply for the purpose of varying the sameness of appearance such an exhibition necessarily occasions. In summer, and also in autumn, berried plants, such as Capsicums, Chilies, Tomatos, Solanums, &c., might be employed to lend a little embellishment, but they should be introduced sparingly and employed with discretion. It would be well if, in leading competitions for vegetables, some encouragement were given to effective arrangement. But as it might happen that an indifferent lot of vegetables might show the best arrangement, one or more special prizes could be offered apart from the ordinary prizes, in order to give effect to the idea. In the great multiplication of horticultural societies there is urgent need for the managers to make their exhibitions increasingly attractive, and particularly is it needed in the department of kitchen garden produce.

—— FINE SECOND-CROP PEARS.—The *Guernsey Advertiser* states that Mr. RICHINGS, of Havelet, has taken from one of his trees three remarkably fine Pears of the Duchesse d'Angoulême variety. They were fully ripened, and weighed respectively 12½ oz., 11⅛ oz., and 8 oz. Second crops are stated to be not very uncommon on Pear trees in the island, but it is not often that the fruit attains such a large size.

—— WINTER PRUNING.—We have often heard old gardeners—real representatives of the good old school, the men who were content to commence learning the duties connected with their calling at the foot of the ladder, and who prided themselves on their knowledge of hardy fruit culture—relate their ability to stand out day after day pruning bush and other fruits during the coldest weather, when frost and fog numbed fingers and toes alike, to say nothing of the worse affections of rheumatism and asthma. But after all we always looked upon this as a sort of foolhardy bravado calculated to benefit no one, for where there is anything like thoughtful supervision

there is no necessity for this, especially where the work is done in due season, in which case the pruning of all except such fruits as Peaches, Nectarines, and Figs is usually completed before the close of the year. In the North of England there is an old saying that "When the days begin to lengthen the cold begins to strengthen," and there is no doubt that a man can do in a given time a deal more of this sort of work better and with more comfort to himself in the milder weather generally experienced before the turn of the days than later on.

—— The Planting Season.—It is some time since we had an autumn so favourable for ground work generally as this has been, especially the planting of trees and shrubs, the preparation of the land for which by trenching admitted of being begun much sooner than usual on account of the ground being much more moist than it often is at the end of August and afterwards. Those who had much of this kind of work to do, and who took time by the forelock, particularly in evergreen planting, have reason to be well satisfied; but after this time, in the case of evergreens of any considerable size, we should defer their removal until spring rather than risk their being planted now. With deciduous subjects of all kinds, including fruit trees, there are still some weeks—should frost keep off—that experience shows to be the most favourable time; for the old planters' adage that "What you plant in the old year will grow of itself, but that which is planted in the new, you will have to make grow," has a good deal of truth in it.

—— Australian International Exhibition, 1879.—The regulations for British exhibitors have been approved, and are now obtainable, together with forms of application, from Mr. Edmund Johnson, Honorary Secretary of the London Committee, at the offices of the Exhibition, 3, Castle Street, Holborn. The space at the disposal of the committee being limited, early application is recommended.

—— Quicklime a Preservative of Wood.—The *Builder* states that M. Lostal, a French railway contractor, recommends quicklime as a preservative for timber. He puts the sleepers into pits, and covers them with quicklime, which is slowly slaked with water. Timber for mines must be left for eight days before it is completely impregnated. It becomes extremely hard and tough, and is said never to rot. Beech wood prepared in the same manner has been used in several ironworks for hammers and other tools, and is reputed to be as hard as iron, without losing the elasticity peculiar to it. According to the *Kurze Berichte*, lime slaked in a solution of chloride of calcium is used at Strasburg as a fireproof and weatherproof coating for wood.

—— Vitis gongylodes.—There were exhibited at the Linnean Society (Nov. 21) some interesting examples of roots, tendrils, and tubers in different stages of growth of certain species of Vines, more particularly to illustrate a communication on Vitis gongylodes, by Mr. R. Irwin Lynch. Subterraneous tubers, as all are aware, are not rare, *e.g.*, the Potato, but in contrast those of the above-named Vine are aërial, and on dropping to the ground they strike root. Cylindrical in shape, of considerable size and exceedingly tenacious of life, they in their native haunts doubtless serve to propagate the plant under circumstances prejudicial to the seed. The tendrils moreover possess terminal adhesive disks, and these are formed irrespective of the stimulus of contact with any foreign substance, therefore opposed to certain other climbers as mentioned by Mr. Charles Darwin. The aerial roots of V. gongylodes likewise are of great length, 11 feet and upwards; they spring from each node, and are of a rich crimson colour in summer, so that they are attractive objects as seen in the Victoria-house at Kew.

—— The Meteorological Society.—The first monthly meeting of this Society for the present session was held on the 20th inst., at the Institution of Civil Engineers, Mr. C. Greaves, F.G.S., President, in the chair. The Rev. T. L. Almond, O.S.B., Rev. T. C. Beasley, M.A., F. T. Bircham, H. F. Blanford, F.G.S., G. Chatterton, B.A., E. Easton, F.G.S., W. L. Fox, G. F. Lyster, Lieut.-Colonel W. Stuart, R. Tennent, F.R.S.E., and H. Yool, were balloted for, and duly elected Fellows of the Society. The following papers were read:—"Report on the Phenological Observations for 1878," by the Rev. T. A. Preston, M.A., F.M.S.; "Up-Bank Thaws," by the Rev. Fenwick W. Stow, M.A., F.M.S.; "Comparison of Thermometric Observations made on board Ship," by Captain H. Toynbee, F.R.A.S.

—— A Cheap and Efficient Fumigator.—A correspondent of the *Gardeners' Magazine* informs the readers of our contemporary how to make a simple and efficient fumigator:—Take a wire basket, such, for instance, as one of those usually employed for suspending Orchids. Line it on the inside with wire net about ½ inch mesh, and with the same or a smaller mesh make a lid to it. The chimney, which should be 7 inches in diameter, may be of either iron or zinc. The legs are formed with three strong pieces of wire, with a ring of stout wire to strengthen them. To set it to work, put in some red-hot cinders, and riddle out the dust by giving the fumigator a shake. Then put a suitable quantity of properly prepared tobacco paper on the cinders, and cover with the lid. The chimney is to be put on the lid, and by the time this is done it will be found needful to hurry out of the house, so rapidly are the dense volumes of smoke emitted. It is indeed the best contrivance I have used or seen in use for fumigating purposes, so quickly and well does it do its work. If there should be any flame, the gauze lid will, I believe, prevent its doing any injury to the occupants of the house. Certain it is that I have not as yet seen the most tender foliage injured by this fumigator. The smoke as it issues from the top of the chimney is remarkably dense, and may be likened to the steam from an engine going at full speed. It is probable that a second gauze lid on the top of the chimney would assist materially in stifling the flame and cooling the smoke, and thus help to make it doubly safe. I would add, in conclusion, that I make a point of having the tobacco paper damped in the morning of the day it is to be used, as it burns more steadily, and is altogether better than when sprinkled with water just before the fumigator is set to work.

—— Ceylon Tea.—Within the last few weeks considerable quantities of Ceylon Tea have been offered for public sale in London, the quality of which has been highly commended. About a year or more since a small sample of Tea from Ceylon was shown at the Society of Arts, and was then favourably reported on. Our contemporary, *The Colonies and India*, in drawing attention to this new consignment, points out that the quality of the Tea will depend on the altitude at which it is grown and the nature of the soil, as well as upon the proper manipulation or preparation of the leaves. As a rule, the higher the elevation at which the plants are grown the finer or more delicate is the flavour of the Tea, though the quantity produced is generally less in bulk. The attention of Ceylon Tea planters is also drawn to the fact that the plants require a much richer soil than Coffee, so that to insure success steps will have to be taken to secure regular supplies of manure.

National Rose Society.—We are informed that the annual meeting of the National Rose Society will, by permission of the committee of the Horticultural Club, be held at their rooms on Thursday, December 12, and that the Anniversary Dinner will be held at the same place in the evening of that day. The Hon. and Rev. J. T. Boscawen, Vice-President of the Society, will preside at the dinner.

—— The Weather.—The report for the week ending November 25, issued by the Meteorological Office, states that the weather was cold and generally cloudy, especially in the east, with frequent dense fogs over England and Ireland—highest day temperatures seldom exceeding 50° and often below 45°; the higher values recorded towards the close of the week. Nights cold, but no very severe frosts reported, owing to the prevalence of cloud; the very low reading of 24°, recorded in "England, S.," and "Ireland, S.," was observed at two stations only (Strathfield Turgiss and Parsonstown); the minima at other stations in those districts being nearly 10° higher. Rainfall less than the mean generally, and especially over the western districts, but several tenths above it in "Scotland, E.," where some heavy falls were measured towards the close of the week. Heavy fall of snow in "Scotland, W.," on the evening of Monday, the 25th. Wind generally south-westerly to westerly in the North, but easterly (N.E. to S.E.) in the South. On the 25th, however, south-westerly winds set in at the more southern stations, while easterly breezes were reported from Scotland. Light or moderate in force generally, but blowing strongly in Scotland from N.E. on the 25th.

—— Gardening Appointments.—Mr. Thomas Turton, for the past three years foreman in the gardens at Heckfield Place, has been appointed gardener to John Hargreaves, Esq., Maiden Erleigh, Reading, at which place the gardens are being remodelled, under the direction of Mr. McKenzie.—We may also mention, though late in the day, that Mr. Bayley, lately of Trentham, has been appointed gardener to Lewis Lloyd, Esq., Monk's Orchard, Beckenham, Kent.

CUTTING STRIKING.

This is undoubtedly one of the most important operations in the cultivation of plants generally, whatever purpose they may be grown for. So far is this admitted that young aspirants in the garden, either amateur or professional, usually pride themselves upon being able to strike the plants they grow; especially should these be of a nature more or less difficult to induce to form roots. Further, if we speak of any one being a skilful propagator, it will almost invariably be understood to point to his abilities as a cutting-striker, and not in any way to refer to the raising of plants from seed. We often hear it said that a clever propagator never makes a good plant-grower, and *vice versâ*. There is no need that this should be so, but there is some truth nevertheless in the remark, and it may easily be accounted for, in consequence of the two operations being so very different, each requiring such an amount of practice and observation, when applied to any considerable portion of cultivated plants, that many people look upon either of the two operations being as much as one individual can master. Then, again, the object of the man who is exclusively a propagator, and who prides himself upon his work, is to look upon the greatest number of small, healthy young stock, whilst the grower takes an equal pride in displaying his ability to grow a limited number of plants up to the highest point attainable within the restricted limit inseparable from the highly artificial conditions most cultivated plants are necessarily subject to. For this and other reasons equally deserving of being taken into account, it will be better, no doubt, to leave the propagation of many of the plants in cultivation, especially such as are difficult to manage, in the hands of those who confine themselves to the work in the principal establishments where these are propagated for sale.

Nevertheless in all private places, large or small, a considerable number of plants must of necessity be yearly propagated by cuttings, and this is often carried out in a way that gives evidence that little knowledge has been brought to bear on the work.

With the rough-and-ready operator a cutting is a cutting: if it will only strike it will do. Yet any one with even the most limited experience must have noticed that a stout sturdy cutting just taken off at the right age, with enough solidity, neither too soft and watery, nor too hard, will with ordinary attention grow away after it has rooted, in a very different manner to what is possible with a weakly cutting, or one that had got its fibre too far solidified when taken from the plant that produced it. Any attempt to convey either orally or in writing the exact condition as to solidity of the wood that cuttings of either hard or soft wooded, deciduous or evergreen, stove, greenhouse, or hardy plants should have attained would be futile. This arises from the fact that there are a large number of plants that are more or less exceptional as to the state in which the wood should be when the cuttings are taken off, so as to secure the most satisfactory results. But as a rule the cuttings of soft-wooded plants are in the best condition when from one-fourth to half matured, and the quicker they are naturally in growth the younger the wood will root, modified by their more or less woody or fibrous nature. The more succulent the stems of a plant naturally are, the older the cuttings should be when inserted. The cuttings of some hard-wooded greenhouse plants will strike when the wood is fully matured or in a young state; in the former it

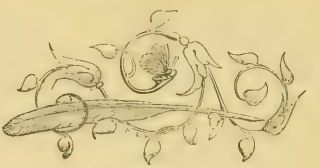
is requisite that the process should be much slower, by letting the cuttings have time to callus, simply keeping them confined more or less under a propagating glass in a temperature similar to that in which the plants have been grown; and when the base of the cuttings have become callused at once to put them in heat, where they usually root immediately. This method, I believe, is with some species of delicate plants more conducive to their subsequent lengthened existence than the quicker and more general practice of striking from cuttings in a half-matured state, or still comparatively softer when the stock plants are cut back and placed in heat to induce growth, in which case the shoots are often taken off with a slight heel of the mature wood. A very large number of plants will strike freely from single eyes simply with a bud attached to a bit of the old wood, either divided longitudinally or entire, with or without a leaf, but more usually with the leaf at the base of which the bud has been formed.

Those plants that are found to succeed from such cuttings as these, generally form wood of a moderately firm but not particularly hard nature, even when fully matured. A very considerable number of plants strike freely from root-cuttings; in fact, some may be increased this way that are difficult to induce to make roots from shoot-cuttings; but in all cases that I have tried that have succeeded by root-cuttings, the plants have been naturally more or less thick-rooted, and the roots not of a hard woody description.

But it is more to the treatment of cuttings when placed in heat that I would direct attention, and to the cuttings of such plants as are in a more or less growing condition when severed from the stock plant. This applies to by far the greatest number of plants ordinarily propagated in gardens, and that require more or less artificial heat to grow them. When a cutting is taken off the stock plant, which is generally in a growing state, the first thing that occurs to the operator is to place it under such conditions as will in the least time induce the formation of roots, so that it may be in a state to support itself, and so begin the work on its own account. To effect this in the shortest time, and in such a manner as will best establish the young plant with a view to its ultimately arriving at the condition it is intended to, it is placed in bottom-heat, the amount of which should, as a matter of course, be in accordance with the temperature the plant requires to grow in. As a rule the heat applied to the soil in which cuttings are placed should be equal to the maximum required by the plants to promote healthy free growth. Anything very much beyond this is generally highly injurious, by affecting the cuttings in a way that seriously interferes with their after healthy development, by raising the top-heat so high as to excite leaf growth when it is most important to repress it. For this reason the top-heat, until roots are formed, should never be allowed to range higher than may be necessary to maintain the cuttings in a healthy state. The tops, consisting of the stems and whatever leaves are upon them, are enclosed within a propagating glass, propagating house, frame, or other similar contrivance that will effect the like object, namely, the protection of the leaves from flagging through the effects of their evaporating from their surface moisture which there are no organs in the shape of roots to supply until these are formed, or, at all events, until on the base of the cuttings a callus is formed; this precursor of roots will to some extent act as a medium by which the requisite supply of moisture is conveyed, with a sufficient but not excessive supply of moisture to the soil in which the cuttings are inserted, and to the atmosphere in which they are surrounded and enclosed. This then is the theory of cutting striking, so well known and generally understood that it would be unnecessary to mention it were it not intimately connected with another and equally important matter in the early existence of cutting raised plants, and to which often little importance is attached or which is lost sight of altogether—that is, the necessity for keeping top-growth completely, or so far as possible, in check, until enough roots are made to enable the young plant in its first efforts at leaf and shoot development to impart to these the solidity and vigour essential to a subsequent healthy existence. Those who have ever taken the trouble to note the difference in the after-growth of even a free-growing bedding plant or a Chrysanthemum that has been struck from a cutting placed whilst roots were in course of formation in a position that did not admit of top-growth, and have watched such plants through the season, will have observed that under similar conditions or with even better attention, plants of the same varieties that whilst striking were so treated as to cause them to make growth before many or any roots existed, would never equal the former, and the comparison holds good even in a greater degree with things of a more permanent character. In the case of plants that are to be afterwards grown in pots continuously, immense numbers are so injured during the striking process through insufficient light inducing them to make a considerable length of weak stem that they never afterwards are equal in strength and vigour to others not so injured; and incalculable numbers of cuttings yearly damp off that would have made healthy plants had they been so placed during the time of rooting by the medium which supplies them with bottom-heat being raised sufficiently near the roof glass of the house or pit in which they were struck.

The question then comes, how to best secure this dormant condition of the tops of cuttings whilst roots are being formed. The most effectual means I have ever found is to place them where they will get plenty of light, which has more influence in arresting the top growth than anything I have ever been able to hit upon. A prevalent idea I know exists that cuttings root freer when placed in a subdued light, and with some things I have found it so, but these are generally plants that are very difficult to root from shoot-cuttings, and that will bear keeping very close as well as in little light, without a disposition to make top-growth. The greater portion of propagating-houses, pits, boxes, or, what many growers have to make shift with, improvised contrivances in ordinary hot-houses, are generally very much too dark, or the cuttings are placed too far from the glass, which amounts to the same thing. Shade in amount sufficient to protect the cuttings from the sun is necessary with most things whilst striking, but the exclusion of light is not, and the more light they get, provided the temperature of the structure in which the tops of the cuttings are placed is not raised too high by the influence of the sun's rays or with it in conjunction with fire-heat, the more satisfactory will be the results in the after growth of the plants.

I have lately seen a very simple arrangement by which the difficulty here pointed out can be effectually got over, and a most efficient cutting-striking appliance introduced into any ordinary house or pit where pipe-heat is already existing, and which at the first opportunity I propose to describe. *T. Baines.*



Home Correspondence.

Sub-Phenyle as an Insecticide.—During the last summer a fluid (then known as chemical fluid) was sent me by an entomological correspondent for trial as an insecticide, which appears to act so well in other ways besides its original purpose, that I should be glad to draw the attention of other observers to its possible value. The original and main use of this fluid (now brought out under the name of Sub-Phenyle) is a disinfectant, and it is recommended for insect and skin diseases in animals. In the course of experiment with it as a horticultural insecticide I noticed that where it reached the roots of the infested plants a vigorous or improved growth almost always followed. Not quite always—Ferns were not, as far as I could see, at all improved by it, but with the ordinary run of garden plants (Rhododendrons, Carrots, Helianthus rigidus, to give examples of widely differing growth) the application appeared to me to be always followed by more luxuriantly developed and well-coloured leafage. One of the special components of the fluid is some form of tar, and to ascertain how far this peculiar principle was absorbed by the plant, so as to alter its juices to a degree, rendering it injurious to the insects thriving on it in its natural state, I had the roots of some of the plants analysed, the result showing the presence of carbolic acid, or of a homologue of that substance, in very minute quantity; but still sufficient to my own rough and unscientific treatment to show both to taste and smell its characteristic presence in the roots that I experimented on, after careful washing away of any external adhesions. The analyses, which were taken with much care, showed no alteration in the ordinary constituents of the roots, beyond the presence of carbolic acid just mentioned. The matter seems of some interest, both with regard to plant absorption, and also as to the possibility of having here a material, very inexpensive, and very easily applied, which may at once promote plant growth and destroy the larva that preys on it. It is so, as far as I have tried at present, but I have only been able as yet to try it thoroughly on one or two species. I find it also acts as a poison to the worms contained in soil saturated with the dilute fluid, as in the case of pot plants, where they have no means of escaping from the sphere of its action. In its undiluted form the fluid is immediately destructive to vegetable life, and even in very dilute form is apt, without great care, to be injurious to the foliage; but in the proportion of about a table-spoonful of Sub-Phenyle to a gallon of water (and in much stronger form as the operator gets more insight into its use) it may be safely applied as a watering to the roots—the only point necessary, as far as I see, being a little attention at first as to whether the plant experimented on may be one of those it does not suit, rather than one which it will throw into vigorous leafage. *O.*

The Chrysanthemum Show at Liverpool: a Shameful Disclosure.—In the class (A) in which special prizes were offered, open to all comers, at the late Liverpool show, there were six competitors, and the 1st prize was awarded to a stand of very suspicious looking blooms, so suspicious indeed that I made the following notes:—"1st prize, Mr. F. Roberts: the only good bloom on the stand, one of General Slade; the others look as though a double growth had taken place, which is very conspicuous in the blooms of Queen of England, Alfred Salter, Empress of India, and Golden Beverley by a whorl of small petals formed around the middle of the blooms." Determined to know if they were single blooms or two or three cleverly stuck together, I later in the day, and as the crowd increased, took an opportunity of opening the top of a bloom with my pencil, where I found a good stout pin; a second and a third were examined, and each proved to have a pin in them, which I exposed. I found the owner and accused him of it, saying that I should protest against the award. He assured me they were genuine blooms, but in a few minutes he was missing, and not to be found. I then found the secretary and one of the committeemen, who declined to take proceedings without a written protest, which I at once wrote out. The stand was taken into the committee-room, and in the presence of a crowd, composed of committeemen, competitors, and visitors, an investigation was made by the secretary. The first bloom proved to be made up of two, the second of two, the third of three, and so on through the whole stand, only one bloom out of the twenty-four being found to be genuine. The others were made up, some of two and some of three flowers fastened together with pins and gum, and in such a manner that every one could not detect it. An exhibitor who was present at the examination said he was only suspicious of one bloom, but how men with such a reputation as that possessed by the judges could award the prizes without seeing something suspicious about them or detecting a bloom of White Venus stuck into the centre of an Empress of India, really puzzles me. How long such a practice has existed it is hard to say, but such dishonest systems cannot be stopped too quickly. If my memory serves me right, some one told me the same man carried off the first prize last year; and how many years would he have done it again had he not been stopped, or how many exhibitors indulge in this practice, who can tell? It is the duty of every one acting as judge to adopt proper measures to ensure the detection of every unprincipled exhibitor, and no class of plants do we find a wider field for such exhibitors to work in than in Chrysanthemums. I would strongly advise judges to uncup all suspicious-looking blooms, which is really the only way of getting at them properly. I have written this as a warning to both judges and exhibitors, and if I have in any way made an error I trust your correspondent, Mr. Hinds, or Mr. Manderson, will please correct me, as they were both witnesses to the above. The latter gentleman very humorously compared the blooms to little haycocks. *J. Ollerhead, The Gardens, Wimbledon House, S.W.* [The facts narrated in the above letter are so extremely disgraceful to the perpetrator of the trick in question, and so calculated to bring exhibitions into disfavour with proprietors of gardens, and with the public generally, that Mr. Ollerhead has done a real service in exposing and denouncing at once the malpractice above alluded to. So serious was the charge, however, that we should not have inserted Mr. Ollerhead's letter had we not put ourselves in communication with the secretary of the society, who, in his reply to our enquiries, confirms substantially the charge made by Mr. Ollerhead. It is satisfactory to know that the culprit was at once exposed, as he deserved to be, and that the committee will not allow him to exhibit at Liverpool again; but whether they ought not to go further, and prosecute him for attempting to obtain the prize by false pretences, is an open question. EDS.]

Cleistogamic Flowers.—Will you allow me to correct an inaccuracy in the abstract of my paper read at the last meeting of the Linnean Society which appears in the *Gardeners' Chronicle* for November 23? Instead of saying that I was "disposed to regard" homocleistogamic and heterocleistogamic flowers "as having arisen, one by degradation, the other by a rudimentary form of the organ," what I did say was that although at first disposed so to regard them, further observation convinced me that both kinds of closed self-fertilised flowers have originated by degradation. The reasons for this conclusion, derived from the structure of the flowers of Impatiens, Ononis, &c., are given at length in the paper in question. *Alfred W. Bennett*, 6, *Park Village East, N.W., November* 25.

The Culture of Apricots.—Being about to take up some old Apricot trees from a south-west wall, that have become both shabby and unprofitable in consequence of whole limbs having perished, with the view of replanting with young trees, I should be very glad of any information respecting border making, the prevention of limbs dying, and in short anything that would help me in my desire to cultivate healthy and fruit-bearing trees. As this fruit is much esteemed by my employers, I am exceedingly anxious to grow it successfully. The soil where the old trees have been growing is of a porous nature with a sandstone bottom, and this leads me to infer that the water gets away too rapidly, and consequently the trees suffer from insufficient moisture when in full activity. I think of throwing out the soil from the wall to 9 or 12 feet in the border, to the depth of about 2 feet, and putting a stratum of clay at the bottom, then filling up to the surface with fresh fibrous soil. Will any one experienced in Apricot growing kindly give me their advice? And if any of your correspondents has tried an artificial clay bottom for Apricots I should be glad to know with what results. *E. Bradley, Gr. to R. Chrimes, Esq., Moorgate Grove, Rotherham.*

Japanese Chrysanthemum M. Crousse.—I should like to know wherein this new variety differs from Hero of Magdala, raised by the late Mr. John Salter, of Hammersmith, and awarded a First-class Certificate by the Royal Horticultural Society in 1868, and sent out in 1869. It was described by Mr. Salter as "blood-red in colour, the reverse of the petals orange-buff. The florets in their young stage reflex, but as they advance in age the centre florets take an upward or incurved direction, while the remainder reflex, thus showing two distinct colours." Any one who saw the new variety, M. Crousse, at the meeting of the Royal Horticultural Society on November 19 will admit that the description given of Hero of Magdala hits it off exactly. I have a distinct recollection of Hero of Magdala, having been a member of the Committee at that time, and can see in M. Crousse only a reproduction of it. M. Crousse is in all probability a Continental importation, received into this country and exhibited in perfect good faith in the full belief that it was new. If it can be made to appear to differ from Hero of Magdala it yet comes so very near to it as to render it unnecessary to maintain it as a distinct variety. *R. D.* [Chrysanthemum growers should be able at once to settle this point. To us M. Crousse appeared to be cream-coloured at the lower half, Spanish-red at the upper half of the floret, which does not exactly agree with the description quoted by "R. D." Eds.]

Pears for Late Use.—If some of our successful Pear growers would be good enough to come to the front and give a few articles on Pears, particularly good dessert kinds, they would undoubtedly confer a boon on many young gardeners, and as this is a subject of much importance it would be interesting also to many of long practice. Week after week we have Grapes, Grapes, but few seem to speak of Pears, and yet I consider there is as much judgment and fore-thought required to keep the dessert well up in first-class Pears as in Grapes. Moreover, particularly in the first three months of the year, I think that some of us have much to learn, judging from the remark made by Mr. Sheppard on the difficulties he finds in growing satisfactorily those two good old sorts that have stood us so well for many years, Winter Nelis and Easter Beurré. There are undoubtedly many that have made Pears a particular study, and could give much valuable information not only as to the varieties most suitable to grow, but also on which stock the different varieties are found with them to succeed best. Much may also be told on the time of gathering: this requires much judgment; for instance, Easter Beurré if allowed to hang too long is deficient in flavour, but if gathered as soon as the pips begin to turn the slightest tinge of brown, is one of our best; whilst Winter Nelis may hang as long as the weather will allow with advantage—it will then often keep well into February. I was much surprised to see Mr. Sheppard speak of it as liable to crack and as being a bad doer, for I have always found it the reverse of this, never once having seen it crack. Much may also be said on the temperature of the fruit-room. Many varieties are flavourless through being kept too cold. There are some who have made the Pear a particular study. Mr. Culverwell, of Thorpe Perrow, I would mention as one; and I trust he will kindly give your readers a few particulars of his long and successful practice with this fruit, which has made his name famous amongst the many noblemen who have tasted his splendid Pears at Mr. Milbank's table. Some few years ago I remember seeing, on Nov. 30, at Thorpe Perrow, Mr. Culverwell's dessert (the occasion being a wedding breakfast), which was splendid in every respect; but I was most struck with the splendid Marie Louise Pears. I hope Mr. Culverwell will tell us how he manages this Pear to have it in such fine condition so late in the season. *Thos. Keetley, The Gardens, Darley Abbey.* [The Pears Mr. Keetley saw were no doubt the produce of a Marie Louise worked on the Beurré Rance, and which Mr. Culverwell can keep till Christmas and after! We shall be glad to receive communications on the subject. Eds.]

× **Calanthe Veitchii.**—I send you a spike of this beautiful winter blooming Orchid. In the spring I potted six bulbs in a mixture of loam, peat, and silver sand, placing two bulbs in a 6-inch pot, and have now about ten spikes similar to the one sent. We find them very useful for cut flowers as they last a long time if their blooms are kept dry. Care must be taken in watering until they get well started into growth, or they are apt to get spotted in the foliage, also at the time they shed their leaves, or the bulbs are liable to rot at the base. *S. A. Woods, Gr. to F. J. S. Foljambe, Esq., M.P., Osberton, Worksop.* [A most beautiful specimen. The spike measured 45 inches in length, and bore thirty-one fully expanded blooms, with about twenty buds to follow. Eds.]

An Improved Road-Scraper.—If the operation of an ordinary road-scraper is observed, it will be seen that it is faulty in one important point, viz., that

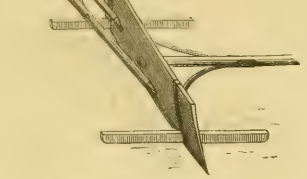


Fig. 117.—Road Scraper.

it leaves the hollows as it finds them, if indeed it does not scrape them out deeper. It simply smooths the surface, but does not level it. By the simple addition of runners, by which it is kept from falling into the hollows, it will draw earth into them, instead of scooping them out. The runners are raised an inch or two above the bottom of the scraper. It will thus scrape up the loose soft earth and deposit it where needed, that is, in the hollows, thus levelling as well as smoothing the surface. The form of the improved scraper is represented in the engraving (fig. 117). *American Agriculturist.*

Vanda *v.* Anguloa.—Is the taste for good Orchids degenerating? Such is the question which occurred to my mind on seeing the result of the judging at the last Whitsuntide show at Manchester, and again on reading Mr. Douglas' comments in the *Gardeners' Chronicle* of November 16, p. 624. I have no desire to rush into print, but ask your permission to publish a few lines as Mr. Douglas has brought my name before the public. Mr. Douglas says, after seeing both he would award the palm to the Anguloa as a triumph of cultural skill. Now it is surprising to see a man who is supposed to know Orchids write this. When did he judge them?—in October, when they had lost all that they contended for in the previous May. I wonder if he would like his Auriculas and Polyanthuses judged in October. Neither he nor any other man could judge of the respective merits of the two plants in that way. He gives the measurement of the triumphant foliage of the Anguloa that won it (the medal); the Vanda he saw over the heads of a lot of other plants, and could not give a description of it for his life. To class the cultivation of an Anguloa with a Vanda is unfair. Any grower will know that to grow a Vanda into the condition that was in requires far more skill than to grow the Anguloa, which is considered one of the freeest Orchids in cultivation. I have heard the majority of the best practical Orchid-growers in this country express their opinion on the decision. They one and all say it was decidedly wrong. Many assert that five of our plants were a long way before the Anguloa. The Vanda needs no description here. Phalænopsis grandiflora, with ninety flowers; Aerides Schroderi, with seven good spikes; Aerides Fieldingii, with three spikes over 3 feet long, with five branches; Saccolabium præmorsum, with nine fine spikes, each one a long way superior to the finest Anguloa ever grown in point of beauty, value, and culture, and the finest plant in cultivation of its kind. Mr. Douglas says a set of experienced judges are most likely to arrive at a right decision; true, but in this case I ask were they experienced judges? I am satisfied they were not Orchid growers, and I maintain that no man who is not an Orchid grower can be an experienced judge of Orchids. In our Rose shows many judges are Rose growers, in fruits the same, why not in Orchids? This is my ground of complaint. *E. Mitchell, Broughton, Manchester.*

Strawberries in November.—At the Liverpool show on November 20, Mr. Hinds, of Otterspool, exhibited a large dish of Underhill's Sir Harry Strawberry, which for size and colour almost equalled anything that we can grow here on our gravelly soils in the month of July. To hear of Strawberries being grown and fruited at unseasonable times of the year is not now an unusual thing, but generally speaking they are small in berry, bad in colour, and produced in such miserable quantities that a dish is entirely out of the question, but those exhibited by Mr. Hinds made a splendid dish. Of the flavour I cannot speak, but it was said to be good. On visiting Otterspool I saw the plants from which the fruit had been gathered, and most certainly there was a very full crop, of which the plants exhibited growing in pots were a fair sample. Those desirous of obtaining Strawberries at this time of year cannot do better than grow the above variety, and adopt Mr. Hinds' practice as detailed in your columns. *J. Ollerhead, Wimbledon House, S.W.*

Transplanting.—The great drawback to making extensive plantations has often been the expense and difficulty in moving large specimen trees from one part of the estate to the other. I have seen two men occupied half a day in preparing and lifting a tree to the level of the soil, while two men, by means of the plan I am about to describe, can with facility produce the same effects in one hour, and this with a larger ball of earth, and the movement given to the ball reduced to a minimum. The old plan which we used to adopt here was to dig a deep trench round the tree and then dig underneath it, drawing the tree on one side, filling in the earth, then drawing the tree on the other side, filling in the earth on this side in the same way as before, until the ball was placed nearly on a level with the surrounding ground; the tree was then drawn on one side and a thick iron plate (with rings at each corner to tie the tree to) and the chains for the draught, were drawn under the ball. Now all this was too tedious for my "railway notions," and, besides, I should never have been able to have completed the breadth of planting which I yearly undertake had I not adopted a more rapid, and an even better mode of transplanting. This is now the fourth year I have adopted this plan, and I have already transplanted several hundred trees this season, and out of the whole only one has been driven aside by the late gales and heavy rains (3 inches of rain having fallen in the last week, the reason being that we have been able to afford a larger ball than by the older method. The first implement I had made was a very strong iron fork, resembling the spud used for digging hops, but of much larger dimensions; it consists of three tines, 16 inches in length, with a plate at the points resembling the blade of a spade: the handle is cranked, which not only gives greater leverage, but it enables the men to thrust it more easily under the tree, an iron being worn on the boot to give greater force to the thrust; the handle of this tool must be 5 feet in length. In moving a tree two men make from four to six thrusts with these forks at a proper distance round the trees; at the last two thrusts they force up the tree to a level with the soil. This is a most successful mode of lifting small trees, and a very large ball of earth can be moved with them. But for large trees (we are about to move a Laurel about 14 feet in diameter) the implements which are used are of a gigantic size and weight, each implement being of iron, and weighing, with its movable handle, or rather lever, 50 lb. It much resembles the other tool, but instead of a blade to cut through the earth, it has what I think is termed a duck-foot to each tine. The movable lever is fitted to the handle of this fork, by means of rings, in a very simple manner. To commence, then, with this Laurel. We shall set three men to dig a deep trench round the tree, leaving sufficient soil for the ball to weigh about a ton. After the trench has been

dug of sufficient depth three forks will be driven under the ball; a stout wooden fulcrum will then be knocked under each fork, the levers, 10 feet in length, will then be adjusted, when it will take two men to each lever to force the ball upwards sufficiently high to enable two strong wooden bars to be placed under it; the iron plate before-mentioned will then be placed under the ball on these bars, and two horses will draw the tree to its destination. I shall put half a one-horse load of sand round this ball, and then cover it over. By this mode I transplanted last season as late as May, using then a good supply of water to the sand. To give the power of an additional man to the levers, place the end of each lever in a 2-inch iron pipe, 6 feet in length, this will lengthen the levers about 5 feet. *Observer.*

Salvias.—Such Salvias as S. splendens may be grown like Fuchsias, 5 feet high and as much in diameter, from cuttings, in one season, with no more trouble than is required to grow Chrysanthemums, and for mixing with the latter there is no finer subject. I am this season growing a variety of S. splendens called Brunanti, in which both the flowers and calyx are finer than in the old form. I am also trying one called S. alba; it is, however, not white, but cream-coloured, a free bloomer and effective. My favourite is Salvia Heeri, a plant with every good property, the colour brilliant scarlet, the habit compact and good. This follows S. splendens in blooming rotation, and like it is best grown out-of-doors in the summer to keep it bushy and clean. Another greenhouse Salvia is S. gesneræflora, a very robust grower, and a fine plant where there is plenty of space. It produces very large bunches of rich scarlet flowers, strongly scented. I have grown this variety 15 feet in circumference. Two old favourites which I have not seen for a long time (no doubt some of your readers could tell me where they may be found) are S. Cammertoni and S. involucrata. The first I think originated at Liverpool; the habit is erect, it is a free grower, and blooms profusely. The flowers are rosy crimson, numerous, small, and very sweet. It is the best one I know for cutting from for house decoration. S. involucrata is well worth cultivation in the greenhouse. Salvia fulgens we use extensively outside, and find it a brilliant and attractive border flower in the autumn. Young plants struck in the spring and treated like a Dahlia bloom quite freely in the autumn. Salvia patens may be treated the same way, and is just as good in every way, the blue flowers being the best of all for effective contrasts. Excellent and attractive groups may be made of S. patens and Abutilon Thompsoni, Iresine Lindeni, Lobelia fulgens, &c. *William Payne, Belmont, Taunton.*

Seeds Sown by Birds in Trees.—An old and very large Ash tree growing singly in an open and somewhat exposed part of the park here had about one half of its top blown down during the recent high gales of wind. The part which broke off split a part of the trunk at about 7 or 8 feet from the ground, and exposed in what had been the fork or junction of the limbs a very interesting group of young healthy plants. These were twelve in number, growing within a very limited space, varying in height from 3 to 15 inches, and consisted of the following sorts, viz., eight Hollies of different sizes, two Whitethorns, one Gean, and one common Elder. It is not by any means an uncommon affair to see seedlings of forest trees growing in a similar manner, but it is rare to find such a nest of them, all having been carried there from a considerable distance by the feathered tribe, and dropped down from the overhanging branches. *J. Webster, Gordon Castle.*

Veitch's Autumn Giant Broccoli.—This, like the Autumn Giant Cauliflower, is a true gardener's friend, and is now, with us, coming in in grand style with heads close and white as snow, and so solid and heavy that one or two are sufficient for a large family. The flavour, too, is as mild and delicious as can be, and coming in just at this season it meets a want that has long been felt, as it is very rare that Snow's, Osborn's, or any of the early kinds make their appearance till after the turn of the year, till which time Veitch's carry us on. Those who have not grown it hitherto should not fail when getting their seed to secure some of this most useful variety, and once they make its acquaintance I am convinced they will never omit to grow it again. The persistent way the leaves fold over each other forms a capital natural protection to the flower, which is thereby screened from frost, and rendered safe from discoloration and harm. *J. Sheppard.*

Schizostylis coccinea.—I recollect having had some difficulty with this plant when first introduced to this country; it was given into my care as a plant which required very great attention and considerable heat. It was tried and condemned as another disappointment, and finally pushed out-of-doors, where it helped itself, as many plants will do, and proved it was worth more than was expected. I must say I had for many years forgotten it, until lately it has presented itself in such a showy and attractive manner here that I could not refrain from introducing it to others who may have made similar mistakes to mine, and to many who may not be acquainted with its merits. At this dreary season, when flowers are so desirable, nothing can be compared to the Schizostylis—perfect hardiness in the first place, free growth in the second, ornamental habit all the year round, and profuse production of flower-spikes. The flowers are of the richest rosy crimson, and all this in dull November. While I write the herbaceous borders in the gardens of John Marshall, Esq., Belmont, Taunton, are enlivened with large patches of this cheerful flower, which, notwithstanding frost and chilling rains, are bright and beautiful when all others have passed away. To these qualities another must be added, and it is one of importance. I allude to the present desire for cut flowers for house decoration. I find this a most useful one in every way. In point of durability it resembles the Gladiolus, and like it, will go on blooming, opening all its flowers when cut and kept in water, the same as if growing on the plant. Lest any one should be deterred from growing the Schizostylis, I would say at Belmont the soil in which they are now prospering so well is stiff strong loam, and the situation very open, facing due north. *William Payne, Gr., Belmont, Taunton.*

Aucubas, Laurustinus, and Rabbits. — The planting of the above will be perfectly safe so far as the rabbits are concerned, but not so as regards the shrubs, as there are few things among evergreens they will not nibble and destroy, especially during frosty weather, if they happen to be short of food through snow lying long on the ground. The only shrubs that are really safe from their ravages are Rhododendrons, and these are plants that they seldom or never touch, however sharp they may be driven through hunger; and not only are they proof against rabbits, but they afford the best and most agreeable shelter for pheasants on account of the way they droop and form a dense shelter by spreading their branches so low on the ground, and the great ease with which they can thread their course and run rapidly among them. The keepers here are highly pleased with them for game preserving, and since we planted them largely have had many more pheasants than they ever had before. as the nests are so much better protected and hidden by dead leaves, weeds, and other *débris*, that always drift up under them, or grow round about their stems. Next to Rhododendrons, Box, when established, has the greatest immunity from rabbits, and is likewise a most enticing shrub for both them and pheasants to sit under; but as even the strongest arboreal varieties are so slow growing, it takes a great many years before they can be got to a size to be useful. Berberis Aquifolium planted thickly in patches and mixed in till they get together, are likewise valuable as a cover for game, and like both Box and Rhododendrons it will succeed under the shade of trees, and in dry soils where the latter could scarcely exist. Box and Rhododendrons may be planted at almost any season, but Berberis can only be moved with certainly of success about the middle of April, or just as the buds are beginning to burst—a time when the roots appear to to have the same capacity for action, and start actively to work with the top. In light sandy soil green Hollies do remarkably well, and form good ground cover if they have their main leaders cut occasionally, so as to cause them to branch out and spread, but they are in no way equal to Rhododendrons, and rabbits often feed on the bark if they run at all short of food. The common Yew, Taxus baccata, forms a dense spreading evergreen, and clumps have a fine effect as well as make a good retreat for both feathered and legged game to get under. There is one peculiarity with rabbits in that they are sure to attack all kinds of young freshly transplanted shrubs, when old established plants of the same standing close by are left untouched; but why this is I never could understand. The only way therefore to cope with them is to protect with wire netting, or some other means, till the plants get a good start, after which they generally leave them alone. *J. S.*

—— In reply to your correspondent, "F. E. R. C.," I can say from my own experience that rabbits will entirely destroy Aucubas. *R. Hanbury, Poles Ware, Nov.* 23.

—— "F. E. R. C." may safely plant Aucubus, Laurustinus, Berberis, and Rhododendrons where rabbits are numerous. They will not touch them. *W.*

Garden Labels.—I can unfortunately endorse your note as to the nature of the paint found on the imported Continental labels. After exposure to the atmosphere for a few months it was found to have vanished, and with it the writing. Almost worse, however, is the material out of which many of these labels are made. I should imagine that it is the remains of old joists, rafters, &c., as much of it is worm-eaten, and what resemble stout lasting labels 8 inches in length are found after five or six months' exposure in the open ground to have become so rotten that they fall over with a good puff of wind, in fact, are absolutely valueless. The very best stuff to make good stout lasting wood labels is lath-wood, and on wet days, when men are glad of a dry job, it is better to let them cut up a few bundles of laths, and thus secure a stock of stout lasting labels than to buy ready-made rubbish, that proves to be absolutely worse than useless. They are misleading when it is found that they have all fallen over, and have probably been replaced in the wrong situations. *A. D.*

Cypripedium insigne. — Your correspondent, "J. M." (p. 666), asks if it is usual for this plant to have two flowers on one stem. When going through the gardens of Longford Hall, near Manchester, in the autumn of last year, several examples of this were to be seen; so that in this case it may not be unusual, still there may be something in the variety. The variety grown at Longford seemed stronger than usual. At one place the writer lived at, a large quantity of C. insigne was grown for decoration in winter, but two flowers on a stem there cannot be called to mind at present. It is not uncommon in the order for two flowers to be on the stem. Variety same as leaf herewith has produced two flowers with us. *R. M.*

—— I have been acquainted with this Orchid for a very long time, but do not recollect having seen more than one flower on a stem until about two years ago, when a plant under my care threw up fourteen flowers —four single and three double. There is a plant now in flower here with twenty-nine singles and six doubles. The plant is about 2 feet in diameter, and very healthy. I had thought it rather unusual until now, but I suppose it depends much on the healthy condition of the plant. *J. Batters, Gr., Gillingham Hall, Norfolk, November* 25.

—— We have three stems with two flowers on each at the present time, and have had one or two flowering in the same way for several years. *J. Croucher, Sudbury House, Hammersmith.*

Carrots.—There can be no question that, as your correspondent, Mr. Berry, states on p. 665, a good crop of Carrots free from canker is an unusual occurence in many places. The garden here is one of the worst I have had to deal with as regards Carrots and Onions; the latter are always attacked more or less by the maggot or grub, and the same may be said of the Carrots, and those that escape the first evil are generally so badly attacked with canker that they cannot be presented in the kitchen. Two years ago I had a small brake of Strawberries that had been on the ground four years. In the autumn I trenched down the whole of the herbage to the depth of 2 feet, leaving the surface as rough as possible for the winter. In the spring I merely raked it over to level it, and immediately after sowed the seed. These Carrots were an excellent crop, and free from both maggot and canker, and my employer informed me at the time that it was the first good crop of Carrots free from disease he had ever had in the garden. *Thomas Sheasby, Hare Hill, Macclesfield.*

The Highfield Grape Tomato. — A correspondent, "W. W.," drew attention to Mr. Davidson's new Grape Tomato a week or two since in these columns. Having seen it at this time last year growing on the garden walls at Highfield, when it was there in fine fruit, I was anxious to see how it had fared after such a manifestation of the Tomato disease as has been seen this season, and called there a few days since. The plants I found as last year, still fairly fresh and healthy, having on fruit and foliage no trace of the disease, but suffering from cold only. So far they have been protected at night by mats, and this has saved them from frosts. In addition to its remarkable fertility, its undoubted excellent constitution is a most valuable feature. The fruit is about the size of the berries of a Gros Colmar Grape, and is more briskly flavoured than ordinary kinds. *A. D.*

Forestry.

AUTUMN-PLANTING. — Till within the last ten days planting could not be properly carried on in this district, but now that the weather has improved, and the ground has become firm, solid, and dry, every available hour should be devoted to the work. I have for many years advocated autumn planting, and the more I practise it the more I am convinced that autumn and winter planting is vastly superior to spring planting, not only in respect to small plants, but those of large size as well, including evergreens and deciduous trees. I am not overlooking the various circumstances connected with

the state and condition of the soil as to wetness or dryness, nor yet atmospheric influences, as frost, high winds, humidity, and snow-drift, each and all of which produce their own peculiar and important effects upon the growth and vegetation of trees. Taking all matters into consideration with the extensive experience of many years, I am quite satisfied that autumn planting possesses very decided advantages over spring planting. Although quite satisfied of these advantages myself, it may not be so with others, and for their sakes I make the following statement. The first important example of the superiority of autumn over that of spring planting came under my observation in the year 1863: it was that of an extensive moorland enclosure in the district of Strathspey. The enclosure is a heath-covered hill, comprehending about 500 acres, and was planted in three successive years ending November, 1865. Part of the planting each year was done in the autumn and extended into the winter till stopped by frost or snowstorm, and the work was again resumed in spring as soon as the weather would permit. The slope of the hill is towards the south, and the operation of planting was conducted up and down the hill from top to bottom in regular though not straight lines. Three years from the time of planting I observed at a distance that the trees showed a distinct and marked difference of growth at three places on the face of the hill. The appearance was that of one part being several years older than the other, but on making inquiry of the forester who conducted the planting, I found that the difference of growth was entirely the result of the difference between the autumn and spring planting. The trees were all of the same age, namely, one-year seedling twice transplanted Larch and Scots Fir—the work done by the same workmen and the ground the same in every respect; yet it was quite visible a full mile distant where the autumn planting ended and the spring planting began, each year during the operation. Some parts of the hill had been burned for the sake of producing young Heath for the grouse some years previous to enclosing it, and upon such parts the difference of growth was still greater than upon the ground where the Heath was not burnt; upon thin gravelly parts the difference was greater than upon loam or clay soils. It was also obvious that on patches of moss ground the difference of growth varied in accordance with the different kinds of moss. Upon that description usually termed black old peat moss, the difference of growth was less than upon younger or flow-moss. In the latter case the notches made in the ground for inserting the plant opened much more upon the spring planted parts than upon those done in the autumn. One other advantage of the autumn over the spring planting in this case was that of fewer deaths having occurred. On counting the dead plants or blank spaces it was found that only about 5 per cent. of deaths occurred upon the autumn planted ground, while from 10 to 12 per cent. had died upon that planted in spring. The advantages of autumn over spring planting are even greater than words can adequately express. It appears to me that the greatest gain after all consists in the general vigour the plant acquires in its new position, for on closely examining the plant a year subsequent to planting, say in the autumn or winter after the first growth has been made, the leaves or pins of the Scots Fir, Norway Spruce, &c., are longer, broader, and more fleshy, and the buds larger and better developed, and the shoots, although not much longer on the autumn than on the spring planted trees, yet the whole structure of the plant presents such a superiority of growth as to convince any one of the immense advantages it had gained over that of those planted in spring.

As regards hard-wood trees the advantages gained are equally great, though manifested in a somewhat different manner to that of deciduous ones. One very obvious mark of difference is that of the freshness, roundness, and fulness of all the buds at the end of the first year's growth, and the scarcity of dead twigs at the ends of the branches. On very carefully and minutely examining hundreds of trees of all sorts and sizes, I have found that there are decidedly fewer sickly, diseased, or dead branches upon those trees planted in autumn than in spring. Other circumstances in both cases being equal, as a rule the larger the plant of whatever species the earlier in autumn it requires to be planted, not that small plants are less benefited, but the difference is less obvious in the growth of very young ones than of those further advanced. There are also much fewer deaths proportionally in the latter than the former class. One other very decided and general advantage of autumn over spring planting (though different and distinct from any of the others) is that of overtaking much of the work of planting, which in many cases could not be done if left over till spring, for it is but too well known in the practical operations of forestry that the spring season of planting, however early commenced and protracted, is too short to accomplish the work contemplated; consequently a considerable portion of what was intended to be done has to remain undone for another season, and is consequently often never done at all. Those, therefore, who have planting to do, should ever remember not only the forester's motto, "Aye be stickin' in a tree," but the equally sage advice to be doing it early, which signifies that whenever the young wood of any species of tree is sufficiently ripe and matured, planting may safely be performed, and that too with alacrity. *C. Y. Michie, Cullen House, Nov.* 25.

FLORISTS' FLOWERS

The Chrysanthemum.—It is very pleasing indeed to see the wide-spread and ever increasing interest which is taken in the Chrysanthemum. The exhibitions are more numerous than ever. Exhibitors increase in a rapid ratio, and there is no falling off in the quality of the flowers exhibited, taking them as a whole. This year there have been some wonderfully fine cut flowers exhibited in all the sections, and it is very desirable that no section should be omitted in the large exhibitions. We cannot afford to lose any of them.

The large-flowered incurved section stands deservedly first, and in this there is no falling off. In some cases as many as twenty collections of twelve blooms were staged for one set of prizes. Some of the schedules do not specify whether the blooms should be incurved or not, they simply say large flowers, so that in one instance an exhibitor had incurved, reflexed, and large flowered Anemones, all in one stand. The experienced exhibitor knows better than to risk his chances of success in that way, but there are many new aspirants to fame, and it is as well to state for their information that a stand made up of such flowers, however fine they might be, would not have the ghost of a chance with fairly good stands made up of incurved flowers. In such a case it is no use appealing to the broad terms of the schedule. The flowers themselves are eloquent enough. At the Borough of Hackney show, held at the Royal Aquarium, Westminster, some useful lessons might have been learned in staging flowers of this class. There were several collections of cut flowers from Liverpool shown there, and in the stands were some of the finest flowers I have ever seen; but the exhibitor threw away all his chances of success through his bad dressing, or rather want of dressing, and also by putting flowers into his stands that were intrinsically bad, and which the most skilful dresser could not by any means bring up to the stardard of form required by the rules of the florist. There were a number of flowers that counted for nothing in the Liverpool stands. Fingal, for instance, was placed at the left hand corner of the stand in the back row. Many exhibitors place their best flower in that position, and they are wise in doing so; but in the eyes of a judge who acts by the recognised yet unwritten standard of excellence, Fingal would scarcely score a single point in a maximum of six to each flower. Let any one compare such a flower with Prince of Wales or Prince Alfred, also dark flowers; and a person who has not even had one point of excellence pointed out would select the refined incurved flowers. Compare Mrs. Haliburton and Mrs. Geo. Rundle, two white flowers of distinct types. A good flower of the first-named would not count in a stand; while the latter would almost be sure of the highest place. There are no new seedlings in this section; indeed those regarded as new are simply different colours sporting from the types.

The Japanese sections has now taken a high place in the estimation of the public; their quaint and varied forms and colours outrage all the notions of the florist. There seems also to be several workers in the field trying to raise seedlings, and they may claim a considerable amount of success. Messrs. Dixon & Co. have introduced four very good varieties, which have been well shown this year, viz., Red Gauntlet, Sarnia, Ethel, and Peter the Great; the last-named may be in direct descent from the Japanese, but in form it is more of the large-flowered Chinese, still it is a very fine primrose-coloured sort; Yellow Dragon, Fair Maid of Guernsey, Striatum, Grandiflorum, Gloire de Toulouse, Red Dragon, Baron de Prailly, and Fulgore were exhibited in fine form by Mr. Jordan, gr. to J. Boustead, Esq., of Wimbledon.

The large-flowered Anemones seem to be omitted in some schedules, but this is surely a mistake. Although there is nothing new to chronicle in the section, many of the old ones are singularly beautiful—Fleur de Marie, of delicate purity, and the old-fashioned Gluck with its golden flowers; Prince of Anemones, and Louis Bonamy, too, cannot be dispensed with.

The pretty Chusan Daisy has steadily progressed under the care of the seedling raiser. "R. D." fully described the best sorts for specimen culture last week, although I think the list might be improved. For instance, Golden Cedo Nulli is the best yellow sort for plants; Antonius comes next. St. Michael is the best for quality of flowers, but it is not so easily trained. General Canrobert I would omit. Cedo Nulli, the original type, one of the best Pompons in existence for pot culture, is not mentioned. The bronzy purple Cedo Nulli is a bad sport. The Anemone-flowered Pompons are very pretty, but the only one useful for specimens is Antonius. Every large exhibition should provide a class for them. As cut flowers they are exhibited three blooms together, with stems and leaves, and very pretty they are. Madame Montels, Marie Stuart, Dick Turpin, Firefly, Mr. Astie, Perle, Madame Chalonge, and Calliope are amongst the best of them.

The question may be asked, Is there any room for improvement in the manner of exhibiting Chrysanthemum flowers and plants at exhibitions? I certainly think there is. In most cases the plants are too severely trained, the shoots are turned and twisted during the summer to obtain an unnatural dwarfness, and this also has a tendency to dwarf the flowers. I recently, in writing of Mr. Gorton's garden, The Woodlands, Eccles, near Manchester, commented on the wonderful growth of his plants. Such examples, if shown at an exhibition as plants, would certainly stand before the best dwarfed specimens I have seen this year. I have grown plants in the usual way for exhibition, but I shall not do so again. The time occupied in training is a great drawback, and the result does not justify the means used. Even if the plants were intended for exhibition, a good judge would rather give the highest awards to plants that had been grown naturally than to such as had been unnaturally dwarfed. Certainly a plant, whether for public exhibition or for decorative purposes at home, ought, if possible, to show the natural habit of the plant. I would also advise all exhibitors to grow only incurved sorts, and omit any that would be considered hybrids. There are plenty varieties that come up to the florist standard suitable for specimens, and the judges will always give them the preference. I certainly would advise a class in the schedule of the larger societies at least for a group of plants grown to show the quality of the flowers and natural training of the plants. Many might show in this class who cannot find time to grow the more elaborately-trained specimens. Some of the Japanese make good specimens, and a class for them grown in pots would prove an interesting feature. As to the cut blooms I certainly think an alteration might be tried, the long lines of stands are certainly monotonous. I saw a stand at Chelmsford in Essex, which gained the 1st prize in its class; the flowers were shown with leaves as grown, the stems were about 3 or 4 inches high, which carried the blooms well above an undergrowth of fresh green moss. It certainly as a stand was much more effective than those staged in the usual way with blocks. It is not likely that exhibitors would show their flowers in that way, unless the stipulations of the schedule compelled them to do so. It is not possible to dress a flower well unless there are means to hold up the outer petals, and for this purpose the usual wooden cups answer very well indeed. I would advise exhibiting the Japanese with foliage as grown, and would urge the propriety of encouraging triples of Anemone Pompons; also a class for large flowered reflexed, with foliage, for they ought to be encouraged though they have not the least chance with incurved blooms. *J. Douglas.*

NEW FUCHSIAS.—Mr. James Lye, of Clyffe Hall Gardens, Market Lavington, is one of those persistent raisers of new flowers with a strong belief that, for himself at least, the Fuchsia has not had its day; and he shows the steadfastness and fervour of his belief by raising new varieties. As one of the leading exhibitors of Fuchsias in the country he has come to the conclusion that good exhibition Fuchsias must of necessity be well adapted for decorative purposes. This was well illustrated in some of the new varieties he distributed last year, and notably in James Huntley, a fine free blooming dark variety that will be one day grown for market purposes; and Charming, Elegance, Beauty of Wilts, Letty Lye, and Miss Lye are all most useful varieties that exhibitors will be found looking for in the time to come.

Some new varieties raised in 1877, and proved again in the present year, are remarkable for their large, stout, bright-coloured flowers, in which the hues are both well defined and contrasted. They are Crimson Globe, massive coral-red tube and sepals, pale violet-purple corolla, very stout and fine; and Spitfire, bright red tube and sepals and pale purple corolla, large bold flowers. These are both high-class dark varieties, and are of excellent habit. The pale coloured varieties predominate, and consist of Miss Welsh, delicate blush tube and sepals, rich orange-carmine tinted with violet—a very pretty and effective variety; Star of the West, cream tube and sepals, pale pinkish violet corolla, with distinct Picotee margin of orange — very striking; Nelly Lye, white tube and sepals, with a pale orange-rose coloured corolla tinted with violet, long like fulgens, but very stout and fine—a good decorative variety; Pink Perfection, creamy white tube and sepals, rich pink corolla dashed with violet, stout and fine; and Mrs. Grant, blush tube and sepals, pink and orange-rose corolla, very fine in appearance and massive in proportions.

That Mr. Lye has worked into a fine strain of seedling Fuchsias cannot be denied, and with a full belief in the possibilities of his favourite flower he does wisely to seek to improve it to its fullest extent. It is by working in this spirit, and with this laudable object in view, that florists have done such good work in the past, and are hopeful of cheering results in the future. Surely such a worker can declare:—

"We live in deeds, not years—in thoughts, not breaths;
In feelings, not in figures on a dial:"

and in so far as his thoughts and deeds can be transmuted into forms that bear witness to progress, he does not labour in vain. *R. D.*

Reports of Societies.

Edinburgh Botanical: *Nov.* 14.—The first meeting of the forty-third session was held on the 14th inst. Dr. T. A. G. Balfour, President, occupied the chair, and delivered an opening address, of which the following is a brief abstract:—

Insectivorous Plants.—After a feeling allusion to the absence of Mr. M'Nab, the President remarked that he had hoped that, after the appearance of Darwin's classic work on insectivorous plants, we should have ceased to hear the objections, whether in the form of ridicule or of a graver kind, which used to be urged against this subject. He was sorry, however, to say that this was by no means the case, for there were still some of scientific renown who rejected the conclusions of Darwin on this subject either in whole or in part. He intended on this occasion to deal with some of these objections, and to present to the Society some of the researches which have been prosecuted since Darwin's book appeared, and which seemed to him to support the conclusion as to the similarity between some of the animal functions and those which the Dionæa performs.* A full investigation of its anatomy had been made by Kurz, Casimir de Candolle, and Franstadt; Batalin and others had studied the subject of the motor influences at work in the closing and reopening of the leaves; while Munk and Sanderson and Page had carefully applied themselves to the study of the electrical conditions of the leaf of Dionæa both in an unexcited and excited state. But while all these subjects are most interesting and inviting, he felt that he must on the present occasion limit himself to a defence of the three great functions of this plant, viz., digestion, absorption, and assimilation, as that would fully occupy the time allotted him; and as these subjects form pre-eminently the field on which the contest is waged. After having disposed of some subordinate objections he proceeded to state that the principal scientific objections seemed to be on the ground that the functions attributed to the leaves of Dionæa, &c., were opposed to the whole course of Nature. Having cited instances of these objections he proceeded to answer them by quoting many instances in which, both in structure and function, there was a great resemblance between some animals and plants, and referring to the interesting researches of Hanstein and Famintzin as showing the striking fact that the earliest development in both proceeded from three layers.

He then took up the special question of "Digestion," and quoted from Gorup Besanez and Will, who from the seeds of the Vetch had, by means of glycerine, abstracted a ferment which was capable of dissolving albuminous substances. He then showed how Prof. Morren, in his lucid and able memoir on *Vegetable Digestion*, had swept away the ground from beneath his opponents, and after giving a cursory sketch of the contents of that work, he next adduced Van Tieghem who, in his recent article on "The Digestion of Albumen," maintains that "all living beings digest," and who, after speaking of internal and external digestion, declares "that similar digestive regions can be met with together or separately upon each of the three fundamental organs of vegetable apparatus—the roots, the shoots, and the leaves," and he further showed that the same able observer and skilful experimenter had proved that in some instances the albumen of the seed, even when the embryo was removed, could be digested by the cells in which it was contained. After dwelling a little longer on these interesting researches, he next proceeded to consider the subject of absorption, and referred to the recent experiments of Boussingault, which proved that leaves could not only absorb water, but also weak saline solutions, and he also remarked that the influence of pressure on absorption, which the same high authority had announced, had a peculiar applicability to the case of Dionæa. He next instanced the successful experiments of Franstadt with aniline red and saffron, with which he had stained white of egg, and which proved beyond doubt that absorption had taken place, as was also established by the researches of a chemist who, in the case of Drosera, employed flies soaked in a solution of chloride of lithium, and afterwards found traces of the metal in all the tissues. He next passed in review the experiments of Mr. Lawson Tait, on Drosera also, and announced as his conclusion that "it is therefore perfectly certain that the Sundew can not only absorb nutriment by its leaves, but that it can actually live by their aid alone, and that it thrives better if supplied with nitrogenous material in small quantities." The President then remarked that this last statement of Mr. Tait's brought us to the final point which he intended to consider, viz., that of assimilation. Here, after referring to some experiments of his own some years ago, and to those of De Candolle, he went on to consider the careful observations of Mr. Francis Darwin in regard to the Drosera, by which it seemed to be proved incontestably that animal food was really assimilated, and so contributed to the nutriment of the plant, but he also showed that the principal increase was in the reproductive organs, which accounted for the mistakes which had been made by some observers.

As in a remarkable degree supporting these conclusions of Mr. F. Darwin, he gave the results obtained by Drs. Kellermann and Raumer, which being so exactly alike seemed to settle the question as to the actual nutriment derived from the leaves, in so far at least as the Drosera is concerned; and, as there are so many points in common between it and the Dionæa, it seems to be taking no great liberty to assume that the latter is also nourished to a large extent by its leaves.

In concluding, he alluded to the recent meeting of the Cryptogamic Society, and trusted that it would have the effect of awakening a fresh interest in that department of botany, and of giving a new stimulus to its more extensive cultivation; for it is certainly from the study of these lowly organisms that we may expect to obtain the solution of some of the more difficult problems of vegetable physiology.

Mr. France, Penicuik, read a paper "On the Mycelium of Fungi attacking the Roots of Young Scotch Firs," which gave rise to an interesting discussion.

Mr. Sadler, acting secretary, read a letter received by Professor Balfour from the India Office in London, stating that a collection of specimens of Indian woods had been recently sent home, which the Government of India had requested should be presented to the Royal Botanic Garden at Edinburgh. The collection consisted of 147 pieces, which had been forwarded to the Botanic Garden. The President suggested that a special museum should be erected in the Botanic Garden for the reception and proper display of this and the other collections for which no room could at present be found. Mr. Sadler said that the Scottish Arboricultural Society had very valuable collections of woods grown in Scottish forests, cones, and other forest produce, as well as specimens of the rocks on which various species of trees grew best, but the specimens at present were packed in boxes and placed in a dark room for want of museum accommodation at the Botanic Garden. Such a museum, with the existing nucleus of collections of home and foreign woods and cones, would be very valuable, especially in connection with the proposed school of forestry and the new Arboretum.

Mr. Sadler exhibited specimens of the Castor-oil plant in good foliage and flower, which had been grown by the Rev. Mr. Herdman, Blairgowrie. The seeds were taken from a cargo of Wheat imported direct from Calcutta.

Dr. Paterson, Bridge of Allen, exhibited a branch of Osmanthus ilicifolius in fine flower, from his garden there.

Mr. A. Stephen Wilson, North Kinmundy, exhibited and presented to the museum at the Botanic Garden, beautiful prepared specimens of ergotised grasses, representing fourteen genera and twenty-one species.

Ealing, Acton, and Hanwell Horticultural Society: *Nov.* 20.—If nice autumn weather, an abundance of exhibits, good average quality, and a perfect crowd of visitors make up success, certainly the venturous committee of the Ealing Society is to be congratulated on their latest enterprise. Having absorbed within its range of operations the former local Chrysanthemum Society, it was necessary to occupy the field before covered by that body, and to make the show more thoroughly representative various classes for other plants, flowers, fruits, and vegetables were largely introduced; thus opening the competition to all the usual exhibitors, including a large number of cottagers. As small plants and great variety in exhibits admit of a more attractive arrangement than where the objects are limited in number, the very utmost was made of the space at the disposal of the superintendent and secretary, Mr. R. Dean, and a most charming whole was produced. Around the sides varied and beautiful groups of flowering and foliage plants alternated with tables filled with cut flowers, fruits, and vegetables; and even Potatos, being set up neatly in dishes and punnets, were not incapable of aiding in the general effect. Down the centre of the hall was placed a wide table of varying heights, to suit the nature of the exhibits placed upon it, and this was literally filled with plants in bloom and cut flowers, whilst beyond, the raised orchestral platform was filled with choice plants from Baron Rothschild's gardens at Gunnersbury, and from his neighbour, Mr. H. J. Atkinson, whose gardener, Mr. Hudson, was one of the most successful exhibitors in the various classes. Fronting these groups of plants were a large number of boxes of cut Chrysanthemums of remarkable size and quality, sent by Mr. C. Turner, of Slough, and Messrs. C. Lee & Sons, from their Ealing establishment, which is under the charge of Mr. Cannon. The finest groups of Chrysanthemums in pots, arranged for effect with Palms, Ferns, &c., came from Mr. T. Nye, of Castle Hill, whose gardener, Mr. Hart, displayed good decorative abilities. The best collections of Chrysanthemums in pots, and also cut blooms, came from Mr. Hinchcliffe, of Acton; but there was considerable competition in all the classes. A large number of berried Solanums were sent, the best coming from Mr. Hepper, gr. to C. O. Ledward, Esq., of The Elms, Acton, whose plants were of a distinct drooping strain [? capsicastrum], freely berried, and singularly ornamental. Cyclamens were of fair average quality, although outdistanced by the splendid group of those staged by that celebrated market cultivator, Mr. H. B. Smith, of Ealing, whose plants were marvels of bloom for the time of year. Chinese Primulas were remarkably good, the 1st prize for the best six plants going to Mr. C. Weedon, florist, of Ealing, all of which would have done credit to any show. Mr. Weedon also exhibited a group of these that included several exceedingly beautiful kinds. Messrs. Hooper & Co., of Covent Garden, sent a charming lot of their elegant dried flowers and grasses, and Mrs. H. B. Smith had a superb brace of bridal bouquets and a floral cross, all most elegantly arranged. Mr. Hudson was placed 1st for a collection of miscellaneous cut flowers and the same for the best collection of vegetables, Apples and Pears. A composite Pompon Chrysanthemum, consisting of seven sorts growing in one large pot, shown by C. N. Peal, Esq., one of the committee, was greatly admired as a floral curiosity. The cottagers' vegetables were first-rate as usual, and were staged in great abundance. The competition for the best dish of cooked Potatos brought by cottagers included twelve competitors, six prizes being given; there was not a badly cooked Potato in the entire lot, and most of them were capitally done. There are more good cookers of Potatos amongst us than cynical grumblers give us credit for. The show was kept open until nine o'clock, and during the evening was visited by hundreds of the working classes. At

* For he confined himself to the Dionæa muscipula, as being *facile princeps* of insectivorous plants, and his allusions to others of that class were simply to illustrate by analogy the functions of Dionæa.

6.30 the Right Hon. Spencer Walpole, President of the Society, distributed the cottagers' prizes in his usual kindly and genial way.

Southampton Chrysanthemum, Fruit, and Flower Show: *Nov.* 19.—The second winter exhibition of this flourishing Society took place on the above date at the Victoria Skating Rink, a building every way adapted for such an exhibition, and was a great success, both as to exhibits and finances, as over 4000 visitors patronised the show. The flowers of Chrysanthemums were, on the whole, fine, some exceedingly so, but good plants were quite the exception, and, so far as the writer's experience extends, this is the case generally this season. In the open class for the best collection of Chrysanthemums arranged in a space 8 feet by 5 feet there were four competitors, all showing creditably, Mr. Wills, gr. to Mrs. Pearce, The Firs, Bassett, taking first honours; Mr. Avery, gr. to A. Z. McCalmont, Esq., Highfield, 2d; Mr. Amys, gr. to the Hon. E. A. Yorke, M.P., Netley Fort, 3d; and Mr. Browning, gr. to F. Holloway, Esq., 4th. In the class for four trained specimens or standards Mr. Amys was the only exhibitor, and for a single specimen, though several were shown, there were none calling for special remark. In the nurserymen's class for eighteen plants in not less than nine varieties there were but two lots staged; the first award was made to Messrs. Jackson & Son, Kingston, for medium-sized plants which were well flowered; the second place being taken by Mr. Ladham, Shirley. In the gentlemen's gardeners' class for twelve plants in not less than six varieties there were four lots staged, the first award going to Mr. Avery, the second to Mr. Wills; 3d, Mr. Amys; and 4th, Mr. Browning. The class for six Japanese varieties was a poor one, three lots only being staged, and one of them was disqualified for showing four kinds only.

The cut bloom classes were good throughout. In the open class for twenty-four distinct varieties, Mr. Wills was 1st; Mr. Avery, a good 2d; and Mr. Vickery, gr. to Colonel Bruce, Testwood Park, 3d. In the nurserymen's class for twenty-four blooms, not less than twelve kinds, Messrs. Jackson & Son easily won with a grand lot; Messrs. W. & G. Drover, Fareham, being 2d. In the gentlemen's gardeners class for like numbers, there were several competitors, all showing very good flowers, the first award going to Mr. Peckham, gr. to T. Walters, Esq., West End; the 2d to Mr. Browning; 3d to Mr. Jones, gr. to Lady Barker Mill, Mottisfont Abbey. The following were the varieties most generally shown both in plants and cut blooms:—Anne Salter, Alma, Alfred Salter, Beverley, Cloth of Gold, Countess of Warwick, Duchess of Roxburgh, Duke of Edinburgh, Fingal, Globe, Gloria Mundi, Golden Beverley, Golden Queen of England, Isabella Bott, Jardin des Plantes, Lady Talfourd, Pink Perfection, Progne, St. Patrick, and White Globe. Amongst the best Japanese varieties were:—Apollo, Bronze Dragon, Chang, Elaine, Fair Maid of Guernsey, Fulton, Gold Thread, James Salter, Ne Plus Ultra, Purple Prince, Red Gauntlet, and The Sultan. Prizes were offered for groups of miscellaneous plants arranged for effect in a space of 10 feet by 7 feet, and three competitors entered the lists, Mr. Wills taking the 1st place, Mr. Amys a good 2d, and Mr. Browning 3d. In the nurserymen's class for a similar group Messrs. Jackson & Son, Messrs. Oakley & Watling, and Mr. Ladham competed, and the awards were made in the order named. Though there was a great improvement in the arrangement of these groups compared with the summer show, there is still room for further improvement. When will exhibitors of artistic groups learn that a broken or undulating surface is far more pleasing than a wedge-shaped one? Prizes were offered for Cyclamens, Primulas, and Solanums, but except the 1st prize lot of the latter, which came from Mr. Amys, all were poor. Two very good collections of Orchids were staged, that from Mr. Osborne, gr. to H. J. Buchan, Esq., Wilton House, containing finely flowered examples of Cypripedium Sedeni, Oncidium Rogersi, Oncidium crispum, and Odontoglossum Alexandræ. Messrs. Jackson & Son had the 2d award. Amongst the best of theirs were Oncidium tigrinum, Oncidium crispum, and Oncidium Rogersii.

The show of fruit was poor, as might have been expected for the prizes offered. Mr. Pragnell, Sherborne Castle, had a good Pine, Smooth Cayenne; Mr. Budd, gr. to F. G. Dalgetty, Esq., Lockerley Hall, two good bunches of Alicante Grapes; Mr. Avery four good dishes of dessert Pears, and the same exhibitor three fine dishes of kitchen Apples and three dishes of dessert Apples, together with about forty varieties of Apples, not for competition, the above constituting the cream of all the fruit staged. Vegetables have not been shown at Southampton in such good form before. In the class for eight varieties there were ten competitors all staging fine produce, the champion vegetable grower Mr. Pragnell winning 1st honours, as a matter of course. In his collection were magnificent white Spanish Onions, Tender and True Cucumber, Snowball Turnips, Schoolmaster Potato, Williams' Matchless Red Celery, Maltese Parsnip, Veitch's Autumn Giant Cauliflower, and Leeks. There were several classes for amateurs and cottagers, but the competition was very limited, and nothing was shown of superior merit or to call for special remark. The arrangements of the show, which were perfect, and the success of it, is in no small degree attributable to Mr. Fuidge, the secretary, who is at once the most enthusiastic, ubiquitous, and obliging secretary any society need wish to have.

Notices of Books.

Talks about Plants, or Early Lessons in Botany. By Mrs. Lankester. Griffith & Farran.

This is a little book couched in the form of a dialogue between a grandmother and her grandchildren. Some of the more conspicuous flowers of each successive month of the year are popularly described, and numerous anecdotes and interesting details interspersed to break the dulness of technical descriptions. As we felt ourselves incompetent critics, and perhaps prejudiced against the conversational style of writing books—the conversations being so different from those in real life—we placed the work in the hands of a child, who gave the verdict that "she liked the book very much, but that she couldn't understand how a 'granny' could know so much." The instruction, according to her view, should have been given by "papa." This may be taken as a compliment to the authoress, as it must be added that the critic's idea of the acquirements of a granny was purely subjective, and not derived from personal experience. The work has had the advantage of revision by Professor Lawson, and is illustrated by some coloured plates which are more showy than correct.

Publications Received.—Bulletin d'Arboriculture.—Hamburger Garden Zeitung.—Norddeutches Inseratenblatt. — Sempervirens. — Sachsiche Gewerbe-Vereins-Zeitung.—Facts about Flowers.—Der Deutsche Garten.—Der Deutsche Garten Zeitung.—Revue Horticole.—Das Wichtigste aus der Theorie des Gartenbaues, von Max Kolb, Stuttgart (Eugen Ulmer)—Report of the Royal Botanic Garden, Ceylon—Untersuchungen über die Ringelkrankheit und den Russthau der Hyacinthen, von D. P. Sorauer—On Epping Forest, and how best to deal with it, by Alfred Wallace—Gartenflora—The Arrows of the Bow, the Christmas number of the *Quiver* (Cassell & Co.)—Die Zimmer Fenster und Balkon gärtnerei, &c. (Window Gardening, &c.; a free translation of Mr. Burbidge's Domestic Floriculture).—Familiar Wild Flowers (Cassell).



Natural History.

Notes on the Owl.—It is astonishing what a vast amount of superstition and ignorance still exists in various country places with respect to owls. Some human owls set to work two years ago and destroyed a family of their far wiser winged relatives who had occupied an old ruin for ages, declaring that "the howls carried off hevery chick they 'ad." The "howls" disappeared, and so still did the "chicks," when one day the real thief, a large kite, was shot in the act. The ancients have much to answer for in associating this bird with horrors; even the especial favour of Minerva cannot undo all the mischief Virgil, Ovid, Pliny, &c., have done in their writings; and the Germans, together with our own authors of more modern date, have seemed to follow suit — witness Rare Ben and the Bard of Avon. It is the owl that shrieks in Lady Macbeth's ear when Macbeth is doing the fatal deed; it is the owl that is abroad in the *Masque of Queens*, with

> "The bat and the toad,
> And so is the cat-a-mountain,"

when the third charm is being worked by the witches. Chatterton also writes of "the Dethe Owle;" Grey of the "moping Owl;" and both Sir Walter Scott and Coleridge have placed the bird in rather doubtful company:—

> "The ban-dogs bay and howl,
> And from the turrets round
> Loud whoops the startled owl,"

when the Lady of Branksome sits in Lord David's western haunt. Nor have painters ancient and modern failed to associate the owl with all that is repulsive and disagreeable; see Hogarth's murder scene in the "Four Stages of Cruelty;" and look how the bird figures in *Faust*, and in Retzch's illustrations. But enough of this; it is time we were better informed and more enlightened on the subject.

The owl is the farmer's friend. Its sense of hearing is most acute; its auricular organs are so formed that they catch even the slightest sound or movement. Its plumage likewise is so arranged that it can fly without betraying to its natural prey the approach of a foe. I wish some naturalist would kindly tell us all about the anatomy and flying machinery of the owl. It seems to float in the air like a ball of down when out foraging, but very different is its flight when followed by a troop of small birds bent on driving it homewards.

I have heard it stated that owls will catch fish, but I never witnessed anything of the kind. A friend of mine, who is fond of watching the habits of birds, told me that owls were as partial to perch and small fry as cats; that they have been seen to take them from shallow streams in the vicinity of the nest, and carry them off to feed the young birds with. But I have seen owls twice in the course of my life in rabbit-holes. The first time I was a little startled. My dog had alarmed the colony, who were popping into their holes in all directions, when suddenly there appeared, close to my feet at the side of the bank, a curiously sage-looking creature blinking at me from out of a rabbit-hole; before I could comprehend what the animal was, it emerged, and took flight across the fields towards an old mill. I saw by its flight, &c., that it was an owl, and not, as I had at first imagined, a poaching cat that I had routed. Another time, wandering over the hills near Pemmon, on my way to Puffin's Island, I saw an owl enter a rabbit-hole, and it has ever since been a puzzle to me how a big bird, once in, can well get out of such a place. Owls see in the dark, so perhaps they can go, like the rightful owners of the runs, right through; for it would be impossible, I suppose, for the bird to turn round in so small a space. Gilbert White himself, in the neighbouring village of Selborne, could not have watched with greater interest, the white owls he mentions in his charming work, than I did the pair who built under the eaves of this church; and many a fright did they give a nervous "unappropriated blessing," then living near, who had to cross the churchyard on her way home from my quarters. We sometimes accompanied her for the purpose of hearing the owls hiss as we walked by their nest, and tried in vain to assure her that the noises she heard were made by a bird.

It is a really pretty sight to see an owl hunt a field for its food. There is a farmyard at the bottom of this garden, and I have often seen the church owls, as I named them, foraging for mice in it. The number they caught—judging, as White did, by the frequent return visits they made to the nest—must have been very great. Sometimes our owls came out rather too early in the evening, and got "mobbed" by small birds. They deserved it, for they were wont to take young swallows out of the nest, and I rather enjoyed seeing them driven off.

German bird-catchers imitate the note of the owl, and set up a stuffed specimen, sometimes a tame living one, in order to secure jays, who particularly dislike this bird. No sooner do the jays hear what they imagine to be the voice of their foe than they fly screeching round him, and get entangled in the well-limed twigs which have been artfully placed all round the decoy. *Mrs. Alfred Watney.*

The Bittern.—My neighbour, Mr. Minion, a farmer, lately caught a bittern in a trap. It is a beautiful brown bird, stands 2 feet in height, with a tassel at the back of his head, something like the heron. It is very rarely seen in the Midland Counties; the oldest man living here does not recollect one being caught before. It was caught in a steel trap placed just beneath the surface of the water for rats. We have had one visit during the last fifty years of the osprey, or sea eagle. On one occasion I

saw a large bird flying over the garden, with something red and shining beneath him, the spread of his wings from tip to tip being nearly 5 feet. It settled on a large Oak close by, and I out with the gun and knocked it down. The piece of "something red" came down first, and it proved to be the half of a good-sized carp which he had fetched out of the lake below. *W. Brown, Mercvale, Warwickshire, Nov.* 22.



Law Notes.

IS A BAILIFF ENTITLED TO MORE THAN A MONTH'S NOTICE?—A correspondent asks us the following questions:—A bailiff is engaged at a yearly salary, payable quarterly. He has a house rent-free and garden, and the agreement for service is in writing. His master gives him a month's notice to leave. Can the bailiff demand notice in writing? and can he demand a quarter's notice, or quarter's salary in default?

We think that both questions should be answered in the negative. For the following reasons:—

In the case of domestic servants, a hiring without any engagement as to the duration of the service will be construed to be a hiring for the year; the service in such case may be brought to a close by a month's wages or month's warning.

A head gardener living in a house in his employer's grounds has been held to be a "domestic servant" within this meaning (Nowland *v.* Ablett, 2 Cr. M. & R. 54, and Johnson *v.* Blenkinsopp, 5 Jur. 870). The same has been held of a huntsman (Nicoll *v.* Greaves, 17 C. B., N.S., 27).

The hiring may be terminated by word of mouth or in writing. The latter will make the notice indisputable, but is not necessary. If the servant is not "domestic" or "menial," the presumption usually is, that he is entitled to three months' or longer notice, according to the particular custom of his class of employ. But in this case we think a bailiff comes under the head of domestic servants or labourers. (See Reg. *v.* S. A. Wortley in Pearson's Crown Cases.) This was an appeal to the superior court upon a point of law—whether the bailiff was a partner or a servant. He had been engaged by the Rev. J. Butterworth at a salary of £25 a-year, and one-third nett profits of the farm in question. He was prosecuted for embezzlement. To support the case for the prosecution, the agreement was put in. The prisoner's counsel objected to its being received in evidence, on the ground that it was an agreeement for partnership, and as such required a stamp. The question for the superior court was whether this document should have been admitted unstamped, and this in turn depended on whether the prisoner was to be considered a servant or a partner. The Court consisted of Lord Campbell, Barons Alderson, Platt, and Martin, and Justice Talfourd. They unanimously held that the prisoner was a labourer (and not a partner). If so, *a fortiori* we should say that any bailiff who merely receives a salary, and in no way shares profits, is a labourer (or at least a menial servant) in the eye of the law, and as such is not entitled to more than a month's notice. If, however, the written agreement contain evidence of an intention of the parties to exclude the ordinary rule of a month's notice and a month's warning, the case would be different. *Agricultural Gazette.*

TENNANT *v.* RAWLINGS.—In this case, which has been fully reported in our issue of the 2d inst., Mr. Moreton attended at the Bloomsbury County Court to receive the decision of Mr. Judge Russell, and to move if necessary for a new trial on the point of law reserved.

His Honour, in reviewing the facts of the case at considerable length, said that the defence was of a twofold character, namely, that the work was not done in a satisfactory manner, and that the plantiff was debarred in the action by holding the eheque he had received from the defendant and not returning it, and on the latter point he had given the plaintiff's counsel leave to move the Court for a new trial on point of law, notwithstanding the decision which the jury had arrived at.

On the first point his Honour considered that the influx of water into the stokehole of the greenhouse was not contemplated in the agreement, but still he was of opinion the work was not executed in a workmanlike manner inasmuch as, from the state of the stokehole, the greenhouse was practically useless for the purpose for which it was constructed, and that the defendant was fully justified in recovering any expense he had incurred in rendering the greenhouse useful to him.

After his Honour's opinion Mr. Moreton moved the Court for a new trial, which his Honour granted, allowing it to be fixed for a day to be named, but reserving the costs of the application.

Variorum.

SINGAPORE BOTANICAL AND ZOOLOGICAL GARDENS.—The following extracts are taken from Mr. Murton's annual report to the Governor of the Straits Settlements for 1877:—

"The small beds around the Orchid-house have been very gay during the year, and have proved beyond a doubt the superiority of small over large beds in the tropics for decorative purposes; as in this climate, where vegetation grows so fast, flowering plants soon put on a weedy appearance unless they are often renewed and constantly attended to.

"Some very showy annuals, as Balsams, Zinnias, Coreopsis, and Phlox Drummondii may also be grown in small beds, whereas they would be lost in large ones, and although their beauty is of short duration, they are so gay while they last that they amply repay any little additional attention and trouble in sowing, &c.

"During the dry season Crossandra infundibuliformis was especially showy, and quite equalled some of the Zonal Pelargoniums used for ribbon bedding in England. I have also found Cyrtantheta Pohliana and its variety superba—the latter by far the best—Russelia juncea, Eranthemum bicolor variegatum, Angelonia floribunda, Sericographis Ghiesbreghtiana, Iresine Herbstii, Tradescantia zebrina, T. discolor, Alternantheras, and various species of Coleus to succeed here for ribbon planting; and for centres of large beds nothing is better than Dracænas, Aralia Guilfoylei, or Abutilon Thompsoni when kept judiciously pinched.

"*Economic Garden.*—This is now being laid out on the site of the old nursery, and patches of Liberian, Cape Coast, and Arabian Coffee have been planted as well as Cocoa, China and Assam Tea, and Ipecacuanha.

"Several useful and economic plants have been introduced during the year, the most noteworthy being two new kinds of South American rubbers, viz., Castilloa elastica and Manihot Glazioui. The Dragon's-blood tree (Dracæna Draco), Monstera deliciosa, Musa Cavendishii, Sarsaparilla (Smilax), Alligator Pear (Persea gratissima), New Zealand Flax (Phormium), Cubebs (Piper Cubeba), Salt-bush (Rhagodia hastata), Psidium Cattleyanum, Camphor (Camphora officinarum), Allspice (Eugenia Pimenta), Matico (Artanthe elongata), Nux Vomica (Strychnos Nux-vomica), Upas Tiente (Strychnos Tiente), the Doum Palm (Hyphæne thebaica), Carob (Ceratonia siliqua), &c.

"Consignments of Liberian Coffee and Heveas have been received from Kew, and plants of Liberian Coffee. Para rubber, Brazil rubber, and the 'Ceara scrap' rubber have been planted at Durian, Sabatang and Kwalla Kangsa for trial purposes, and plants of Ipecacuanha have been forwarded to Sungie Ujong, as well as plants of Assam and Chinese Tea, for the same purpose.

"The Liberian Coffee plants sent to Larut in 1875 are making good growth, with large healthy foliage, forming a great contrast to the Arabian Coffee growing beside it.

"At the request of Sir J. D. Hooker, C.B., &c., I obtained from Cochin China plants of an enormous and apparently little known variety of the Sugar-cane called the Elephant-cane, which has been stated to reach a height of 4 feet and a diameter of 7 inches in six months. Plants of this variety have been sent to Kew for forwarding to the West Indies.

"I have been very successful during the past year in raising the various species of Eucalyptus, which hitherto have proved very difficult to raise from seed in this climate.

"As the Salt-bush (Rhagodia hastata and R. parabolica) may probably be unknown in the Straits Settlements, I extract the following from the report of the Director of the Brisbane Botanical Gardens for 1875:—

"'These two species of Salt-bush, possessing wholesome and nutritious qualities and much relished by stock, have been tested, and upon account of their easy cultivation and the rapidity with which (when protected from stock) they grow into large and handsome shrubs, together with their capability of resisting both heat and drought, they are strongly recommended for artificial cultivation. Salt-bush might also be advantageously given in a cut state, in conjunction with dry food, to sheep and cattle.'

"In Singapore they seem better able to resist heat and drought than prolonged wet weather, but when the plants become well established they will doubtless survive the wet weather better.

"A good deal has lately been written about the prickly Comfrey (Symphytum asperrimum) as a forage plant for India, but I fear that it will prove of but little use in the Straits, as the climate and temperature of this colony afford too great a contrast to that of its native habitats in the Caucasus mountains. Planters in Ceylon are much disappointed with it, and some speak in strong terms of the expense they have been put to in introducing and planting it.

"The plants at present in Singapore, which have been introduced by Dr. Little, give little promise of being capable of producing 60 tons per acre per annum—the quantity advertisers promise on ordinary soils.

"Too much care cannot be exercised when recommending the introduction and cultivation of any plant into a colony, as it has often happened that the vexation and disappointment attendant on the failure of one trial have prevented others being carried out, as, for instance, the recommendation to plant Cinchona in Province Wellesley, a proposition which would never be carried out if its habits and the temperatures of its native habitats were studied, and more especially since it has been proved not to succeed as a commercial enterprise at 2000 feet elevation 4° farther north.

"The object that will be kept steadily in view, in the working of the new Economic Garden, is the introduction of new plants of economic value, and thoroughly testing their capabilities of production in Singapore, before recommending them for general cultivation, while it will also afford an opportunity to intending planters in the Malay Peninsula of seeing the various plans adopted for their cultivation, and the amount of success or otherwise attending each operation.

"As regards our native fruit trees, a good deal could be done with the co-operation of persons possessing improved varieties, as for instance, of the Rambutan, Durian, &c., which are well known to exist in the Straits; as native gardeners can be instructed in the art of inarching and budding as well here as amongst the Chinese in China, of whose handiwork in inarching fruit trees I have several illustrations.

"I regret that after a lengthened trial with the labels put down last year as described in my last report, I cannot report very favourably of the plan I have adopted, as I find that the paint is not capable of resisting the combined influences of sun and rain in this climate, and, after inquiries from various correspondents, I have arrived at the conclusion that a plan of labelling outdoor plants in the tropics, capable of standing two years, is still a desideratum.

"A plan of using iron labels and brushing them over with a composition consisting of one part of chloride of copper, one of nitrate of copper, and one of ammoniac dissolved in sixty-four parts of water, to which is added one part of commercial hydrochloric acid, has been tried in the Adelaide Botanic Gardens with considerable success, but it was found to be of no use in the Calcutta gardens."

PRIZES FOR NEW VARIETIES OF WHEAT.—At the Council meeting of the Royal Agricultural Society of England, held on the 6th inst., the Consulting Botanist submitted the following report affecting the production of new varieties of grain:—

Changes in plants are due to—

1. *Soil, food, climate, &c.*—These belong to the individual plant, and are not transmitted to its descendants.

2. *Sports*, which arise without any apparent cause, and which are handed down to a larger or smaller number of the plant's descendants.

3. *Cross-breeding*, whereby more or less of the peculiarities of both parents are found in the descendants. Cross-breeding may be of three kinds—(*a*) of individuals of the same species, and this may either be natural, as in the case of plants which are actually or practically unisexual, or artificial, when man interferes, and applies the pollen of one individual to the stigma of another; (*b*) of permanent varieties of the same species, as in cultivated plants; and (*c*) of different species of the same genus.

New varieties require to be tested by cultivation. Some of the descendants lose the character for which the variety is prized, and revert to the original stock; while others retain these qualities, and in some they may become intensified.

It is necessary to select the seed after each harvesting, in order to secure a uniform and perfect variety. Time is thus necessary to the production of a new variety. A variety secured by experiment in 1879 should be sown by the person who secures it for at least three years; that is, during 1880, 1881, and 1882, in order to establish its permanency, to get rid of the parent forms that may appear, and to secure a certain amount of seed. The seed might be sent after the harvest of 1882, and be tested in various localities by the Society in 1883.

In accordance with the above report, the Seeds and Diseases Committee, of which Mr. Whitehead is Chairman, recommended the Council to offer two prizes of £25 and £10 each, in connection with the forthcoming exhibition in London, for distinctly new varieties of Wheat which shall combine the largest yield of grain and straw per acre with approved form and size, smooth and thin skin, full and white kernel, and high specific gravity in the seed, and with bright, firm, and stiff straw. The history of each variety must accompany each entry. One sack must be delivered to the Society, together with a sample bundle of the straw, before October 1, 1879. A portion of each sample will be kept for comparison, and the remainder, divided into equal portions, will be cultivated in the ensuing season, in four localities differing in respect of soil and climate, to be selected by the Society. The prizes will be awarded for the best varieties of crop of 1880, thus cultivated under the Society's auspices, if in the opinion of the judges they possess qualities which entitle them to distinction.

The produce of the experimental crop of 1880 will be the property of the Society, and will be offered first to the competitors who submitted the seed. The Committee also recommended the Council to offer prizes of £25 and £10 for new varieties of Wheat, upon the same conditions as those enumerated before, except that the sample sacks shall be delivered to the Society by the end of October, 1882, and cultivated by the Society in the ensuing season. This will give time for the development of new varieties. The report was adopted.



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOV. 27, 1878.

MONTH AND DAY.	BAROMETER: Mean Reading Reduced to 32° Fahr.	BAROMETER: Departure from Mean of 18 years	TEMPERATURE OF THE AIR: Highest.	Lowest.	Range.	Mean for the Day.	Departure of Mean from Average of 10 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat = 100	WIND: Average Direction.	RAINFALL.
Nov.	In.	In.	°	°	°	°	°	°			In.
21	29.91	+0.25	42.6	36.8	5.8	39.7	— 2.0	33.7	79	ESE.	0.00
22	29.88	+0.19	41.5	36.5	5.0	38.8	— 2.9	33.4	84	ENE.	0.00
23	29.80	+0.11	41.5	34.0	7.5	37.8	— 3.9	33.1	84	SE.	0.00
24	29.28	−0.41	50.0	35.0	15.0	43.0	+ 1.1	41.0	96	NE.	0.15
25	29.22	−0.47	53.6	41.0	12.6	47.0	+ 5.1	41.1	93	SSE.	0.02
26	29.31	−0.38	42.0	36.4	5.6	39.2	— 2.4	37.3	94	S.W.	0.19
27	29.18	−0.52	41.3	32.6	8.7	36.8	— 4.8	35.7	96	NNE.	0.76
Mean	29.52	−0.18	44.6	36.0	8.6	40.3	— 1.3	37.0	89	variable	Sum 1.12

Nov. 21.—A very dull day. Overcast. Cold. Sun's place visible at times.
— 22.—A dull day, very cloudy and cold.
— 23.—A fine, bright, cold day. Overcast at night. Solar halo seen in afternoon.
— 24.—Overcast and dull throughout. Occasional thin rain. Temperature of the air at 9 A.M.=37°, rose steadily to 47°.2 at 3 P.M., and still furtner to 50° at midnight, this reading being the maximum of the day.
— 25.—Fine till 2 P.M. Overcast, dull after. A little rain fell in morning and evening. Temperature of the air at 9 A.M. = 51°.3, rose to 53°.6 at 11.5 A.M., after which it fell, and at 3 P.M. was 45°.4, and at midnight was 41°.3.
— 26.—Overcast, dull and cold throughout. A miserably wet day.
— 27.—Overcast, and dull throughout. Cold. Almost incessant rain.

LONDON: *Barometer.*—During the week ending Saturday, November 23, in the neighbourhood of London the reading of the barometer at the level of the sea increased from 29.38 inches at the beginning of the week to 30.48 inches by the evening of the 19th, and decreased to 29.92 inches by the end of the week. The mean daily readings were above their averages on every day in the week except Sunday, the 17th, the reading on that day being 0.35 inch below; on the 19th and 20th the readings were no less than 0.55 inch and 0.47 inch respectively in excess of their averages. The mean reading for the week at sea level was 30.09 inches, being 0.69 inch above that of the preceding week and 0.20 inch above the average.

Temperature.—The highest temperatures of the air observed by day varied from 48° on the 19th to 41½° both on the 22d and 23d; the mean value for the week was 44½°. The lowest temperatures of the air observed by night varied from 33½° on the 20th to 40½° on the 17th; the mean of the seven lowest readings was 36½°. The mean daily range of temperature in the week was 7⅜°, the greatest range in the day being 13°, on the 19th, and the least, 3⅜°, on the 17th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—17th, 41°.9, — 0°.1; 18th, 43°, × 1°.1; 19th, 41°.1, — 0°.7; 20th, 39°.3, — 2°.4; 21st, 39°.7, — 2°; 22d, 38°.8, — 2°.9; 23d, 37°.8, — 3°.9. The mean temperature of the air for the week was 40°.2, being 1°.6 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 105° on the 18th, 94½° on the 19th, and 87° on the 23d; on the 20th the reading did not rise above 45°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 28½° on the 23d, and 28¾° on the 19th. The mean of the seven lowest readings was 33°.

Wind.—The direction of the wind was N.N.E., and its strength gentle. The weather during the week was dull and cold, and the sky generally overcast.

Fog prevailed on the 19th, and a *solar halo* was seen during the afternoon of Saturday, the 23d.

Rain fell on two days during the week; the amount collected was 0.14 inch.

ENGLAND: *Temperature.*—During the week ending Saturday, November 23, the highest temperatures of the air observed by day were 51° at Truro, 50½° at Plymouth, and 49½° at Cambridge; the highest temperature of the air at Liverpool and Bradford was 46°, and at Sheffield was 46½°; the mean value from all stations was 48°. The lowest temperatures of the air observed by night were 25¼° at Nottingham, 26° at both Truro and Sheffield, and 26½° at Bristol; the lowest temperature of the air at Brighton was 36½°, and at Norwich and Sunderland was 34°; the general mean from all places was 29¾°. The range of temperature in the week was the greatest at Truro, 25°, and the least at Brighton, 11½°; the mean range from all places was 18¼°.

The mean of the seven high day temperatures was the highest at Truro, 47°, Sunderland 46°, and Plymouth 45¼°; and the lowest at both Liverpool and Hull, 40¾°, Wolverhampton, 40⅔°; the mean from all stations was 43°. The mean of the seven low night temperatures was the lowest at Sheffield, 32°, Hull 32¼°, Wolverhampton 33°, and Nottingham and Liverpool, both 33¼°, and the highest at Sunderland, 38°, and Brighton and Norwich, both 37⅜°; the mean value from all places was 35°. The mean daily range of temperature in the week was the least at Bristol, 5¼°, and the greatest at Truro, 11⅜°; the mean daily range of temperature in the week was 8°.

The mean temperature of the air for the week from all stations was 38½°, being 4° lower than the value for the corresponding week in 1877. The highest were 41⅜° at Sunderland, 41° at Truro and Brighton, and 40⅓° at Norwich; and the lowest were 36¼° at Sheffield and Hull, and 36½° at Wolverhampton and Liverpool.

Rain.—The falls of rain were generally small; the heaviest falls being 0.59 inch at Sunderland, and 0.45 inch at Norwich, and the least falls 0.03 inch at Sheffield, and 0.04 inch at Bradford. The average fall over the country was 0.19 inch.

The weather during the week was cold, foggy, and very dull.

Snow fell at Wolverhampton and Sheffield on the 23d inst.

A very dense *fog* prevailed at Liverpool during the week, and impeded shipping and navigation generally.

SCOTLAND: *Temperature.*—During the week ending Saturday, November 23, the highest temperatures of the air varied from 48⅜° at Aberdeen, to 46⅜° at Greenock; the mean value from all stations was 47½°. The lowest temperatures of the air varied from 22° at Perth to 33⅜° at Aberdeen; the general mean value from all places was 29°. The mean range of temperature in the week was 18¼°.

The mean temperature of the air for the week from all stations was 39½°, being 4° lower than the value for the corresponding week in 1877. The highest was 41°, at Aberdeen, and the lowest 37⅜°, at Perth.

Rain.—The heaviest fall of rain in the week was 0.84 inch, at Edinburgh; and the least was 0.15 inch, at both Dundee and Aberdeen. The average fall over the country was 0.41 inch.

DUBLIN.—The highest temperature of the air in the week was 48¾°, the lowest 22¼°, the range 26½°, the mean 36¼°, and the fall of rain 0.05 inch only.

JAMES GLAISHER.

Enquiries.

He that questioneth much shall learn much.—BACON.

NEW ZEALAND GOOSEBERRY.—Can any of your readers give me the botanical name of the New Zealand Gooseberry? *H. H., Aberdeen.*

YUCCA GLORIOSA, VAR. ELEGANS MARGINATA.—Would "M. E." (p. 667) oblige by saying where this is to be obtained? I have heard of it for some years, but never saw it, or know of any one who had it. *J. Croucher, Sudbury House, Hammersmith.*

Answers to Correspondents.

APPLE STOCKS, &c.: *An Old Subscriber.* Collect the fruits now, and place them in a heap to rot the pulp. In spring add dry earth or sand to the heap, and well mix altogether before sowing in rows. Quince stocks for Pears may also be obtained by layering during the winter months.—*J. W. W.* 1, see above; 2, from three to four years, according to the growth they make.

BOTANICAL DICTIONARY: *L. X. R.* Paxton's *Botanical Dictionary* is the best. It is published by Bradbury, Agnew, & Co., price 25*s*.

CUCUMBER DISEASE: *Sussex.* The particular form of disease that is proving so annoying to you is well known to us, and was described in our columns so far back as April 7, 1855. We are, however, now as



FIG. 118.—TUBERCLES ON ROOTS OF CUCUMBERS.

then, quite unable to account for the appearance of the minute vibrios, or to suggest a means of destroying them without sacrificing the plants. On the roots sent we found plenty of the tubercles illustrated in a magnified form in fig. 118, and on cutting these in half the appearances presented were such as those shown in fig. 119. How the vibrios get to the roots, whence they come, whither they go, is at present a

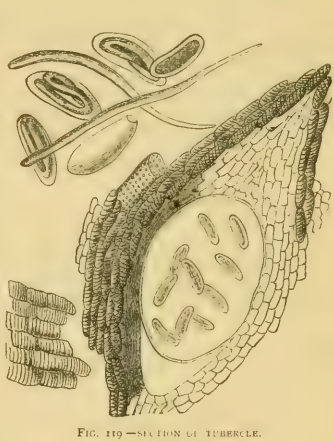


FIG. 119.—SECTION OF TUBERCLE.

mystery; but it is just possible that they may exist in the manure at the time the bed is made.

CUCUMBERS: *H. H. Y.* You must take care to fertilise the fruits you want to save seeds from, and when they are about half grown tie a piece of string tight about the middle of their length, to produce irregular swelling. Club-shaped fruits nearly always contain seeds, but the best sorts are often very shy seeders.

FERNS: *R. P.* We suspect the cause of your Fern fronds turning brown is to be found in the want of sufficient moisture at the roots.—*H. E.* Sim's, Foot's Cray, Kent; and Stansfield's, Todmorden.

GRAFTING WAX: *Paul Neron.* A mixture made up of four parts of resin to two parts of tallow and one of bee's-wax, will probably answer your purpose. They must be melted together in an iron vessel.

HEATING A SMALL GREENHOUSE: *W. Stannard.* If only required for occasional use, such as to keep out frost, such stoves answer the purpose very well; and, if kept clean and in proper working order, will do no harm to either Azaleas or Camellias.

HORTICULTURAL DIRECTORY: *W. P.* 1, Yes; 2, December; 3, yes.

INSECTS: *R. W.* Your Cyclamens are gnawed off by the larvæ of the weevil (Otiorhynchus sulcatus). The earth should be carefully moved and examined, and the grubs, which are easily seen, destroyed, and the

earth replaced by new soil, which had better be baked first to kill any vermin. *J. O. W.*

NAMES OF FRUIT. *Wm. Patten.* Probably Golden Noble.

NAMES OF PLANTS: *Jersey.* Picea Pindrow, true. — *J. Marton.* Masdevallia peristeria. —*N. M.* Cœlogyne ovalis. —*H. M. Kettlewell.* 1, Saccolabium calceolare, as near as we can tell without leaves.—*M. H.* 1 and 2. We cannot name from such scraps; 3, Selaginella caulescens; 4, Gymnogramma Martensii; 5, G. Calomelanos; 6, G. Massonii.

POT VINES: *L. K. R.* If the Vines have been properly prepared for fruiting in pots, the use of styptic should not be necessary. However, for what little you would be likely to want, it would be best to buy a small bottle of Thomson's Styptic from your seedsman, or a small quantity of painter's knotting from the nearest oil and colour shop.

SEEDLING BRIERS: *An Old Subscriber* will find all the information he wants on this subject by turning back to our number for November 9, p. 601. At p. 11 of the present volume he will also find much that may be useful to him.

TREATMENT OF OLD VINES: *J. C. L.* Vines thirty years old will not usually produce such good fruit as young Vines, unless they are grown on the extension system; still, as you say the border is full of roots, we are at a loss to account for the "very inferior quality" of the Grapes. Is the house full of old wood? That would account for the small bunches. Vine roots will travel beyond the prepared borders. Now to your questions. It is quite right to make a new border inside for young Vines, and your method is a good one. If you have to maintain a supply from October till March, we would plant Alicante and Lady Downe's, as well as Muscat of Alexandria; the last named will not always keep to so late a date. Then you ask, Will it be wise to keep the old Vines for three years? Certainly not. The young Vines, if well grown, would bear some fruit the year after planting, but they will not succeed amongst the old Vines. If a house of young Vines is well managed, they will cover every part of the glass roof the first season. You can do nothing to improve the old Vines except to cut out some of the old canes and train up young ones in their place.

TREES AFFECTED BY LIGHTNING: *Erratum.* In the paragraph on this subject, at p. 607, for "Araucaria imbricata," read "Araucaria excelsa."

CATALOGUES RECEIVED:—Howden & Co. (Inverness), Nursery List for 1878-79.—Hogg & Robertson (22, Mary Street, Dublin), Catalogue of Forest Trees, Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.—Shinn & Co. (Shinn's Nurseries, Niles, Alameda County, California), Descriptive Catalogue of Fruit Trees and Ornamental Plants, &c.

COMMUNICATIONS RECEIVED:—M. H.—A Macintosh. T. B. —K. W. K. (many thanks!—J. P. & Son.—E. Goeze.—K. Tiley.—J. R. J.—M. J. C.—J. C. B.—J. B.—A. M.—H. G. K.—W.—F. von Mueller. J. H.—J. H. McE. —M. L.—B. Q.—J. K. J. D.—J. V.—G. F. W.—J. M.—J. B.—C. B.—A. de C.—J. H. B.

Markets.

COVENT GARDEN, November 28.

We have no alteration to quote this week, business keeping very quiet, and the supply of Pears from the Continent falling off. American Apples are still arriving in large quantities, also Pines from St. Michaels and Madeira. Kent Cobs quiet. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	3 0	Melons, each	1 0	3 0
Cobs and Filberts, lb.	0 9	1 0	Pears, per doz.	3 0	6 0
Grapes, per lb.	2 0	6 0	Pine-apples, per lb.	2 0	4 0
Lemons, per 100	6 0	12 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Herbs, per bunch	0 2	0 4
— Jerusalem, bush	4 0	..	Horse Radish, p. bun.	4 0	..
Asparagus, Fr. sprue, per bundle	1 6	..	Lettuces, Cos, Eng., per score	1 6	2 6
Beans, French, p. 100	2 0	..	Mint, green bunch	0 4	0 6
Beet, per doz.	1 0	2 0	Onions, young, bun.	0 4	0 6
Brus. sprouts, bush.	7 0	..	Parsley, per bunch	0 4	..
Cabbages, per doz.	1 0	2 0	Radishes, per bunch	0 1	0 3
Carrots, per bunch	0 4	0 6	— Spanish, doz.	1 0	..
Cauliflowers, per doz.	2 0	3 0	— New Jersey, doz.	2 0	..
Celery, per bundle	1 6	2 0	Shallots, per lb.	0 6	..
Chilis, per 100	2 0	..	Seakale, per punnet	2 6	..
Cucumbers, each	0 4	1 6	Spinach, per bushel	2 0	..
Endive, Batav. dozen	1 6	..	Sweet Potatos, per lb.	0 6	..
Garlic, per lb.	0 6	..	Tomatos, per dozen	2 6	3 0
			Turnips, p. 12 bunch	3 0	..

The Potato market is quiet, and without alteration in prices:—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Jasmine, 12 bunches	6 0	12 0
Arum Lilies, 12 blms.	6 0	18 0	Lily of Valley, spray	1 0	2 0
Azaleas, 12 sprays	1 6	3 0	Mignonette, 12 bun.	0 6	9 0
Bouvardias, per bun.	1 0	4 0	Narcissus, paper-white, 12 sprays	2 0	6 0
Camellias, per dozen	3 0	12 0	Pelargoniums, 12 spr.	1 0	3 0
Carnations, per dozen	1 0	2 0	— zonal, 12 sprays	0 2	0 4
Cornflower, 12 bun.	0 6	0 9	Primula, double, per bunch	1 0	2 0
Chrysanth., per doz.	1 0	6 0	Roses (indoor), doz.	1 6	12 0
— per 12 bunches	3 0	9 0	— (outdoor), 12 bun.	0 9	18 0
Epiphyllum, 12 blms.	1 0	3 0	Stephanotis, 12 sp.	0 9	18 0
Eucharis, per doz.	4 0	12 0	Tropæolum, 12 bun.	2 0	6 0
Gardenias, 12 blms.	4 0	12 0	Tuberoses, per dozen	1 0	3 0
Gladioli, various, 12 spikes	1 0	4 0	Violets, 12 bunches	1 0	3 0
Heliotropes, 12 sp.	0 6	1 0			
Hyacin., Rom., 12 sp.	2 0	4 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lily, or Richardia æthiop., doz.	12 0	24 0	Euonymus, var., doz.	4 0	18 0
Azaleas, per dozen	24 0	60 0	Ferns, in var., p. doz.	4 0	18 0
Begonias, per doz.	6 0	12 0	Ficus elastica, each	2 6	15 0
Bouvardias, per doz.	9 0	24 0	Foliage Plants, various, each	2 0	10 6
Camellias, per dozen	18 0	60 0	Hyacin., Rom., doz.	12 0	18 0
Chrysanth., per doz.	6 0	30 0	Mignonette, per doz.	6 0	9 0
Coleus, per dozen	3 0	9 0	Myrtles, per doz.	4 0	12
Cyperus, per dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Dracæna terminalis	30 0	60 0	Pelargoniums, scarlets, zonal doz.	6 0	12 0
— viridis, per doz.	18 0	24 0	Primulas, per dozen	5 0	9 0
Epiphyllum, per doz.	18 0	60 0	Solanums, ber., doz.	6 0	18 0
Erica Caffra, p. doz.	6 0	9 0			
— gracilis, p. dozen	6 0	12 0			
— hyemalis, p. doz.	12 0	42 0			

SEEDS.

LONDON: *Nov. 27.*—A fair amount of activity now characterises the trade for farm seeds; as regards Clover, however, there is no movement in value. At our markets this week country holders of home-grown red made a vain attempt to raise prices; at the old rates of a fortnight back buyers for good qualities were readily found, but no endeavours to realise an advance met with success. American red, so far as England is concerned, remains a dead letter, there being an apparent sufficiency of home-saved Clover, the quotations current across the Atlantic excite for the moment little interest on this side. A very noteworthy feature of the present season is the extraordinary quality and unprecedented cheapness of Alsike seed; stimulated by this unusual combination provincial buyers have now begun to freely operate in this article; and although the offerings are still liberal, it does not seem probable that the present rate of supply can keep up. In white Clover there is no alteration; when a spell of frost in Silesia and other parts enables fine parcels to be forthcoming, purchasers will not delay operations. For bird seed there is a slow inquiry on former terms. Blue Peas and Haricot Beans are placed at last week's rates. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Mark Lane on Monday was very dull, and prices had a downward tendency. Holders, however, were not anxious sellers, but a concession was made where there was any likelihood of concluding business. This applies not only to Wheat, but to Barley, Oats, Maize, Beans, Peas, and flour. Very fine malting Barley was scarce and quite as dear.—Dulness characterised business on Wednesday, and prices were with difficulty supported. As regards Wheat, sales could only be concluded on lower terms, but so little was doing no reduction was quoted. Fine malting Barley maintained its price, but other qualities tended downwards. Oats and Maize were cheaper to sell, and a similar market was experienced for Beans, Peas, and flour. The attendance was very poor.—Average prices of corn for the week ending November 23:—Wheat, 41*s.* 2*d.*; Barley, 39*s.* 9*d.*; Oats, 21*s.* 9*d.* For the corresponding period last year:—Wheat, 51*s.* 5*d.*; Barley, 44*s.*; Oats, 24*s.* 3*d.*

CATTLE.

At the Metropolitan Market on Monday the milder weather caused a slow trade in beasts, and, notwithstanding a clearer dead market, we cannot quote higher prices. The demand for sheep was limited. Choicest descriptions did not alter much in value, but other kinds were on the average lower. Choice calves were scarce and dear. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* 2*d.* to 6*s.* 6*d.*; lambs, 6*s.* to 7*s.*; pigs, 4*s.* to 5*s.* 8*d.* On Thursday the supply of beasts and sheep was not large, but proved amply sufficient for the demand. The trade throughout was quiet, at about Monday's prices. Calves and pigs were unaltered.

HAY.

The Whitechapel report for Tuesday states that the supply of fodder was large, notwithstanding the wet weather, and trade was heavy. Prime Clover, 100*s.* to 112*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 32*s.* to 40*s.* per load.—Owing to the wet weather, the supply on Thursday was short. There was a dull trade as follows:—Prime Clover, 110*s.* to 112*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 40*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 88*s.* to 95*s.*; inferior, 65*s.* to 78*s.*; superior Clover, 115*s.* to 126*s.*; inferior, 88*s.* to 98*s.*; and straw, 40*s.* to 43*s.* per load.

POTATOS.

The Borough and Spitalfields reports state that trade continues steady, and prices show no material change. The supplies are moderate. Kent Regents, 100*s.* to 130*s.* per ton; Essex ditto, 100*s.* to 120*s.*; flukes and Victorias, 120*s.* to 145*s.*; rocks, 70*s.* to 80*s.* The imports into London last week consisted of 70,227 bags from Hamburg, 3371 Ghent, 3218 bags 542 boxes and 120 tons Antwerp, 525 bags Rotterdam, 4004 Bremen, 937 Stettin, 100 sacks Boulogne, 183 Dunkirk, and 68 bags from Ostend.

COALS.

Business during the week has been quiet. On Wednesday Hartleys advanced 6*d.* per ton. Quotations:—Bebside West Hartley, 16*s.* 3*d.*; East Wylam, 17*s.* 3*d.*; Springwell West Hartley, 16*s.* 3*d.*; Walls End—Lambton, 18*s.* 6*d.*; Original Hartlepool, 19*s.*; Wear, 17*s.* 3*d.* Tunstall, 17*s.* 3*d.*

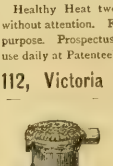
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Healthy Heat twenty-four hours or longer for about 1*d.*, without attention. For Bedrooms, Greenhouses, or almost any purpose. Prospectus and authenticated Testimonials sent. In use daily at Patentee's—THOMAS ROBERTS,

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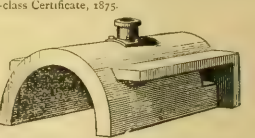


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Silver Medal, 1874.

THE TERMINAL SADDLE BOILER.—First-class Certificate, 1867; Highly Commended, 1873; and First-class Certificate, 1875.



"This boiler possesses the rare merit of sucking all the heat from the fire."—*Gardeners' Magazine*, p. 254

"I have no doubt the Best Boiler, that will burn any kind of fuel, is the Terminal Saddle."—*Journal of Horticulture*, p. 327.

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WOOD AND CO.'S

STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers, and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truckloads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

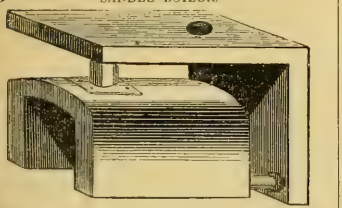
Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway, King's Cross, N., and Midland Sidings, St. Pancras, N.W.

JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ s. d.
20 in.	15 in.	13 in.	300	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	502	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1002	16 0 0
24 ,,	24 ,,	48 ,,	1400	20 0 0
28 ,,	28 ,,	60 ,,	1800	25 0 0

Larger sizes if required.

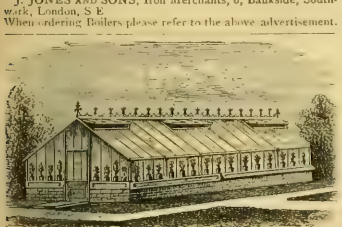
From Mr. CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873.*

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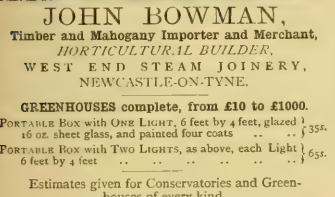
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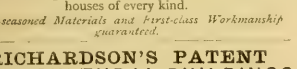
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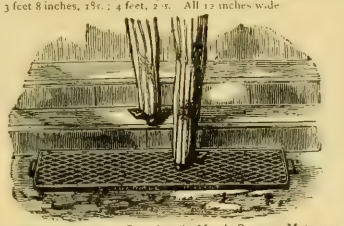


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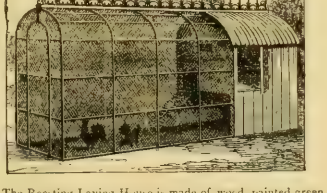
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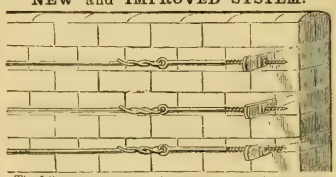
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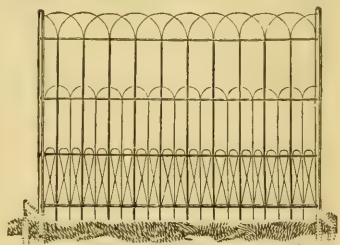
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10	,,	..	..	0	6	0	21	,,	..	..	0 11 6
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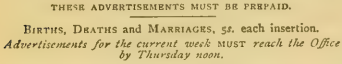
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20 × 15 ,, ..	5 3	6 3	7 3	8 9	6 9	7 9	8 9	10 3
20 × 16 ,, ..	5 6	6 6	7 6	9 0	7 0	8 0	9 0	10 6
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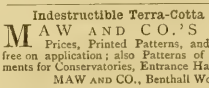
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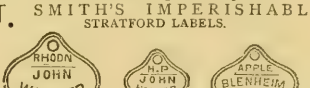


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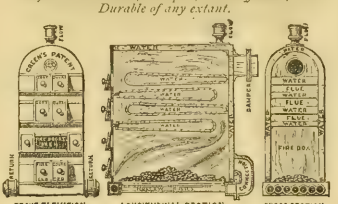
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2. Our Public Offices (Somerset House). Part IV.—Leave of Absence and Sick Leave.
3. Fancies of the Fair.—No. 69 Fifty.
4. Canadian Loyalty.
5. The Fair in the City.
6. The Westminster Play.
7. An African Nightingale.
8. The Fair Behind the Footlights.
9. Bread, Butter, and New Brooms.
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ROMAN HYACINTHS.—Fine Bulbs, 15*s.* per 100. Discount to Trade on application
PAUL AND SON, The Old Nurseries, Cheshunt.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED AND NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18*s.*, 24*s.*, and 30*s.*
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

What a Glorious Rose It Is.

See letter, November, 1878, from a gentleman of known taste, in ordering

THE NEW ROSE, QUEEN OF BEDDERS (Noble).
Good Plants are now supplied at 18*s.* per dozen.
CHARLES NOBLE, Bagshot.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded, free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2*s.* 6*d.* each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

TWELVE NEW GLOXINIAS for 21*s.*, including the grand new novelties shown at Paris Exhibition, small growing Bulbs in 5-inch pots, or dry, free by post; also large-flowering bulbs of fine AMARYLLIS, imported from Peru, 42*s.* per dozen.
JOHN H. LEY, Royal Nursery, Croydon.

SEAKALE, ASPARAGUS and RHUBARB.—Roots for forcing, exceptionally fine. For special quotations apply to
H. THORNTON, 1, Maxwell Road, Fulham, S.W.

SALES BY AUCTION.

Lilium auratum.—Trade Sale.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, December 9, at half-past 12 o'Clock precisely, 8000 splendid bulbs of LILIUM AURATUM, just arrived from Japan in splendid condition; 3,000 TIGRIDIA GRANDIFLORA just received direct from New Jersey, and a first-class collection of double and single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, LILIUMS, &c., from one of the best-known farms in Holland, and lotted to suit the Trade.

On view morning of Sale, and Catalogues had.

New Seedling Camellias, Lilium Melpomene, New CEREUS, NEW CONIFERS, &c.

MR. J. C. STEVENS has received instructions from Messrs. Hovey & Co., of Boston, Massachusetts, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, December 9, at half-past 12 o'Clock precisely, three of their magnificent Seedling CAMELLIAS, viz., Mrs. Anne Marie Hovey, C. M. Hovey, and C. H. Hovey—the two latter of which have never been sold; also a limited quantity of LILIUM MELPOMENE, by far the darkest and finest of the Japan Lilies; CEREUS, C. M. HOVEYI, entirely new, distinct and superb; AZALEA, Little Beauty; and CHAMÆCYPARIS HOVEYI, a hybrid as beautiful as the Retinosporas.

On view morning of Sale, and Catalogues had.

Hardy Plants and Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 11, at half-past 12 o'Clock precisely, CARNATIONS, PICOTEES and PINKS, Standard, Dwarf and Climbing ROSES, FRUIT TREES, Specimen CONIFERS, Hardy Trees and Shrubs, Herbaceous Plants, Raspberry Canes, Gooseberry and Currant Trees, and an importation of Hyacinths, Tulips, Crocuses, Narcissus, Iris, Anemones, Ranunculi, Liliums, Gladioli, Spiræas, Lily of the Valley, &c.

On view morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 12, a fine Importation of ONCIDIUM MACRANTHUM and ODONTOGLOSSUM PADDINGTONII, now in bond in good condition. Also an Importation of DUTCH BULBS.

On view morning of Sale, and Catalogues had.

First-class Established Orchids.

MR. J. C. STEVENS has received instructions from Messrs. J. Backhouse & Son to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 12, at half-past 12 o'Clock precisely, a collection of FLOWERING and ESTABLISHED ORCHIDS, containing Trichopilia fragrans, extra strong plants of Odontoglossum vexillarium, Bollea cœlestis, Batemannia Burtii, and probably the finest plant of Masdevallia bella, and the finest masses of Cattleya citrina ever offered, &c.; also several thousand BULBS of LILIUM AURATUM, just arrived from well-known farms in Japan, in splendid condition.

On view morning of Sale, and Catalogues had.

In consequence of the Sudden Death of Mr. Edward Henry Ward, of Vere Street, Oxford Street, W., the following important sale of that eminent Naturalist's Collection is ordered to take place.

MR. J. C. STEVENS has received instructions from the Administratrix of the late Mr. E. H. Ward, the eminent naturalist, to SELL by AUCTION, without reserve, on the Premises as above, on THURSDAY and FRIDAY, December 12 and 13, at half-past 12 o'Clock precisely, each day. The large COLLECTION of HEADS and HORNS of ANIMALS, shot and collected by many eminent sportsmen and Royal Personages, including H.R.H. the Duke of Edinburgh; also a large number of magnificent cases and shades of STUFFED BIRDS, FIRE SCREENS, MEDALLIONS, TIGER CLAW, HUMMING-BIRD, and other JEWELLERY, CARRIAGE and HEARTH RUGS, Bird and Animal SKINS, Lions, Tigers, &c., in great variety; REPTILES, CABINETS and BOXES of INSECTS, a few BOOKS, BIRDS' EGGS, SKULLS, SHOW-CASES, &c.

On view the afternoon before, and mornings of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Auctioneer, 38, King Street, Covent Garden, W.C.

Final Sale of Dutch Flower Roots this Season.

2000 named HYACINTHS, splendid bulbs for glasses, being the remaining stock of a London Seedsman, and including many unusually choice varieties, also 100,000 CROCUS, TULIPS, NARCISSUS, ANEMONES, RANUNCULI, LILIES, &c., which

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at The Mart, opposite the Bank of England, City, E.C., on MONDAY NEXT, at half-past 11 o'Clock precisely.

P. & M. will buy for those who cannot attend.

The bulbs may be viewed the Saturday prior to the Sale. Catalogues at The Mart, and of the Auctioneers, 98, Gracechurch Street, E.C.

To Seedsmen and Others.

IMPORTANT SALE of 44 bales of Naples Onion Seed, comprising altogether about 2000 lbs., and consisting of the following varieties:—Rocca, Later White, Red Giant, Early White, Marzajola, and Queen.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. G. V. de Luca (late of 43, Wigmore Street, W.), in consequence of his relinquishing this branch of the business, to SELL by AUCTION, at the Mart, Tokenhouse Yard, near the Bank of England, E.C., on MONDAY, December 16, at 2 o'Clock (unless previously disposed of by private treaty) his entire stock of NAPLES ONION SEED harvested in 1878.

An order to view the Seed, together with samples, may be obtained on application to the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

Auction Mart, Opposite the Bank of England, City.

CONSIGNMENT of LILIES from Japan, just arrived in fine condition, consisting of 8000 bulbs of Lilium auratum, 200 speciosum album, 200 speciosum roseum, 1000 Thunbergianum staminosum, 300 longiflorum, and 500 tigrinum flore-pleno; also a collection of rare ENGLISH GROWN LILIES, 400 Standard, Dwarf and other ROSES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the Mart, on MONDAY, December 16, at half-past 11 o'Clock.

Catalogues of the Auctioneers.

Willesden, N.W.

PEREMPTORY CLEARANCE SALE. Land required by the Metropolitan Railway Company for the extension of their Line.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Videon's Nursery, Walm Lane, Willesden, Middlesex, half a mile from the Brondesbury Station, on THURSDAY, December 19, at 12 o'Clock, the whole of the NURSERY STOCK, including Privet, Laurels, Rhododendrons, Beech, and Ornamental Trees; also five GREENHOUSES, with the whole of the Fittings thereto; HOT-WATER PIPING, BOILER, some thousands of BRICKS, and other effects.

On view one week prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

West Ham and Plaistow, Essex.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL on the Premises, Holmes' Nursery, Portway, West Ham, and McPherson's Nursery, High Street Plaistow, close to Plaistow Station, by order of Mr. Wm. Holmes, on FRIDAY, December 20, at 12 o'Clock punctually, the whole of the well-grown NURSERY STOCK, comprising large quantities of specimen Coniferæ and Evergreens, 500 yards Box Edging thousands of Aucubas of various sizes, 2000 strong Irish Ivies, 6 to 9 feet, in pots; and other MISCELLANEOUS STOCK.

View one week prior to Sale. Catalogues obtained on the Premises; *Express* Office, Stratford; and of the Auctioneers, 91, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, Surrey.—By Order of the Mortgagees.

PRELIMINARY NOTICE of SALE, by AUCTION, of the highly important and almost unique FREEHOLD ESTATE of 5A. OR. 25P., distinguished as "The Nurseries," Tooting, S.W., now in the occupation of Messrs. Wm. Rollisson & Sons, together with the excellent detached residence, the extensive ranges of Glass, Trade Buildings, Seed Warehouse, Office, and other accessories.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to offer the above Property by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., early in JANUARY NEXT.

More detailed particulars will appear next week

Solicitors, Messrs. GATLIFF AND HOWSE, 8, Finsbury Circus, E.C.

Tooting, S.W.

Re Wm. Rollisson & Sons, in liquidation.—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Trustee to prepare for unreserved SALE by AUCTION the whole of the Stock, comprising the most extensive and unique collection of ORCHIDS, STOVE and GREENHOUSE PLANTS ever submitted to public competition.

Further particulars will appear in future announcements.

Re Wm. Rollisson & Sons, in liquidation.

MESSRS. PROTHEROE AND MORRIS beg to announce that prior to selling the Stock they will offer by AUCTION the GOODWILL of the BUSINESS, thus giving to intending purchasers advantageous opportunity of learning the modus operandi and of buying at auction prices such stock as may be required for carrying on the same.

Further announcements will shortly appear.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained gratis at 98, Gracechurch Street, E.C.

SPRUCE FIRS, suitable for Christmas Trees, well furnished, 2½ to 4½ feet high, 25s. per 100.
WILLIAM ROBERTS, Nurseryman, Bridgnorth.

To the Trade.

W. TAIT AND CO. beg to offer DOGSTAIL • RIB-GRASS, POTATO ONIONS, and GARLIC, of fine quality. Samples and prices on application.
W. TAIT AND CO., Nurserymen and Seedsmen, Dublin.

To the Trade.

LONGPOD and WINDSOR BEANS, bright samples, very cheap. Samples and price on application.
C. R. FREEMAN, Seed Grower, Norwich.

To the Trade.

WILLIAM BARRON AND SON'S New WHOLESALE CATALOGUE May be had on application.
Elvaston Nurseries, Borrowash, Derby.

FOR SALE, 50,000 SPANISH CHESTNUTS, very strong, 2½ feet to 5 feet; 30,000 ASH, very strong, 2½ feet to 5 feet; 10,000 ALDER, very strong, 4 feet to 6 feet; 10,000 BIRCH, very strong, 4 ft. to 6 ft. Apply to E. TANNER, Plant Merchant, Groombridge, Sussex.

ASPARAGUS.—A quantity of Extra Fine, for forcing. Also SEAKALE and RHUBARB for forcing and planting. Prices on application to
J. COOPER, Gardener and Florist, Belfour Cottage, Fulham Fields.

MAIDEN APRICOTS.—2000 Moorpark and other finest sorts, to be sold cheap, to clear land. For price apply to
EWING AND CO., Norwich.

EUCHARIS AMAZONICA.—Special offer of this beautiful forcing Lily. Several thousand Bulbs to offer. Price on application.
LITTLE AND BALLANTYNE, Seedsmen, Carlisle.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
PALMATA, 25s. per 100.
By 100 or 1000. An immense stock, already ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

SEAKALE for FORCING.—Splendid large roots, no better in the land, 9s. per 1000; 10s. 6d. per 100. Prepaid orders.
ALFRED ATWOOD, Market Gardener, 8, Palk Road, Battersea, S.W.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurel of many varieties, variegated and green Hollies, nearly every variety of Coniferæ, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree; also a fine and select assortment of pyramid and bush Fruit Trees, Apples, Pears, Plums, and Cherries, 12-yr. and 15-yr. old, well transplanted and in full bearing.

Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable. Address
PROPRIETOR, Whitchurch Gardens, Edgware, London.

SPECIAL OFFERS TO THE TRADE.

MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds splendid examples.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

LARCH FIR—300,000, 2 to 3 and 3 to 4 feet, and large quantities of other Forest Trees.
NEW HEDGE PLANT, Myrobella Plum, of far more rapid growth than Quick.
FRUIT TREES, ORNAMENTAL TREES and SHRUBS, in large quantities.
Priced CATALOGUES, also terms to the Trade, on application to
J. CHEAL AND SONS, Lowfield Nurseries, Crawley, Sussex.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post free on application.
Hale Farm Nurseries, Tottenham, London.

CHARLES NOBLE, Bagshot, Surrey, in a re-arrangement of his Nursery, finds he has an overstock of the undermentioned, which he will sell at 50 per cent. discount for cash, taken in quantities of 100 or upwards in variety at one time. Sample 100, if desired, sent.

Standard Apples, Pears and Cherries, finest named kinds
Gooseberries, White Currants, and Cob Nuts.

8, 10, and 12 feet high.
Horse Chestnut.
Scarlet Chestnut.
Scarlet Oaks.
" Maple.
" Thorn.
Laburnum.
" Purple.
Lombardy Poplars.
Italian Poplars.
English Elms.
American Elms.
Service Trees.
Sycamore.
" Purple.
Various Heights.
Portugal Laurels.
Common Laurels.
Colchic Laurels.
Mahonia Aquifolia.
Rhododendron ponticum.
" hybrids.
" hybrids, named.
Andromeda floribunda.
Kalmia latifolia.
Azalea pontica.
Cupressus Lawsoniana.
Picea Nordmanniana.
Dwarf Roses.
Erica carnea.

QUEEN OF LILIES, LILIUM AURATUM.—Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6d.; No. 2, 1s.; No. 3, 1s. 6d.; No. 4, 2s. each.
ORCHIDS.—Special offer of the following fine Orchids, for £5 5s.:—1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum giganteum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Limatodes rosea.
All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to
WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

Plants for Winter Flowering and Decoration.

MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following:— per dozen.
AZALEA INDICA, fine plants, and well budded, 24s. to 42s.
BOUVARDIA, in variety, 18s. to 24s. per dozen.
CARNATION, Miss Jolliffe, La Belle, and others, 24s. per doz.
EPACRIS, in variety, 24s. to 30s. per dozen.
ERICA HYEMALIS, fine plants, full of bloom-bud, 15s. to 30s.
LILY OF THE VALLEY, single crowns, 8s. per 100.
PELARGONIUMS, 18s. to 24s. per dozen.
PINK, Lady Blanche, 9s. per dozen.
POINSETTIA PULCHERRIMA, 18s. per dozen.
ROSES, in pots, great variety, 24s. to 42s. per dozen.
SOLANUMS, well berried, 15s. per dozen.
PALMS and DRACÆNAS, 24s. to 42s. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30s. per dozen; besides a large general stock of STOVE and GREENHOUSE PLANTS.
CATALOGUES of which may be had on application.
Royal Nurseries, Ascot, Berks.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

To Purchasers of

LARGE QUANTITIES OF BULBS.
MIXED HYACINTHS.
DOUBLE VAN THOL TULIPS.
SCARLET VAN THOL TULIPS.
SUTTON AND SONS will be pleased to quote Special Prices for the above in large quantities.
Royal Berks Seed Establishment, Reading.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

ASPARAGUS (Gravesend Giant), for forcing, 6s. per 100.
RHUBARB, Victoria and Albert, 1s. per 100.
Cash and packing included.
T. EVES, Gravesend Nurseries.—(Established 1810.)

GIANT LILY of the VALLEY.—Extra strong blooming roots, 2s. per dozen, 12s. 6d. per 100, package free.
E. COOLING, Mile Ash Nurseries, Derby.

To the Trade.

DWARF H.P. ROSES, 30s. per 100, £12 per 1000, best sorts, package included.
H. BENNETT, Manor Farm Nursery, Stapleford, Salisbury.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d. ; Planting, 2s. 6d. to 5s.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

TO THE TRADE.
MANETTI STOCKS, 21s. per 1000.
MUSSEL STOCKS, 45s. per 1000.
CRAB STOCKS, 35s. per 1000.
Samples of the above may be had on application to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35s. per 100, packing included for cash.
JAMES HOLDER AND SON, Crown Nurseries, Reading.

STANDARD THORNS, Paul's Crimson, Double Pink, and Single Scarlet, very strong ; Weymouth PINE, from 5 to 10 feet : CRYPTOMERIA ELEGANS, 4 to 5 feet ; Black Italian POPLAR, 10 to 15 feet, to be Sold cheap, to clear the ground. Price and sample of any of the above on application.
RICHARD MASON, Windlesham Nursery, Bagshot, Surrey.

To the Trade.

NEW POTATO "PRIDE of ONTARIO."
H. and F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application.
Seed Growing Establishment, Wisbech.

THE PRESTON NURSERY and PLEASURE GARDENS COMPANY (Limited), Farington Hall Nurseries, Ribbleton, Preston.—We beg to offer the following cheap and healthy Plants :—

CROTONS in variety.	DRACÆNAS in variety.
PALMS in variety.	FERNS in variety.

STOVE and GREENHOUSE in variety.
Prices on application to the Manager, WM. TROUGHTON.

Still some Good Clumps of

SPIRÆA JAPONICA, for Forcing, at £5 per 1000 (including packing), free at the Steamboat at Ghent only for cash accompanied with the order.
PETER DE COCK and SON, The White Flower Nursery, Meirelbeke, near Ghent, Belgium.

TO THE TRADE.
CHRISTMAS ROSES, LILY OF THE VALLEY, SPIRÆA JAPONICA } In extra fine clumps, at low prices.
GLADIOLUS BRENCHLEYENSIS, GANDAVENSIS, FLORIBUNDUS, named French and mixed.
SANDER AND CO., Seed Growers, St. Albans.

Autumn Planting.

LITTLE AND BALLANTYNE, NURSERYMEN and SEEDSMEN to the Queen, 92, English Street, and Broomfield Nurseries, Carlisle, invite inspection of their large, varied, healthy, hardy, well-grown Stock of FOREST TREES, ORNAMENTAL TREES and SHRUBS, PARK and AVENUE TREES, ROSES, FRUIT TREES, &c.
Special rates to large planters. Cheap railway through rates.
CATALOGUES post-free.

Trees and Shrubs for Public Parks, Cemeteries, &c.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above in great variety and of good sizes, to give immediate effect. Properly grown and well transplanted. Prices very moderate.
CATALOGUES free on application.

Vines—Vines—Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is this year unusually fine, and comprises all the leading kinds, including "Alnwick Seedling."
For descriptions and prices, see B. S. W.'s BULB CATALOGUE for this year.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

BOX EDGING.—A quantity of good dwarf. Apply.
Mr. GEORGE CUE, 2, Elland's Place, Wantage.

To the Trade.

SEED POTATOS.—The subscribers are now ready to execute orders for large quantities of the main cropping varieties. Good samples, free from disease. Prices on application.
LITTLE AND BALLANTYNE, Carlisle.

GRIGOR'S AQUILEGIA GLANDULOSA. —The subscribers have for Sale strong plants of this beautiful Columbine, sent free by post or rail at 2s. per pair, or 9s. per dozen, on receipt of order or stamps of that value.
The Trade supplied per 100 at wholesale rates
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

Autumn Bearing Raspberry.

BELLE DE FONTENAY. — Several thousands of the above, strong canes, to offer ; by far the best autumn Raspberry. Price per 100 or 1000 on application.
CHARLES EVEREST, Jun., Alexandra Nursery, London Road, Reading.

To Nurserymen and Planters.

THOUSANDS of FOREST TREES to be sold cheap, comprising Balsam and Black Italian Poplars, Birch, Walnuts, Elms, Sycamores, Acer Negundo, Norway Maples, Limes, Horse Chestnuts, Spruce Firs, all from 8 to 15 feet, straight stems, and well rooted. Apply to
EDWARD MORSE, The Original Nurseries, Epsom.

HOME GROWN LILIUM AURATUM. —Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."
CHARLES NOBLE has just harvested this year's crop, and will give prices on application.
Bagshot.—October 12.

Standard Tea Roses and Budded Camellias from PARIS.

LÉVÊQUE ET FILS, NURSERYMEN, 69, Rue du Liégat, Ivry-sur-Seine, near Paris, beg to offer a splendid lot of TEA ROSES, Standards and Dwarfs, from out-of-doors ; also a splendid lot of CAMELLIAS, well budded and old, in pots (ALBA PLENA in quantity).
CATALOGUES and prices on application.

The Lily Nursery, Ghent, Belgium.

J. VANDER SWAELMEN'S English CATALOGUES of Ornamental Plants, Winter and Spring Flowering Plants, Lilies, and other Bulbs and Roots, can still be had free on application.

To the Trade.

SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.
H. AND F. SHARPE, Seed Growers, Wisbech.

Roses, Fruit Trees, and General Nursery Stock

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

Roses—Roses—Roses.

FINE DWARFS on MANETTI, all the leading varieties, 35s. per 100.
WILLIAM IRELAND, Pilton Nurseries, Barnstaple.

AMERICAN GROWN TUBEROSES.—The undersigned offers Double Tuberoses, first-class Bulbs, packed and free to Liverpool at £5 per 1000, in quantities of not less than 1000.
JOHN SAUL, Washington, D.C.

DWARF-TRAINED PEACHES and NECTARINES, extra sized. The Trade supplied. Apply to
GEORGE SMITH, The Dell Nurseries, Rock Ferry, Cheshire.

To the Trade.

SPECIAL PRICES ON APPLICATION.
GEORGE COOPER, SEED MERCHANT, Hertford, begs to offer the following, of the choicest stocks :—

BEET, Red, Cooper's Excelsior	ONION, White Spanish
BROCCOLI, Hill's June	,, White Globe
CUCUMBER, Improved Telegraph	,, Bedfordshire Champion
[Matchless	CELERY, Cooper's Improved
PARSLEY, Curled, Cooper's	White
SWEDE, Cooper's Improved Large Purple-top	BROMPTON STOCK, Giant Scarlet
TURNIP, Improved Aberdeen Green-top Yellow	CYCLAMEN PERSICUM, from large flowers.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.
HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown : 14s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
,, double white, 12s. to 16s. per 100.
,, ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.
DIELYTRA SPECTABILIS, 20s. to 25s. per 100.
LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
,, ,, ROSEUM, 20s. to 26s. per 100.
,, ,, RUBRUM, 20s. to 26s. per 100.
,, CHINENSIS TIGRINUM, 5s. to 8s. per 100.
CHRISTMAS ROSES (Helleborus niger), fine, 40s. to 60s. per 100.
Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.
BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

English Oaks, 10 to 12 feet.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset, has a quantity of above to offer, well rooted, at 20s. per 100.
"What you plant in the old year will grow of itself, but what is planted in the new year you will have to make grow."

Christmas Trees.

J. GEORGE HILL (late John Scott), can supply the above, 1 foot, at 6s. per 100, 2 feet 15s. per 100, well feathered.
The Royal Nurseries, Merriott, Somerset.

English Yews.

ENGLISH YEWS, 4 to 5 feet, 12s. per dozen, 85s. per 100.
J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

Evergreen Oaks.

EVERGREEN OAKS, all recently transplanted, from 3 to 10 feet, at exceptionally low prices.
J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

FRUIT TREES.—Pyramidal Pears, fruiting trees, 6 to 8 feet, my selection, 18s. per dozen ; Currants, Black Naples, fruiting bushes, 16s. per 100 ; Standard Morello Cherries, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen ; Standard Plums, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen ; Medlars and Walnuts, bushy heads, 18s. per dozen.
Fruit Tree CATALOGUE gratis.
J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

COMMON LAURELS, PORTUGAL LAURELS, and BAYS.—A quantity of fine stuff, well rooted. Special low prices on application to
J. GEORGE HILL, The Royal Nurseries, Merriott, Somerset.

SPANISH CHESTNUT, ASH, BIRCH and ALDER, stout, well rooted, transplanted. A large quantity to be sold.
Mr. GEO. CHORLEY, Coaster's Nursery, Midhurst.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to
S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie, St. Petersburg.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

Transit Agency for Plants, Seeds, &c.

C. J. BLACKITH AND CO. (established 1822), Cox's and Hammond's Quays, Lower Thames Street, London, S.E.—Forwarders to all parts of the world.

Christmas Decorations.

LUCOMBE, PINCE AND CO. are now booking orders for CAMELLIA, ROSE, ARUM and EUCHARIS BLOOMS, and other CUT FLOWERS.
The Trade supplied.
Exeter Nursery, Exeter.

Three of the Most Beautiful Lilies.

CHARLES NOBLE will send by post, on receipt of 5s. in stamps, three dozen Seeds of LILIUM GIGANTEUM AURATUM and CZOVITSIANUM, with directions to raise your own Lilies instead of importing.
Bagshot.

For Forcing, Superb Roots.

ASPARAGUS, 3, 2, and 1-yr., thinly-sown stuff. RHUBARB, Linnæus, Prince Albert, Victoria, &c., finest stools, 4, 3, and 2-yr., from seed.
C. R. FREEMAN, Seed Grower, Norwich.

LILIES OF THE VALLEY, strong, for forcing, first quality, all with flowers, price 36s. per 1000.
In stock 800,000 pieces. Apply to
GUSTAV A. SCHULTZ, Eckartsberg, Berlin.

ROSES, Standard and Half-Standard, splendid plants, fine straight stems, 75s. per 100.
GENISTA FRAGRANS, fine bushy stuff, in 5½-inch pots, 40s. per 100 ; do., in 4-inch pots, 30s. per 100.
PRIMULAS, double white, fine plants, in bloom, 12s. per doz.
MAIDENHAIR FERNS, fine plants, in 4-inch pots, £4 p. 100.
HEATH AND SON, Nurserymen, Cheltenham.

Lily of the Valley.

OSBORN AND SONS have received, in excellent condition, a large importation of single crowns of the above, from Germany. The flowers of this breed are larger than the Dutch, and produced very freely. Price 7s. 6d. per 100 crowns.
The Fulham Nurseries, London, S.W.

Planting Season.

E. BURGESS begs to offer the following strong Standard APPLES, PEARS, ROSES, Standard and Dwarf Trained APRICOTS, Turkey and English OAK, English and Scotch ELMS, LIMES up to 12 feet, BEECH up to 7 feet, SWEET BAYS, APPLE STOCKS, and a general NURSERY STOCK.
Prices on application.
The Nurseries, London Road, Cheltenham.

TO PLANTERS of GAME COVERS.—40,000 2-yr. and 3-yr. planted Evergreen PRIVET; 30,000 to 40,000 1-yr. 2-yr. transplanted LARCH, fine. For samples and prices apply to
HENRY ELLIOT, Nurseryman, Longtown, Cumberland.

FOR SALE, three PEACHES, two NECTARINES, trained, well furnished, 10 feet by 12 feet ; or would EXCHANGE for ROSES, CAMELLIAS, EUCHARIS.
J. GRIFFIN, Florist, Southport.

RASPBERRY CANES (Fastolf), 30,000 strong plants, 35s. per 1000. Free on rail for cash with order
J. G. MITCHINSON, [illegible] Dould Street, Dorman

Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices :—

ALDER, 4 to 5 feet, fine, 20s. per 1000
ASH, 2 to 2½ feet, fine, 20s. per 1000
„ 3 to 5 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
CHESTNUT, Horse, 6 to 8 feet, fine heads, 60s. per 100
„ Scarlet 6 to 8 feet, fine heads, 100s per 100
ELMS, Canadian 8 to 10 feet, clear stems, with good heads, 100s per 100
„ English (upright), 6 feet, clear stems, with good heads, 120s per 100
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 5s. per 100 ; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100 ; 8 to 10 feet, fine, 12s. per 100
„ Lombardy, extra fine trees, 8 to 10 feet, 25s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
„ ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, strong, 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
„ fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100
CATALOGUES of General Nursery Stock on application.

To the Trade

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff :—
ROSES, Dwarf, 30s. per 100.
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. per dozen.
„ fine Maidens, 40s. per 100.
„ 1-yr. cut-back, 30s per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
„ NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen
52, Market Square, Northampton.

Established Upwards of a Century.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, 1, Waterloo Place, Edinburgh, beg to call the attention of those about to plant to their extensive Stock of FOREST TREES, SHRUBS for Game Coverts, FRUIT TREES, &c. which have been grown in exposed situations.

D. & Co. are now sending out their Bedding VIOLAS and PANSIES (of which they hold the largest stock in the country), Early and Late PHLOXES, &c.

Descriptive CATALOGUES free on application.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard :—

PEARS on the Quince and Pear stocks.
APPLES on the Paradise and Crab stocks.
CHERRIES on the Mahaleb and Cherry stocks.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock ; do., trained trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds ; do., in pots for forcing, stout and well grown plants

Descriptive Rose Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3d.
Miniature Fruit Garden, 3s. 6d., free by post

Fine Collection of Plants for Decorating Purposes.

B. WHITHAM, The Nurseries, Reddish, near Stockport, has a large quantity of the following useful plants on Sale

EPIPHYLLUMS, in variety, fine bushy plants, well set with blooms, 18s. and 24s. per dozen,
DRACÆNAS, Cooperii, nigrescens, terminalis, nice bushy plants, for table decoration, 18s. and 24s. per dozen.
CROTONS, variegatum, Veitchii, interruptum, nice bushy plants, suitable for table decoration, &c., 18s. and 24s. per dozen.

Planting Season.

To NOBLEMEN, GENTLEMEN and the TRADE.

THE ROYAL MERRIOTT NURSERIES are well stocked with immense quantities of ALDER, BEECH, BIRCH, Horse CHESTNUT, ELM, Silver, Scotch, and Spruce FIR, HAZEL, HORNBEAM, LIMES, OAKS, POPLARS, YEWS, &c., of all sizes. Special low prices will be forwarded on application to

J. GEORGE HILL (successor to John Scott), The Royal Nurseries, Merriott, Somerset.

L. PAILLET, NURSERYMAN, Chatenay les Sceaux, near Paris, has to offer the following Roses, fine Trees and Shrubs, trained ; Ornamental Trees and Shrubs, Tree and sinensis Pæonies ; Magnolia Lenné, oxoniensis and others ; Camellias, Rhododendrons, Azaleas, Clematises, Conifers, Bamboos, Yuccas, tuberous Begonias, Viola Belle de Chatenay and others ; Trees for Avenues, such as Acers, Platanus, Horse Chestnut, for FRUIT TREE STOCKS, FOREST TREES, and others of every description grown in large quantities : Manetti, De la Grifferaie and Brier Rose Stocks.

Send for Trade List and Catalogues to L. P., as above ; or to his Agents in London, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, E.C.

Australian Plants and Seeds.

EUCALYPTUS GLOBULUS, PALMS, CYCADS, FERNS, and all kinds of PLANTS and SEEDS indigenous to Australia, Fiji, &c., supplied on the most reasonable terms. Priced CATALOGUES and Special Quotations on application.

SHEPHERD AND CO., Nurserymen and Seedsmen, Darling Nursery, Sydney, New South Wales. (Established 1827.)

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WM. PAUL & SON,



(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS, HERTS,

Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

RICHARD SMITH & Co. WORCESTER

FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass ; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts ; also 80,000 choice Tea-scented and Noisette Roses in pots ; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease ; Planting Canes, 3s. 6d. to 5s. each ; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*," and RICHARD SMITH & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6d. each. Maiden Trees, 1s. 6d. each ; Bushes, 3s. each ; Standards, Pyramids, and Dwarf-trained Trees, 3s. 6d. and 5s. each.

HARDY HERBACEOUS and ALPINE PLANTS, their scientific and English names, height, colour, time of flowering, and other useful information. Descriptive Price List for a penny stamp. Collection of 100 beautiful hardy varieties for Garden Beds, Borders, or Rockeries, for 30s.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST of STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for a penny stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for a penny stamp.

ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

RICHARD SMITH & Co. WORCESTER

TEA ROSES FOR WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9 inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

CRANSTON & CO.,
NURSERIES, KING'S ACRE, HEREFORD.

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MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS,
CHEAP EVERGREENS for COVERS,
PLANTS for WINTER BEDDING,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.

Milford, near Godalming, Surrey.

Kent, the Garden of England.

FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.

THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone ; also at Ashford.

HARRISON AND SONS, Royal Nurseries, Leicester, have the following stocks, all well-grown and healthy trees ; will be pleased to send sample and quote prices for large or small quantities of any :—

5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 6 inches to 3 feet.
10,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
10,000 large trees for immediate effect, consisting of LIMES, ASH, BIRCH, ELM, POPLARS, SYCAMORES, &c.

Cabbage and Lettuce Plants.

H. J. HARDY, Stour Valley Seed Grounds, Bures, Suffolk, begs to offer a quantity of strong, healthy, autumn-sown plants :—

ENFIELD MARKET and CARTER'S HEARTWELL, 5s. per 1000.
RED DUTCH, 5s. per 1000.
LETTUCE.—Brown Cos, Siberian, and Champion, 5s. per 1000.

Package and carriage free for 5000 upwards (or plants equivalent), to any Railway Station in England.
Reference required from unknown Correspondents.

Plants, Special.

The present is the best time for planting

HARDY NORTH AMERICAN ORCHIDS, such as Cypripedium, Habenaria, Orchis, &c., in their many species, of which we offer a splendid stock of newly imported plants with strong flowering crowns. Also DISA GRANDIFLORA, in imported clumps, full of tubers, from 5s. each. This is the most beautiful of terrestrial Orchids, and ought to prove quite hardy in England.

N.B. The North American Orchids, grown as Cool-house Orchids, are most charming ; and as their prices, for flowering plants, range from 2s. 6d. to 3s. 6d. each (and less when more are taken) they are within the reach of everyone.

CATALOGUES post-free on application.
THE NEW PLANT AND BULB COMPANY, Colchester.

Planting Season.

MESSRS. JOHN STANDISH AND CO. beg to call the attention of those engaged in planting to their extensive and well-grown stock of EVERGREEN and DECIDUOUS PLANTS, FOREST TREES, &c. All are without exception well rooted and in fine condition for removal. The following list comprises a few of those Trees, of which they grow immense quantities :—

FOREST TREES.
Acacia, 2 to 4 and 10 feet.
Birch, 3 to 4 feet and 10 to 15 feet.
Chestnut, 2 to 4 feet.
Pinus Laricio, 1 to 2 feet.
Pinus austriaca, 1 to 1½ foot.
Scotch Fir, 1 to 1½ foot.
Spruce, 1½ to 2½ feet.
Weymouth, 3 to 4 feet.
RHODODENDRON, fine named varieties.
„ seedling, 2 to 4 feet, fine.
„ ponticum, 12 to 18 inches, very bushy.
YEW, English, 2, 3 and 4 feet.
„ Irish, 3, 4 and 5 feet.
BOX, 2 to 2½ feet.
AUCUBAS, green and variegated.
BERBERIS, Darwinii.
„ Aquifolium.
LAUREL, common, 2 to 2½ feet.
„ „ 3 to 4 feet.
„ caucasicum, 2 to 2½ feet.
„ obovata, 1½ to 2 feet.
„ latifolia, 1 to 1½ foot.
„ Portugal, 1½ to 2½ feet.
„ „ 3 to 4 feet.
HOLLY, Green, 1 to 1½ foot
„ hybrid, 1½ to 2 feet.
„ „ 2 to 3 feet.
„ variegated, in variety.
ROSES, H.P., in variety, Standards.
„ „ Half-standards.
„ „ Dwarfs.
„ Tea, in pots, in great variety.
„ Gloire de Dijon, extra strong.
„ Marechal Niel, extra strong.
CLEMATIS, IVIES, and other CLIMBING PLANTS, and a vast variety of EVERGREEN and DECIDUOUS SHRUBS. Also
FRUIT TREES.—Pyramid Apples, Pears, Plums ; Trained Apples, Apricots, Cherries, Nectarines, Pears, Peaches and Plums.

Samples and quotations on application.
Royal Nurseries, Ascot, Berks.

The Largest Black Grape in Cultivation, Gros GUILLAUME (ROBERTS' VARIETY).

W. TAIT AND CO. can now supply planting Canes of this wonderful Grape, which is quite distinct from the old Gros Guillaume and Barbarossa. For particulars see *Gardeners' Chronicle*, pp. 632 and 602. The Canes now offered are from eyes taken from Mr. Roberts' parent Vine at Charleville.

Planting Canes, 7s. 6d. each, stronger, 10s. 6d. each.
W. TAIT AND CO, Nurserymen and Seedsmen, Dublin.

DENDROBIUM SUPERBIENS.

A dozen spikes, each with from fifteen to twenty flowers, of this very

HANDSOME NEW DENDROBIUM

CAN NOW BE SEEN AT MR. WILLIAM BULL'S ESTABLISHMENT.

The blossoms of this Dendrobium are remarkably persistent, remaining fresh and in good condition for nearly three months, so that they will be in flower for some time to come.

An Inspection is invited.

ESTABLISHMENT for NEW and RARE PLANTS,

KING'S ROAD, CHELSEA, LONDON, S.W.

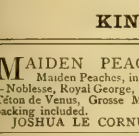
MAIDEN PEACHES.—A few hundred Maiden Peaches, in the following varieties, for sale, viz., —Noblesse, Royal George, Royal Kensington, Red Magdalene, Téton de Venus, Grosse Mignonne, &c. Price 50*s.* per 100, packing included.
JOSHUA LE CORNU, High View Nurseries, Jersey.

To the Trade.

WM. SMITH AND SON, SEEDSMEN, Aberdeen, beg to offer their surplus stock of the following POTATOS, viz, Rintoul's Early White and Pink Dons, Ashleaf Kidney and Champion, all carefully selected. Prices on application.

SPECIAL TRADE OFFER.—50,000 Dwarf ROSES on Manetti, finest plants in the trade, my selection, all first-rate sorts, 30*s.* per 100, £12 10*s.* per 1000 : 50,000 strong SEAKALE, for forcing, 40*s.* per 1000 ; 100,000 Giant ASPARAGUS, 1-yr., 7*s.* 6*d.* per 1000 ; 2-yr., 13*s.* per 1000 ; 3-yr., 20*s.* per 1000 ; 100,000 1-yr. cultivated seedling BRIERS, fine, 20*s.* per 1000 For cash with orders.
RICHARD LOCKE, Alexandra Nurseries and Rose Farm, Red Hill, Surrey.

GEO. JACKMAN & SON,
(ESTABLISHED 1810.)



Cultivators of
FRUIT and FOREST TREES
Evergreen and Flowering
TREES and SHRUBS,
ROSES, RHODODENDRONS,
Conifers and Hardy Climbers.

THE CLEMATIS
A SPECIALITY.

Descriptive Priced Catalogues free.
WOKING NURSERY, SURREY.

Important—Important.

SEED POTATOS.—Seedsmen desirous of securing (at remarkably low prices) a genuine and healthy Stock of all the principal English and American varieties, grown from choice and carefully selected Seed, will please send for Special TRADE LIST, post-free on application.
D. BRINKWORTH AND SONS, Seed Potato Growers, Reading, Berks.

ADIANTUM CUNEATUM, strong, in 48's, £3 per 100.
PELARGONIUMS, strong, in 60's, all the leading varieties, such as Grand Duchess, Digby Grand, Rob Roy, Captain Raikes, Queen Victoria, Beauty of Hoxton, &c., £1 4*s.* per 100.
HOLLIES, gold and silver, worked last autumn, £1 10*s.* per 100.
W. L. MAITLAND, Merton Abbey Nursery, Merton Abbey, Surrey

STRAWBERRIES and RASPBERRIES.—From the fact of my being located in the midst of hundreds of acres of all the best and most profitable kinds, I am enabled to offer unusually fine Plants and perfectly true to name. All those who wish to grow for gain should have the Kentish well-known varieties. STRAWBERRIES, in 6-inch pots, and small, for planting, to give a crop at once, are very fine. Having them from a distance, together with change of soil, is the very secret of success.
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CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2*s.* 6*d.* ; C. Libani, 3 feet, 2*s.* 6*d.* ; Thujopsis borealis, 5 feet, 2*s.* 6*d.* ; Thuja gigantea, 4 feet, 2*s.* 6*d.* ; Cupressus Lawsoniana viridis, 4 feet, 2*s.* 6*d.* ; Swedish Juniper, 4 feet, 1*s.* 6*d.*, 6 feet, 2*s.* 6*d.* ; Golden Retinospora, 2 feet, 2*s.* 6*d.* ; Ericoides, 2 feet, 1*s.* ; Gold and Silver Hollies, 2 feet, 2*s.* ; Picea nobilis, 3 feet, 3*s.* ; Pinsapo, 3 feet, 2*s.* 6*d.* ; Nordmanniana, 3 feet, 2*s.* 6*d.*, 4 feet, 4*s.*, 5 feet, 5*s.* ; Limes, 15 feet, 2*s.* 6*d.* ; Birch, 15 feet, 1*s.* ; Chestnuts in variety, 1*s.* each ; Scarlet Oak, 15 feet, 1*s.* ; Araucarias, 4 feet, 20*s.* ; 5 feet, 30*s.* ; Rhododendrons, scarlet, rose, white, 2 feet, 2*s.* 6*d.* ; Green Hollies 1 to 1½ foot, 25*s.* per 100.
E. WALKER, Farnborough, Hants.

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MANETTI ROSE STOCKS.
CURRANTS, all varieties, fruiting trees.
APPLES, nice pyramids, fruiting trees.
PEARS, nice pyramids, fruiting trees.
APPLE STOCKS, 2-yr., good.
COMMON YEWS, fine, 1 to 3 feet.
LIMES, extra fine specimens.
various sizes.
MAPLES.
PRIVET, fine, 1-yr. stuff.
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150,000 Splendid CROCUS, colours separate ; also a large collection of fine mixed English IRIS, 9*d.* per dozen. Early and Late TULIPS, 1*s.* per dozen. LILIUMS, from 4*d.* each. ANEMONES, 1*s.* per dozen. RANUNCULUS, 1*s* per dozen. GLADIOLUS, from 1*s.* per dozen. SNOWDROPS, 3*s.* per 100.
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Offer Seed of this splendid variety, saved from the original stock which for years has produced 90 per cent. of double flowers. It is most brilliant in colour, and possesses the true East Lothian habit.
Though not quite new, this variety is only partially known, and deserves wide popularity. Many seedsmen substitute the scarlet variety for it, supposing no real difference exists.
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H. McMILLAN has some fine well-grown ORNAMENTAL TREES and SHRUBS to offer, which have all been transplanted within two years. No reasonable offer will be refused, as the ground must be cleared.
Horse CHESTNUT, 9 to 11 inches in circumference at surface of ground, and 14 feet to 16 feet high.
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Lombardy POPLARS, 20 feet high.
Also some fine BIRCH, MAPLES, Spanish CHESTNUT, New Silver POPLAR, &c.
PYRACANTHA, in 48-pots, 2 feet high, very good.
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Evergreen PRIVET, very bushy.
Irish IVY, in pots and open ground, very fine.
YUCCA RECURVA, fine specimens.
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SPECIAL OFFER TO THE TRADE.—SURPLUS STOCK on SALE, as the land must be cleared for building purposes ; all fine healthy plants, many times transplanted.

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CHERRIES, Standards, extra strong, 9*s.* per dozen, 60*s.* per 100 ; half do., do., 6*s.*, per dozen, 45*s.* per 100.
PEARS, Pyramids, 3 to 4 feet, extra strong, 5*s.* per dozen, 30*s.* per 100 ; Half-standards, 4 to 5 feet, strong, 7*s.* per dozen, 50*s.* per 100.
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CHESTNUTS, Horse, 6 to 8 feet, strong, 16*s.* per dozen ; 8 to 10 feet, 25*s.* per 100.
„ „ Scarlet, 5 to 6 feet, strong, 8*s.* per dozen ; 6 to 8 feet, 10*s.* per dozen.
LIMES, 2 to 3 feet, strong, 4*s.* per 100 ; 3 to 4 feet, 6*s* per 100 ; 4 to 5 feet, 10*s* per 100 ; 5 to 6 feet, 15*s.* per 100 ; 6 to 8 feet, 25*s.* per 100 ; 8 to 10 feet, 60*s.* per 100.

EVERGREEN SHRUBS.

BOX, Green, 1 to 1½ foot, 2*s.* per dozen, 12*s* per 100.
RHODODENDRONS, 6 to 9 inches, 8*s.* per 100 ; 9 to 12 inches, 12*s.* per 100.
„ fine and bushy, 1 to 1½ foot, 20*s.* per 100 ; 1½ to 2 feet, 35*s.* per 100.
YEWS, English, 9 to 12 inches, 10*s.* per 100 ; 1½ to 1¾ foot, 12*s.* 6*d.* per 100 ; 1 to 2 feet, 17*s* per 100 ; 2 to 3 feet, 25*s* per 100 ; 3 to 4 feet, 45*s.* per 100, and 9*s.* per dozen.
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MENTHA PULEGIUM, strong clumps, 15*s* per 1000, 2*s.* per 100.
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CATALOGUE of General Nursery Stock on application.
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LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety ; colour, purplish azure, changing to pale azure when fully developed ; form, fine ; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable at the following rates :—15*s.* per dozen, 6*d.* per half-dozen, 1*s.* per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms. GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

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SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to LEVAVASSEUR AND SON, Nurserymen, Us-y, Calvados, France : or to their Agents, Messrs. R. SILBERRAD AND SON 15, Harp Lane, Great Tower Street, London, E.C.

Cheap Kentish Fruit Trees, etc.
On Ground that must be Cleared this Season.

SPECIAL OFFER.
15,000 APPLES and PEARS, Standards and Pyramids, from 60*s.* per 100
20,000 PLUMS, Standards and Pyramids, from 50*s.* per 100.
5,000 CHERRIES, tall Standards, 75*s.* per 100 ; Maiden Morells 5, 50*s.* per 100 ; trained, from 18*s.* per dozen.
LIMES and SYCAMORES, 10 to 12 feet, from 75*s.* per 100.
A van-load delivered free in or near London.
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CHESTNUT, Horse, 8 to 10 feet.
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PETER SMITH AND CO., Hamburgh, beg to offer the following splendid and rare LILIES and other Plants :—
LILIUM CALLOSUM, 24*s.* per dozen.
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„ TIGRINUM, finest, 6*s.* per dozen.
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LILY OF THE VALLEY, best Hamburgh variety, single blooming crowns, 30*s.* per 1000.
GLADIOLUS, best varieties, 12*s.* per 100, 100*s.* per 1000.
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THUJA CRAIGIANA, single pots, 5 to 7 inches, 25*s.* per 10 ; 7 to 10 inches, 35*s.* per 100.

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Her Majesty's Government.

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This system is now being universally adopted by Her Majesty's Government, several of the leading Railway Companies, some of the principal Corporations, including the Metropolitan Board of Works, Commissioners of Sewers, and the New Winter Garden Companies throughout the country.

There is an enormous Saving in the Maintenance and Repairs of Roofs on this System—say from 80 to 90 per cent.—and there is no reason why a Roof should not be as perfect in 20 years as the first week, because all the perishable Materials, such as wood, iron or paint, are completely covered by the glass from the destructible influences of the weather.

Another great recommendation is that there is no breakage from contraction or expansion either from heat or cold, as the glass has full play in every direction. Tens of thousands of squares are broken from this cause every year. Nor is there any breakage from vibration of large Railway Roofs in heavy gales of wind, or from the passing of express or fast trains. Indeed, it is well known that a puttied roof is never perfect in a station where express trains run through.

In adopting this system, all the everlasting expenses of repainting or reputtying are completely done away with; and, as it is now used by several of the Great Railway Companies, an enormous saving will be effected—it will have a considerable influence in supplying an addition to the yearly dividends.

SUMMARY OF SPECIAL ADVANTAGES.

1.—*Saving of from 80 to 90 per cent. in maintenance and repairs.*
2.—*No breakage from contraction or expansion, from heat or frost.*
3.—*No breakage from vibration caused by heavy winds or passing trains.*
4.—*Squares of glass can be instantly replaced.*
5.—*The construction is very strong and durable.*
6.—*The glass is to be put in in one-fourth the time of the old plan.*
7.—*Putty, cement, felt, &c., are entirely dispensed with.*

CAUTION.—Proceedings in Chancery will be immediately commenced against any one **Infringing the Patent**, or adopting any colourable imitation of the same,—not only are the Manufacturers liable, but also the Sellers and Users. **A very handsome Reward will be given** to any one who will give information of any infringement of the Patent.

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Caledonian Railway—
Carlisle Citadel Station (area of glazing, 322,000 feet),
Gordon Street Station, Glasgow (area of glazing, 130,000 feet),
Rutherglen Station.

City of Glasgow Union Railway
Bridge Street Station, Glasgow (150,000 feet sup.),
Enoch Square Station, Cab Sheds, Glasgow,
Kinning Park Goods Station, Glasgow.

Great Eastern Railway—
Goods Depot, Bishopsgate.

Great Western Railway—
Bath Goods Station,
Cardiff Station,
Great Malvern Station,
Kidderminster Station,
Landore Station,
Milbay Station, Plymouth,
North Road Station, Plymouth,
New Engineer Offices, Paddington,
Newport Station,
Neath Station,
Paddington Station,
Offices, Paddington,
Ruabon Station,
Swansea Station,
Stourbridge Station,
Torquay Station,
West Drayton Station,
Waggon Sheds, Westbourne Park.

Great Northern Railway of Ireland—
Belfast Goods Sheds,
Running Sheds, Dublin.

Great Southern and Western of Ireland—
Mallow Station,
Goods Station, Dublin.

Great Northern Railway—
Batley Carr Station,
Bradford (City Road) Station,
Brick Lane Stables, Bradford,
Clayton Station,
Derby Station,
Dewsbury Station,
Greenside Station,
Great Horton Station,
Low Fudsey Station,
Manchester Road Station,
Thornton Station.

London and North-Western Railway
Birkenhead Station (70,000 super feet),
Crewe Station,
Wolverton Carriage Sheds.

London, Brighton, and South Coast Railway—
Horsham Engine Sheds,
New Painters' Shop, Brighton,
New Cross Gasworks,
Victoria Station.

London, Chatham, and Dover Railway—
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Midland Railway—
Lincoln Station,
Rowsley Engine Sheds.

North Staffordshire Railway—
Engine-house, Smithy, &c., Stoke-upon-Trent.

North British Railway—
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Messrs. Parker's Works, Smithfield,
Palatine Arcade, Blackpool,
Messrs. Stewart, Coatbridge,
Messrs. Trumble & Co., Leeds.

Weaving Sheds.

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Messrs. Marshall & Co., Leeds.

Winter Gardens, etc.

Blackpool Winter Gardens, | Morecambe Winter Gardens,
Leicester Floral Hall, | Rhyl Winter Gardens,
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For all other information see ILLUSTRATED CATALOGUES and BOOKS of DESIGN, which can be obtained from the INVENTOR and PATENTEE,

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HOTHOUSES Built with WOOD,

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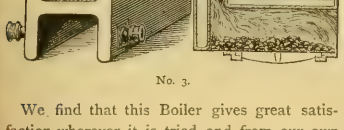
Are rendered practically Imperishable, being

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May be seen in most parts of Great Britain and Ireland;

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We find that this Boiler gives great satisfaction wherever it is tried, and from our own experience we can recommend it.

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Erected complete, or the Materials supplied at Moderate Prices.

ILLUSTRATED CIRCULARS POST-FREE.

Complete Catalogue, 3s.

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Mr. W. BROWNE, the Park Superintendent of Regent's Park, writes:—

"*I have applied your Manure to Cannas, Solanums, Ricinus, Coleus, Alternantheras, &c., out-of-doors, and am well satisfied with result. Its effect has been equally good on pot plants indoors, such as Dracænas, Crotons, Musas, Palms, Pelargoniums, &c.*"

The *Journal of Horticulture* of October 17, 1878, in an article on Regent's Park, says:—"Mr. W. Browne, the able Superintendent, has been especially successful in his floral arrangements."

Messrs. FELTON & SONS, Nurserymen, of Birmingham:—

"*During the past season we have given your Manure a careful trial, and we are so satisfied with it that we are now using it in all departments of our nursery. We have more especially noticed its very beneficial effects on stove plants, our Dracænas, Crotons, Marantas, &c., having made wonderful growth and coloured remarkably well since treated with it. Our young stuff potted with it looks grand.*"

Mr. J. E. ROSE, Gr. to J. H. Renton, Esq., Muswell Hill:—

"*My experiments with your Manures are of such a satisfactory character that they deserve special mention. A batch of old exhausted French Beans that were only awaiting to be thrown away, I gave a good top-dressing. The results were really astonishing. They produced a second crop, and lasted in bearing for several weeks, and furnished us with a good supply, and little, if any inferior to that of the first crop. I also used it as a top-dressing on two plants of Stephanotis growing in pots. I never in my experience had such a succession of fine blooms—it has been one mass all through the season, and promises to continue for a long time to come. As a proof how much the Stephanotis appreciate the application of Amies' Manure, I applied it a quarter of an inch thick over the surface, and in three days after this dressing the young roots had formed almost a mass through the Manure. I particularly noticed it had the same effect on the French Beans. I planted three rows of Sandringham White Celery. One row after planting I gave a fair sprinkle of the Manure, and stirred it in with a garden fork about the roots. With this exception all three rows received exactly the same treatment, but there is such a marked difference in size of head and colour of foliage, that in going round the garden the other day with my employer he asked me the cause of such a difference. He expressed himself pleased to see the trial so satisfactory, and said we must have a quantity of the Manure for another season.*"

Amies' Manures may now be had of all principal Seedsmen,

In 1 Cwt., ½ Cwt., and ¼ Cwt. Bags, and in Canisters, as usual.

WRITE for DESCRIPTIVE PAMPHLET.

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SATURDAY, DECEMBER 7, 1878.

PLANT DISTRIBUTION.

AMONG recent publications of the Royal Geographical Society we note the report of a lecture on "Plant Distribution as a Field for Geographical Research," by Mr. W. Thiselton Dyer, a lecture as full of learning as an egg is full of meat, to use a familiar expression. The main object of the lecture was to indicate to travellers in what diverse ways they might contribute to the advance of practical and scientific botany—and this, without themselves being skilled botanists, or possessed of any special knowledge, but merely of the will to be useful.

The lecture is an admirable exposition, in brief, of the state of our knowledge respecting the geographical distribution of plants and the causes which have been instrumental in effecting it. It indicates the general nature of the problems yet to be solved, and shows how explorers and travellers may work to this end. The relations between scientific and utilitarian botany are well shown, and the gaps in our knowledge of the sources of so-called economic plants pointed out. A few extracts will serve to show the general scope of the address and the manner in which it has been treated.

It is the fashion in some quarters to sneer at herbaria as so many haystacks—the intent of the sneer being to convey the idea that they are of little scientific value. Mr. Dyer is of a different opinion. "However efficiently," says he, "a scientific botanist may study the plants of a country in which he happens to be residing, in the living state, it is clearly impossible they can be compared with those of other countries unless specimens can be preserved suitable for examination, and deposited in some central situation available to students. . . . A herbarium in modern times is not a thing got together from the mere blind passion of accumulating rare and curious things, but is an instrument of scientific investigation—a method of bringing together in a convenient space the materials for studying and comparing the world's vegetation." This affords an opportunity for impressing on intending travellers in little known regions the desirability of collecting and preserving specimens of the plants they meet with. Even if this be only done in a comparatively desultory unsystematic manner, the results may be very important, as is shown by the remarkable results obtained from an examination of the few scraps which the late Rev. Mr. New managed to collect in his ascent of Kilema Njara, a snow-capped mountain in tropical Africa. Where more careful and complete collections can be made, as was the case with Colonel Grant, the companion of Speke, the results, of course, are proportionately more important; while of the value of such collections made by one who, like Welwitsch, resided permanently in the country, it is impossible to speak too highly. Mr. Dyer alludes to some very striking instances wherein, so to speak, casual and very imperfect collections have proved to be of great scientific importance.

But, as we have said, the practical side of the question is not omitted, and Mr. Dyer passes on to show the great value of herbaria for economic purposes:—

"The botanical determination of the existence of the indigenous Tea plant in Assam initiated the commence-

ment of the Indian Tea cultivation.* In what promises to be another great branch of Indian industry—the cultivation of Cinchonas, the botanical determinaiion of the valuable species has been all-important. None have felt this more than the Dutch, who introduced a worthless species (Cinchona Pahudiana) at great cost into Java, the cultivation of which they had eventually to abandon. To point to more recent instances which fall within my knowledge, I may mention that after the India Office had gone to great expense in bringing over to this country for introduction into India the true plant which yields Para india-rubber, we learnt that one bearing the same scientific name (Hevea) was already in cultivation in the botanic gardens of the East. On obtaining authentic specimens we were able to ascertain that, though a rubber-producing plant, it was really quite different from that of Para, and so disappointment and confusion were obviated. To take some minor instances: a substance called Chicle gum was sent to us from America as likely to be of use in telegraphic engineering. Had it proved of any value—which it did not—in ascertaining the fact that it was produced by a widely cultivated tropical plant (Achras Sapota) we should have been able to introduce a new industry into countries where the Sapodilla Plum already grows. A grass (Uniola virgata), again, was sent to us from the West Indies as a proposed paper material. Grasses are so much alike in leaf and stem that but for a fragment of the inflorescence we could not have identified the species. When this was done, residents who are acquainted with the plants of Jamaica would have no difficulty in knowing where to find it, and, if it proves worth while, can cultivate it for the purpose. As a final instance, let me take the introduction of a new drug (Duboisia myoporoides) which we owe to Baron von Mueller. The natives of Central Australia have long been known to chew a plant which they call Pituri, which invigorates them on long foot journeys, and excites their courage in warfare. Baron von Mueller succeeded in identifying this plant as Duboisia Hopwoodii. This led him to test the properties of another species—Duboisia myoporoides, which he found to possess amongst others that of dilating the pupil, for which purpose it is already in use in ophthalmic surgery.†

"And even of things which find their way into commerce, our ignorance of the source is often remarkable. Till within the last few years it was supposed on the best authority that the well-known kinds of tobacco grown at Lattakia and in Cuba were the produce of some other species of Nicotiana than N. Tabacum, which really yields them. St. Ignatius' Beans, which find their way into the markets of this country as a source of the deadly poison strychnine, are the seeds of a fruit which is said to be sold in the market at Manilla, and there our knowledge stops. The various kinds of Cardamoms which are found in Eastern trade are the seeds of plants most imperfectly known, though some species grow in forests under the charge of Government officers. When we approach China we find, as we might expect from the sagacity of that ancient people, that the vegetable products in use amongst them are very numerous, but that the origin of them is very little known amongst Europeans. It required all the energy of Sir William Hooker to urge his correspondents during several years to trace out the history of the plant whose pith is the material of rice-paper, and which is confined to the island of Formosa.‡ It was reserved for Lieut.-Colonel Prejevalsky as the crown of his adventurous journey to Lake Kokonor, to settle finally the controversies as to the source of true or Kiakhta Rhubarb, and to study the real plant producing it (Rheum palmatum) on its native soil; being, says Col. Yule, 'the first European who had seen it there since Marco Polo.'

"During the course of last year the attention of the Indian Forest Department was attracted by the high price given at Shanghai for coffins made of Nan-mu wood. Of the same wood the Imperial palaces at Pekin are also said to be built, although travellers were quite content to believe they were constructed of Teak, just as antiquaries have held, and with as little accuracy, that the oaken roofs of our ancient buildings were made of Chestnut. This tree appears to be indigenous to Yunan; and a few leaves collected by Mr. Davenport during the mission to that country, and examined by my acute colleague, Professor Oliver, have rendered it probable that this celebrated timber-tree is at any rate a member of the Laurel family, and possibly allied to Phœbe pallida, with whose foliage its own closely agrees.

"However, I fear I have too long trespassed on your patience in endeavouring to illustrate by example as well as precept the immense services which the 'roving Englishman,' and still more the disciplined explorer, might render to that practical side of botanical studies which at Kew we never lose sight of for a moment. All economic plants, whose range is at all contracted, progress steadily towards extinction, and the first step in attempting to obviate this by bringing them under cultivation is to make quite sure that we have got hold of the precise plant which produces the thing of which we wish to keep up the supply."

We have not space to follow the lecturer in his *resumé* of the present state of our knowledge and of our ignorance—which latter, indeed, furnished one main object of the lecturer's discourse—of the three great primary floras of the world. The northern flora, with its forests of Conifers and catkin-bearing trees extending over vast areas; the southern flora, broken up into numerous local groups; and the tropical flora, with its relative absence of herbs and predominance of trees, are all touched on in this lecture, and the deficiencies in our knowledge are pointed out in such a way as to show to the geographers to whom the lecture was addressed the most ready means of supplying them.

One thing we miss in this excellent lecture—and the omission is to us a source of regret—the claims of horticulture are almost entirely ignored. Is there anything more provoking for the botanist and horticulturist than the narrative of the average traveller, telling of noble trees, lovely flowers, curious plants, of products and materials yielded by this, or fabricated from that plant, the plant itself being described in such language that its recognition is wholly impossible by the practised botanist, while of course to the general reader absolutely no information at all is conveyed? In indicating to geographers and travellers the points on which botanical information such as above mentioned is required, the opportunity might well have been taken to have also impressed the necessity for cultural purposes of observations of extremes of temperature and other climatal conditions. These are important factors in "plant distribution," while their practical value is obvious. But the subject is too vast for treatment within a few octavo pages, so that the wonder is, not that one department was passed over, but that it should have been possible to say so much and to the purpose, in so limited a space.

* A. Burrell, "Indian Tea Cultivation," *Journal of the Society of Arts*, vol. xxv., pp. 206, 207.

† *Nature*, May 24, 1877.

‡ *Journal of Botany*, 1852, pp. 50—5

New Garden Plants.

BULBOPHYLLUM KHASYANUM, *Griff.**

This was discovered by the eminent botanist, Dr. W. Griffith, in the Khasia hills. Later on it flowered at Chatsworth, having been gathered by the late Mr. Gibson. Dr. Lindley named it B. Gibsoni, but it appears that the name was never formally legitimatized by any publication, so that it has to give way to Dr. Griffith's name, given with the description in his *Notulæ*. It was found afterwards in Burmah by the Rev. C. Parish; and now, at the end of November, 1878, it is in flower in the collection of Mr. W. Leach, Oakley, Fallowfield, Manchester, under the able management of Mr. W. Swan. It came with Vanda cœrulea. This species has unusually thick oblong leaves, with a rather long petiole, reaching the length of a span. The slender peduncle looks brownish, but when you investigate it nearer you find it greenish, with numerous purplish brown longitudinal, sometimes confluent stripes. There is one narrow sheath in the centre of it. The raceme itself is very dense, with very numerous flowers, and is bent down into an acute angle to the summit of the peduncle. There is, however, one peduncle gathered by Dr. Griffith in Dr. Lindley's herbarium, where the raceme is ascending. This inflorescence seldom exceeds the length of an inch. The bracts are triangular, light brown, exceeding the green ovaries. The single sepal is triangular, acuminate, ochre-coloured, with three dark chocolate-brown veins; the lateral sepals nearly flat, spreading, form one oblong mass, connate, but split into two laciniæ with bristle-like apiculi; each side with three broad dark purplish nerves. The very small petals are spatulate, apiculate, with some small teeth around the apex, one-nerved. The fleshy lip is oblong acute, with a small tooth on each side and two keels from those teeth running in an oblique manner to the centre. The very small column has on each side a nearly square upright auricule, with a central tooth on the superior side. The species is very peculiar in its appearance. *H. G. Rchb. f.*

* *Bulbophyllum khasyanum*, Griff — Pseudobulbo conico monophyllo a vaginis ligulatis demum solutis stipato; folio valde coriaceo bene petiolato oblongo-ligulato obtuse acutiusculo; pedunculo gracili medio arcte univaginato; racemo densissimo brevi refracto; bracteis triangulis ovaria pedicellata superantibus; sepalo impari triangulo acuminato trinervi; sepalis lateralibus oblongis latis multo majoribus, apice excepto connatis, ibi fissis, apice aristulatis; petalis spatulatis apice obtusatis, denticulatis cum apiculo; labello carnoso ligulato, basi utrinque minute angulato, carina de angulo usque in discum incurrente; columna brevi auricula, erecta membranacea ligulata retusa cum apiculo utrinque.—*Bolbophyllum khasyanum*, Griff. Not. 284; *Bolbophyllum Gibsoni*, Lindl. MSS. *H. G. Rchb. f.*

ODONTOGLOSSUM CRISTATELLUM.*

A very curious plant, most probably a hybrid between O. cristatum and some species like triumphans or epidendroides. It is said to be very florid, bearing side racemes. As to that richness I have but a single flower before me much in the way of that of Odontoglossum cristatum, but with hastate petals. The sepals and petals are light yellow with sepia-brown few spots. The lip is short, narrow, nearly oblongo-pandurate, apiculate, undulate, with exceedingly minute teeth and the callosity like that of the common Odontoglossum cristatum, Lindl. There stand on each side six teeth, and before them two rhomboid serrate lamellæ, all yellowish, serrated with cinnabarina-purple. The anterior part of the lip is sepia-brown. The front side of column has three violet spots on its base and some brown lines. I have to thank Mr. Bull for this curious plant. *H. G. Rchb. f.*

* *Odontoglossum cristatellum.*—Aff. Odontoglosso cristato, Lindl.—Sepalis basi subhastatis: labello brevi unguiculato, lamina ligulata lobulata undulata apiculata; limbo minuto denticulato, callis subulatis obtuse acutis radiantibus in basi, carinis rhombeis serratis duabus antepositis; columnæ trigona arcuata supra basin utrinque, angulatis quadratis minute serratis.—In horto Bullhano apparuit. *H. G. Rchb. f.*

HARDY STONECROPS: SEDUMS.

(*Continued from p.* 685)

39. S. ANGLICUM, Hudson; Willd. Sp. Pl. ii., 768.

Glabrous. Barren shoots trailing or erect, 1—2 inches, forming dense cushion-like masses. Flowering stems 2 inches.

Leaves crowded, alternate, sub-opposite, less crowded on the flower-stem, erect or spreading, ⅛—¼ inch, ovate acute, or ovate lanceolate; gibbous, green, becoming tinged with red.

Cymes dichotomous, few flowered. Flowers ⅜ inch, 5-merous.

Flower-buds pyramidal, 5-angular, sulcate.

Sepals ovate acute, less than half the length of the lanceolate pure white or rosy tinted petals.

Anthers sub-globose, red, becoming black.

Carpels erect, white, style subulate; scales red.—Fl. July.

Eng. Bot., ed. Syme, t. 531.

Syn. S. oblongum, Haw. Rev. Succ., p. 29, *teste* Baker.

Western Europe, Britain.

A very neat and pretty species, suitable for rockeries; but it is not an easy species to cultivate, unless closely watched.

40. S. MONREGALENSE, Balbis, ex DC. Prod. iii., 403 (1828).

Glabrous, except in inflorescence. Barren shoots spreading, erect, or creeping, slender, cylindrical, 1—4 inches, rooting at the nodes.

Leaves on the barren shoots crowded, spreading, linear or obovate-oblong, thick, papillose, ⅛—¼ inch.

Leaves on the fertile shoots scattered, narrower than on the barren stems, often spotted with pink.

Inflorescence a lax terminal many-flowered panicled cyme, with glandular pubescence, primary peduncles deflexed, ultimately erect or spreading.

Buds roundish, pointed.

Flowers ¼ inch diameter, white, 5-merous.

Sepals deltoid, glandular, pink spotted, one-third the length of the petals.

Petals spreading, deltoid, mucronulate, somewhat concave, white on the upper surface, pinkish brown, and glandular, pubescent beneath.

Stamens nearly as long as the petals; filaments white, anthers pinkish.

Carpels whitish, styles erect. Scales white. — Fl. Summer.

Syn. S. cruciatum, Desf. Cat. (1829), et DC. Fl. Fr. 361.

North Italy, Corsica.

A very pretty dwarf species, of compact habit, with leaves of a bright cheerful green, and panicles of white starlike flowers. The reflexed inflorescence and glandular hairs on the peduncles give this species a very distinct appearance.

41. S. DASYPHYLLUM, Linn. Sp. 618; DC. Prod. iii., 406.

Glaucous, glabrous, or glandular.

Stems tufted, slender, 2—3 inches, branching.

Leaves crowded, sessile, spreading, oblong-acute or suborbicular, thick, studded with crystalline-looking pimples, ¼—⅛ inch.
Cymes corymbose, lax, few flowered.
Buds oblong cylindric, obtuse.
Flowers ¼ inch diameter.
Sepals oblong obtuse, fleshy.
Petals 3—4 times longer than the sepals, lanceolate, pinkish.
Filaments glabrous ; anthers black.
Carpels white. Styles erect.
Scales pink or yellow.—Fl. July.
Jacq. Vind. ii., t. 153 ; Eng. Bot., t. 636 ; DC. Pl. Grasses, t. 93.
Syn. S. reticulatum, Schrenk, ex DC. Prod. iii., 406.
Britain, Europe, Northern Africa.

This species, which is found on walls and rocks in some parts of England, though considered a doubtful native, varies in the amount of pubescence, being sometimes found nearly or quite glabrous. The following variety is often met with in cultivation :—

Var. *glanduliferum*, Moris, Fl. Sardoa, ii., 125 ; Hook. fil. Bot. Mag., t. 6027 ; Ball, Spicil. Fl. Maroc. in Journ. Linn. Soc. xvi., 452, densely glandular pubescent. = S. glanduliferum, Gussone, Flor. Sicul. Prodr. i., 519 ; Tenore, Fl. Nap. iv., 251, t. 232, f. 2. S. corsicum, Duby, Bot. Gall. i., 299 ; DC. Prod. iii., 406 ; Tenore, Fl. Nap. iv., 252.
Mediterranean region, mountains north-west of Tetuan. Maw !
Var. *oblongifolium*, Ball, in Journ. Linn. Soc. xvi., 452 ; differs from the type in its oblong not obovate leaves.

42. S. BREVIFOLIUM, DC. Prod. iii., 406 ; Mon. Crassul., t. 4.

Glaucous, pruinose, tufted, with much the habit of S. dasyphyllum.
Leaves crowded, in four rows, $\frac{1}{10}$ inch long, ovoid, subglobose, pinkish, densely covered with mealy pubescence.
Inflorescence an umbellate 2—3-forked cyme, with a central pedicellate flower in the centre of the fork.
Flowers ¼ inch in diameter.
Sepals oblong lanceolate, whitish, with a pink midrib.
Petals oblong acute, with a pink midrib.
Anthers pink.
Carpels white ; glands yellow, emarginate.—Fl. July.
France and Mediterranean region.

When well grown this is a beautiful little species, its dense, pinkish, mealy leaves being very striking. We have found it, however, troublesome to keep, tender and impatient of moisture at the root. It is so pretty that it is amply worth a little extra care.

43. S. ALBUM, L.; DC. Prod. iii., 406.

Glabrous, tufted. Barren shoots erect or creeping, rooting, terete, olive-brown, sometimes slightly tubercled. Fertile stems erect, 4—6 inches, pinkish.
Leaves alternate, spreading, about ½ inch, linear oblong obtuse, contracted, but not gibbous at the base.
Cymes 2—3 inches in diameter, corymbose, much branched, many flowered, ultimate stalks shorter than the flower.
Buds oblong.
Flower nearly ¼ inch in diameter.
Calyx-tube cup-shaped ; sepals obtuse.
Petals lanceolate, white, spreading, twice the length of the calyx.
Anthers reddish.
Carpels white or pink, studded with glandular hairs.
Scales yellow.—Fl. Summer.
Eng. Bot., t. 1578 ; DC. Pl. Grasses, t. 22.
Syn. S. neglectum of some gardens, not of Tenore ; S. farinosum of some gardens, not of Lowe ; S. chrisianum (? Clusianum), Hort. Florence.
Britain, Europe, temperate Asia, North Africa.

When in flower this is handsome, from the profusion of its white flowers. It varies considerably in size, and to some extent in the form of its leaves. The following varieties may be mentioned.

Var. *teretifolium*, Haw. Syme ; Hook. Stud. Flor., p. 143.—Leaves much flattened above, sepals and petals obtuse.
Var. *micranthum*, DC. — Leaves on the barren shoots ascending, not spreading, as in the type ; leaves flattened on both surfaces ; flowers smaller. = S. micranthum, Bast. in DC. Fl. Fr. v., 523 ; Gren. et Godr. i., 623 ; Ball, in Journ. Linn. Soc. xvi., 453 ; S. Clusianum, Guss. Syn. i., 516, ex Boiss. Fl. Orient. ii., 781.
Var. *brevifolium*, Boissier, Fl. Orient. ii. 781.—Leaves shorter and thicker than in the type. = S. Athoum, DC. Prod. iii., 407, ex Boissier, *l.c.* ; S. turgidum of gardens, S. angulatum, Hort. Chiswick. In addition, Mr. Ball, *l.c.*, mentions a var. glanduliferum with glandular pubescent leaves.

All these forms run one into the other, so that it is difficult to identify them in the living state, much more in the dried condition.

44. S. FARINOSUM, Lowe ; Man. Flor. Madeira, i., 325.

Glabrous glauco pruinose or mealy. Stems tufted, cylindrical, much branched.
Leaves crowded in 4—6 rows, deciduous, scarcely forming a rosette, ½ inch by ¼ inch—"like grains of Rice in size and shape : Lowe," but larger in cultivation, oblong obtuse.
Cyme 2—3 parted, flowers crowded.
Buds oblong ovoid. Flowers white, 5—7-merous.
Calyx-tube very short.
Sepals linear-oblong obtuse, pink-tipped.
Petals lanceolate, acute keeled, white.
Stamens white. Anthers short, obtuse, apiculate, purpish brown.
Carpels white, erect. Style subulate. Glands pinkish. —Fl. July.
Madeira.

The plant cultivated under this name in most gardens is S. album or some form of it, and indeed it



Fig. 120.—SEDUM MULTICEPS.

is not unlikely that S. farinosum may be an outlying insular form of that species, but in cultivation it may be known by its broader, more oblong leaves, covered with mealy pubescence, and by the linear oblong sepals. When grown in the shade the mealiness disappears to a great extent. The species is rather tender.

45. S. ARBOREUM, Mast., non Ortega.

Glabrous, suffrutescent, 4—6 inches, with no separate barren shoots, branching from near the base, branches spreading.
Leaves on the older shoots deltoid, subulate, terete, or somewhat 4-sided, ⅛ inch, horizontally spreading, leaves on the younger shoots more or less crowded, linear, terete, studded with hyaline pimples.
Cymes terminal, many flowered.
Buds oblong, pointed.
Flowers ½ inch in diameter, white, 5-merous.
Calyx-tube very short. Sepals linear oblong.
Petals whitish, lanceolate, keeled, twice or more longer than the sepals.
Filaments glabrous, white.
Anthers purplish
Carpels white, erect, glabrous. Styles short, subulate. Scales emarginate, white.—Fl. July.
Hab. ?

This is a distinct looking species, with something of the habit of S. acre, but larger, and with white flowers. I have met with it at Kew and in other gardens under the name of S. arboreum or S. arborescens, but I am unable to refer it to any described species, nor can I find any species to match it in herbaria. Mr. Ellacombe sends a fasciated or crested variety.

46. S. MULTICEPS, Cosson and Durieu, Pl. Algier. select., exsicc., n. 116 ; Bull. Soc. Bot. France, ix. 1862, p. 171 ; Mast., in Gard. Chron. 1876, Aug. 12, fig. 45. (Fig. 120.)

Glaucous. Stock suffrutescent, much branched. Branches 2—6 inches, flexuose or erect, giving off adventitious roots, and bearing at the extremities dense rosettes of leaves. Flowering stems erect, twice the length of the barren stems.
Leaves ⅛—¼ inch, glaucous or pruinose, pinkish and papillose, especially near the tips, linear or oblanceolate, subterete, gibbous at the base, spreading on the barren, more or less appressed on the flower stems.
Cymes subscorpioid, many-branched, 2—6 flowered.
Buds oval acute.
Flowers 5-merous, ½ inch in diameter.
Sepals linear oblong obtuse, half the length of the oblong lanceolate spreading pale yellow petals.
Anthers pale yellow.
Carpels compressed. Style subulate. Fruit-carpels spreading.
Seeds, according to Cosson, tubercled.
Algeria.

A very distinct and pretty species, little known, but admirably adapted for carpet-bedding and similar purposes. Its flowers are of a pale straw-yellow, so that it should more properly have been placed in the yellow-flowered species, near to S. acre.

(*To be continued.*)

NEW TUBEROUS-ROOTED BEGONIAS OF 1878.

HAVING again grown in the open air during the summer now drawn to a close all the new varieties of the above-named most beautiful and highly ornamental plants that I could gather together during the early part of this year from their various raisers at home and on the Continent, to the number of thirty-six varieties with single flowers and three with double, and having carefully compared these novelties with the finest varieties of former years, growing side by side with them and under exactly similar circumstances and treatment, I shall now proceed to state briefly, for the information of those of your readers who take an interest in this class of plants (a circle which I am very pleased to believe is year by year becoming wider and more extended as the undoubtedly great merits of these plants become more generally known), the opinion I have formed of the respective merits of each of these new varieties in the hope that my remarks may not be without some practical use in enabling them to select for themselves for next year's growth those only that deserve a place in a really choice collection. Of the thirty-six single-flowered varieties above mentioned, five were sent out by the well-known Ghent house of Louis Van Houtte, named respectively.—1, P. E. de Puydt ; 2, Leopold II. ; 3, Edmond Claus ; 4, Adolphe Dubois ; 5, Pearcei vitellina. Of these the first is certainly one of the handsomest and most distinct of all the new varieties of this year, being of extremely vigorous habit of growth, and producing in great abundance immense flowers of the finest substance of a somewhat lighter shade of blush than Lemoine's Diamant, but opening much more than those of that variety, their only fault being that their footstalks are not sufficiently strong to hold them in an upright position, so that, unless supported by forked sticks, they are apt to fall about over the plant ; otherwise, this would be incontestably a first-class variety, and will still doubtless be much admired and sought after by many.

Leopold II. is almost, if not altogether, identical with Fontaine's Lelia of last year, so need not be added to any collection where that beautiful variety already is.

Edmond Claus is a variety of considerable beauty and merit, of a spreading and branching habit of growth, and producing medium-sized flowers, much resembling in shade of colour those of Lemoine's fine variety of this year named Charles Baltet, but smaller in size than the blooms of that variety, though perhaps a little more brilliant in shade.

Adolphe Dubois is a pretty variety, producing freely creamy white blooms rather under the medium size, and

with a reddish shaded outside to the petals; its habit is good, and its merit about second-rate.

Pearcei vitellina is of low-growing and spreading habit of growth, producing dark green, pointed, and deeply-marked foliage, like its parent Pearcei, and medium-sized, deep orange flowers; the females, however, being wretchedly thin and poor in shape; and, save for the novel shade of colour, this variety has hardly any merits to recommend it.

Herr Otto Frœbel, of New Münster, Zurich, sent me four varieties, named *Monte Rosa*, a fine strong-growing tufty-habited variety, with well-formed blooms, of good substance, and of a pleasing blush shade of colour. *Sulfatara*, a variety which, when good, is very fine indeed, of extremely vigorous habit of growth, and producing in great abundance large, well-formed blooms of a clear primrose-yellow, a great acquisition; it seems, however, to vary greatly, as out of three plants, all growing in the same bed and all received direct from the raiser, only one is really fine, the second having smaller-sized blooms of a paler shade of yellow, and being decidedly less vigorous in growth, and the third producing blooms of a washy whitish hue, and being altogether worthless. The same variation also appears in this raiser's Mont Blanc, which is sometimes almost pure white and sometimes of quite a rosy blush tint, but usually in this latter state of such wretchedly delicate habit of growth as to be quite worthless. *Memoria Van Houttei*, a seedling apparently from diversifolia, which it much resembles in colour of foliage, but is of much more close and tufty habit of growth; the blooms are small and poor in size, but of a deep carmine shade of colour; but as it drops all its male blooms unopened when grown in the open air, it can only be of any use for greenhouse culture. *Orange* is small, poor, and altogether worthless.

M. Victor Lemoine, of Nancy, sent me four new varieties this year, and I may also describe a fifth, which failed to bloom for me last season; they were *John Laing*, a very fine variety, with vigorous but compact habit of growth, and producing, on stout footstalks well raised above the foliage, an abundance of finely-formed cupped blooms of a clear light red and of excellent substance. *Raphael de Smet*, certainly one of the finest, if not the finest of this year's novelties, of most vigorous and branching habit of growth, and producing an abundance of immense blooms of a fine, deep, rosy-purple shade of colour on long footstalks, and perhaps, individually, the largest of any known Begonia; this should be in every choice collection. *Charles Baltet*, a lovely variety, of open, spreading, branching habit of growth, and producing large, well-opened, deep crimson blooms closely resembling those of Van Houtte's Edmond Claus above described, but of larger size and finer substance. *Charles Boinet* is apparently quite a worthless variety.

Trophée.—This is a most strikingly beautiful and also a most curious variety of low and tufty habit of growth, with dark, glaucous foliage, and altogether much resembling in habit the Jules Janin of the same raiser. This variety produces only female flowers in a perfect state, but these are of immense size and substance, and of a most lovely and glowing shade of deep carmine, and are produced on short, stout footstalks in pairs, each pair having between them an abortive male flower without any organs whatever, and usually enveloping the bases of both female flowers somewhat in the manner of a hose-in-hose Primrose. Altogether a fine and exceedingly interesting variety, well worth cultivating.

M. Lequin, of Clamart, sent three varieties, of which *Rosea grandiflora* is a very fine variety, of compact habit of growth, and producing fine large flowers of great substance, and of a most pleasing shade of light rose-colour. *Madame Malet* and *Mdlle. E. Lequin* are both of branching and low-spreading habit of growth, with smallish blooms, which are creamy white within, and of a reddish tint outside. They are hardly distinguishable one from the other, save for some slight variations in the foliage, and are certainly of not more than second-rate merit.

M. Nodot's *Cecile Gente* is a small whitish-flowered variety, of good upright habit of growth, but of no other merit whatever.

M. Jacob-Maquoi's *Monsieur Dieudonne Massange* resembles Van Houtte's Paul Masurel, with rather smaller blooms, but has little, if any, new or fresh merit.

Messrs. Thibaut & Keteleer, of Sceaux, sent one variety named *Brilliant*, a name which it well deserves, as it is really a very fine and most striking variety, of completely upright and densely compact habit of growth, resembling a pillar, and producing all over it an abundance of fine large flowers, all of which are males, and of a most brilliant shade of scarlet. This should be in every collection, being specially adapted for a specimen plant.

M. Bertier-Rendatler, of Nancy, sent one variety, *Dr. Savourat*, of only indifferent merit, much resembling in colour Vincent's Reine de Bougival, but by no means so free-blooming.

M. J. B. A. Deleuil, of Marseilles, sent five varieties, of which *Le Phocéen* is an exceedingly beautiful one, of first-rate merit, with immense flowers, of a novel and beautiful shade of deep rose, produced with great freedom and of a vigorous and branching habit of growth. *M. Rougié Sarrete* is said to be sweet-scented by its raiser, but whether the sun in these parts was not powerful enough to develope this peculiarity, or the plant was not strong enough, I failed to perceive any perfume whatever, but may perhaps be more fortunate next year when the plant gets stronger. *Multicolor* is dull and of no merit whatever. *Danaë* unfortunately failed to grow for me at all, so its merits, whatever they may be, must be discussed among the next lot. *Misteca* seems by Nature especially tardy in starting into growth, not showing any signs of life till the end of August, and only forming a small plant too weak and late in coming to maturity to bloom this season, so must, like the last-named variety, be described among the novelties of 1879.

M. Crousse, of Nancy, sent two varieties, *Julie Chaimbault*, a deep rose-coloured variety of no special merit whatever, and *Helleboraeflora*, a low-growing, tufty-habited variety, producing an abundance of smallish flowers, the interiors of which are pure white, but the outsides have a reddish rim round the edge; a rather pretty, but hardly more than second-rate variety. It was, however, very pretty and continuous blooming when lifted into a pot for the greenhouse.

Herr Ernst Benary, of Erfurt, sent five varieties, of which *Ne Plus Ultra*, though decidedly an exceedingly distinct and fine variety, yet, I think, hardly deserves its very pretentious name. It is of erect and widely-branching habit of growth (as most accurately represented in a finely-coloured lithogram, prepared and distributed by the raiser as an advertisement of his plant); the male flowers are of very large size, and of a deep shade of scarlet. Very pendulous in habit. This variety is also said to reproduce itself absolutely true from seed. *Orange Perfection* certainly does not deserve its name. *Defiance* is a fine vigorous-growing plant, producing medium-sized flowers of a deep scarlet shade. *Floribunda rosea* is also a vigorous, tall-growing variety, producing good-sized and well-shaped blooms of a pleasing shade of deep rose colour. *Mont Rose* is a somewhat less vigorous grower, producing medium-sized blooms of a deep pink.

Messrs. Veitch, of Chelsea, sent two varieties, *Monarch* and *Queen of the Whites*, of which the former is a vigorous branching-habited grower, producing freely fine medium-sized blooms of a brilliant shade of scarlet. The latter, originally found as a chance seedling among a pot of B. rosæflora, is incontestably the purest white that has yet been sent out; it has also this curious difference from its parent, that whereas that is exceedingly shy to bloom this is a very free-blooming indeed, quite small plants producing three and four goods stems bearing three blooms each. The foliage is of the distinct round and corrugated form peculiar to rosæflora, and the flower-stems rise as in the case of B. Veitchii direct from the tuber, the plant being entirely acaulous or stemless, and only, therefore, increasable by seed or root division.

M. J. Vincent, of Bougival, sent one variety, named *Jaune Serin*, of low-growing and compact habit of growth, with hairy stems and most free-flowering nature, and producing medium-sized blooms of a clear pure canary-yellow, well deserving its name, and one of the prettiest varieties that has yet been sent out, but from its extreme floribundity it affords but very few cuttings, and will consequently be slow to increase.

Only three new double-flowered varieties flowered with me this season, all raised and sent out by M. Victor Lemoine, of Nancy, and named respectively *Marie* and *Emil Lemoine* and *Ornement*. The first-named is decidedly the largest-flowered and most fully double of any variety yet sent out, the fully-developed male blooms resembling more those of a Hollyhock with several flower facets than those of a Begonia; it will also by many be considered the most beautiful, though some will, perhaps, prefer the fine glowing scarlet of Gloire de Nancy, which it most resembles in shape. Its colour on opening is pale rose, usually with a white centre, but, as the flower developes, the white fuses into the rose colour, which assumes rather a deeper tint. It is so extremely free-blooming that the plants do not grow to a large size, but when cuttings can be obtained they root freely, so that this very fine variety should soon become plentiful, and be included in every choice collection. As in Gloire de Nancy, so with this variety; the double flowers largely preponderate in number over the female singles. Emil Lemoine resembles in habit of growth and shape of bloom the first double variety sent out by M. Lemoine, and named after himself Lemoinei, but is rather a stronger and more vigorous grower, and the colour is two or three shades a deeper red than Lemoinei; the double flowers are usually rather thin in the centre when fully developed, and compared with the exquisitely beautiful last-named variety, this can only be called at most second-rate excellence, though its fine deep colour and freedom in producing its blooms will, doubtless, find it many admirers. Ornement is a charming variety of low and tufty compact habit of growth, and producing an abundance of flowers of a clear pale rose colour, the males of which, though, for the first month or six weeks of the season after being bedded out, they are only semi-double, and occasionally drop in a bud state unopened; still, as the season advances and the plant increases in strength and vigour, they lose both these faults and become fully and most beautifully double.

M. Van Houtte, of Ghent, sent out this year his first double-flowered variety, named Charles Rogier, but though I got a couple of tubers at the commencement of the season, one did not grow at all, and the other not till too late to bloom this year. Among the five novelties to be sent out next season by this house is the first double yellow, as yet unnamed, which should be a great acquisition. *W. E. Gumbleton.*

WEATHER *v.* PROTECTION.

In most matters that people engage in, a very few failures, often a single one, goes far to neutralise a large number of successes—that is, so far as they are assessed by general estimation: but there are some exceptions to this, notably one—that is, predictions relating to the weather. This we see from the oldest to the newest Old Moore's, and from the original Murphy down to the modern Murphy of the present day. Every year, as sure as the autumn comes round, a lot of predictions crop up in the horticultural papers as to what the weather of the coming winter is to be, and there is one peculiarity about them which is somewhat remarkable, that is, the prognostications invariably point to a severe winter as imminent. I suppose the prophets are wise in coming to the conclusion that a regular biting season with the thermometer down to zero following their weather auguries is much likelier to be impressed on the memory than a dozen mild ones. And in this they are quite correct. At all events there is one merit attached to these speculations, that is, they cost nothing to those who indulge in them, and assuredly do no harm to any one else.

Yet as to forecasting the weather for any considerable time beforehand, such a changeable climate as this, where ever and anon disturbing elements are liable to upset any calculations that can be made even by the most observant, will render the predictions totally unreliable. And it may be said that the presumption of those who essay to enlighten the world on these matters is only equalled by the credulity of those who have any belief in them. Nevertheless, there is one thing undoubted, which is, that from the number of mild winters we have now had in succession we must inevitably be so much nearer a hard one, unless the views of those who maintain that the climate is changing are correct, and which I do not think meet with much credence, or have much that is reliable to support them. But looking at the matter seriously from a horticultural point of view, especially in its bearing upon decorative gardening, there never was a time since plants for growing in the open air were first introduced to this country that so much uncertainty existed as to the condition in which a really severe frost would leave a great number of gardens and pleasure grounds in the greater part of the kingdom, for in the South and Midland districts at least there has not been what may be called a really trying winter since the memorable one of 1860-61, and in the time that has intervened there has been a greater number of trees and shrubs, mostly evergreen kinds, brought into the country than in any previous corresponding period, and which from their beauty, distinct character, and free growth, have so far commended themselves to the gardening public that in more or less numbers they are to be met with in the majority of gardens, large or small. It is also well to bear in mind that most of them are from parts of the world that renders their ability to withstand the ordeal of an exceptionally severe frost to say the least doubtful.

From Japan alone, in counting up what a number of fine plants have come to us, we must take the Retinosporas, Thujopsis, Abies, and allied plants, with the number of sports and varieties obtained from seeds; to these must be added the plants of smaller shrubby growth, such as Elæagnus, Acers, Skimmias, Euonymus—the latter in its many varieties being amongst the most useful and adaptable subjects for many purposes that have ever come into general use. Even these do not embrace nearly all from the same country. There are also many others from China, California, and other parts, the inability even of a portion of which to withstand a hard winter would leave sad blanks in our gardens. In the case of such as are doubtful, that grow to a large size, it is out of the question to

think of doing much in the way of protection should the necessity of it become apparent ; but there are a great number of the very grandest decorative plants that we possess, such as the Pampas-grass (Gynerium argenteum) and its beautiful ally, Arundo conspicua, the presence of which could ill be spared in thousands of places ; and experience has shown, in many positions, that if left wholly unprotected, they are either killed outright or severely injured by such winters as we from time to time experience, but that they require no great amount of labour and material to put them out of harm's way.

And what in this respect applies to them holds good with quantities of other plants. We are aware that there is a limit to what can be done in the way of protection to outdoor plants, yet at the same time it is often a question of a very little material skilfully applied that makes the difference betwixt death and comparatively little injury. If a proportionate quantity of Furze, dried Fern, Asparagus haulm, litter, leaves, or tan are in readiness where they can be kept dry, a great deal may be done, aided by a watchful eye, so as to keep a good look-out when appearances are such as to indicate the immediate likelihood of an exceptionally low temperature, of which, as is well known by old weather-watchers, there is usually sufficient evidence, if only for a brief interval, before the pinch really comes.

In addition to the plants that are generally made safe in average localities through the kingdom by the aid of some protection, there are numbers of others that from time to time are planted out-of-doors, and which are amongst the most beautiful objects cultivated. The exceptionally mild winters that we have now had in succession have enabled such to exist, and appear to lead many to forget that the plants in question are in no way changed in nature, and to a certainty will succumb when a severe protracted frost occurs. Consequently in all cases plants of such a character, enough to satisfy for propagation or use the ensuing year should be taken up and wintered out of harm's way. With surplus stock of these it is always well to let them remain, giving the protection that may suffice to preserve them over mild winters.

It is also well in the case of newly introduced plants that come from high altitudes, even in countries where the vegetation generally is not such as to withstand our winters, to try their hardiness, especially in favoured localities—a portion with protection more or less, others with none at all. Only by this means is it possible to ascertain what will live through ordinary or severe winters, and what will not ; for there is no doubt that many plants for a time after their first introduction have been treated as tender, that have ultimately turned out not to be so, and in all probability amongst the many new-comers within recent years there may be some the frost-resisting powers of which are not yet known. *T. Baines.*

CATTLEYAS AND LÆLIAS.

NOTWITHSTANDING the thousands and tens of thousands (did not the *Gardeners' Chronicle* say millions by one importer ?) of Orchids introduced every year, the market is not yet overstocked. They bring good prices in the nursery, and even bundles of imported plants at Stevens' rooms cannot be purchased cheaper. The genus Cattleya and Lælia contain some of the grandest flowers in the whole range of Orchidaceous plants. One would almost be safe in saying that the whole vegetable kingdom in its most brilliant phases cannot match them. I have cultivated a goodly number of different species very successfully, and have not been unobservant of the plants and their requirements in the hands of others. During the last few years I have had frequent opportunities of inspecting the Cattleya-houses in the nurseries of Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, but not on any occasion have the houses been without Cattleya and Lælia blooms. "Frae November to October," as the Scottish bard puts it, the gay flowers of some members of the family are always there to welcome us. There are very few Orchids in flower at present even in the largest collections, and yet I found two species of Lælia and three of Cattleya in the large house in Messrs. Veitch's nursery ; and in our own collection at Loxford the Cattleya superba is in full beauty with a spike of Lælia autumnalis well advanced, which makes seven distinct species ; and a visit to a few more collections would further increase them.

There are still many persons who have an impression that Orchids are difficult to cultivate. I would like to remove this impression where it exists, and still further add to the list of cultivators. Cattleyas and Lælias will live and thrive when the conditions in which they are placed favour a healthy development. The cultivator must know what these conditions are, and then he must fulfil them to the best of his ability. I grow the Cattleyas in three different houses. In the cool Orchid-house with Odontoglossums, Masdevallias, &c., from the mountainous regions of New Granada and the Andes of Peru, are placed three species that should be in every collection, viz., Cattleya citrina, a distinct and singular species from Mexico, singular in its habits. It will not thrive in a pot like most of the species, nor in a basket like some others. It does best on a block or bit of Tree Fern suspended to the rafters with its head downwards. In that way only will it produce its large fragrant golden flowers, reminding one of Chrysolora Tulip. Lælia majalis is a difficult species to manage usually. I visited a place once where there was a fine collection of Orchids containing about twenty plants of this species, and the gardener told me that only once a flower-spike made an attempt to produce a flower, and failed. I bought one small plant, and it flowers annually in the cool Orchid-house, in this way. It is fastened to a block which is hung up close to the glass, and the part where this Mexican beauty hangs is not shaded. It must have plenty of sunshine even in summer. Lælia autumnalis concludes our two cool-house species. This thrives well either in a pot or basket, potted in turfy peat, with live sphagnum, and plenty of drainage. I do not allow it to have so much sun as L. majalis, but it must not be kept so closely covered as the Odontoglots. The temperature of the cool house is from 40° to 45° in winter.

In the Cattleya-house are to be found by far the largest number of species of course ; temperature in winter about 55°, falling to 50° in cold nights ; but it is not my object to write about even the best species, and I will confine the remaining remarks to a few. The most useful of all the winter-flowering species are C. Trianæ and its varieties. I grow this in pots, filling them three parts with large potsherds, and over the drainage placing some sphagnum, then the compost, which is sphagnum and fibrous peat in equal parts, with lumps of charcoal and potsherds mixed with it. All Cattleyas and Lælias grown in pots require careful handling during the operation of potting, and if the roots cling firmly to the pots it is best to break them with a hammer rather than injure the roots by turning the plants out in the usual way. If the plants are doing well there is no need to pot often—a good grower said, "once in seven years ;" this would refer to large specimens only. There are certainly more plants injured from being over-potted than there are from being allowed to become pot-bound.

The species that I saw at Messrs. Veitch's were the following :—Cattleya maxima, a very distinct and fine kind grown on a block near the glass, and which had made very healthy growth. There were five or six large flowers on a spike, the sepals and petals rosy lilac ; lip pale purple veined with crimson.

C. bicolor with many-flowered spikes ; the flowers had the sepals and petals brown, with a dash of green ; the lip of this variety is the most attractive part, it is rosy purple, edged with pale rose, and has a very pretty and distinct effect.

C. Dominiana was just going off, the colours had faded a little, but the size of the flowers is very striking — I measured and found they were over 6 inches in diameter ; the sepals and petals are pale pinky white, and the lip pale purple.

Lælia Stelzneriana is singularly pretty. The sepals and petals are pure white, with a purple lip.

Lælia præstans is a dwarf species, growing best on a block ; it is distinct and very handsome. The sepals and petals rosy purple, lip rich purple.

Cattleya exoniensis flowers in September and October, and succeeds best in the Cattleya-house. It would be a rash statement to say that this is the finest Cattleya in existence, still I do not know any that surpass it. This is a garden hybrid, raised many years ago by Mr. Dominy : there was a goodly number of plants raised from his cross, hence the flowers of the different varieties vary much in colour. The sepals and petals of some are almost white, others different shades of rose. It has the sepals and petals of C. Mossiæ, with the grand purple lip of Lælia purpurata, its reputed parents.

We now come to those autumn flowering species that are best in the warmest house. Cattleya superba is one of the most distinct and beautiful, and the blossoms last longer than any other known to me. It is difficult to cultivate. I obtained six newly imported plants of it nearly ten years ago, and potted them, as I usually do with such plants, in clean potsherds. They started to grow at once, but after they had grown so much, the young growth began to die off, and I could not get on with them either when I used peat or sphagnum, or when it was not used. Fortunately I visited a garden where the C. superba was growing and flowering freely on a bit of Tree Fern, suspended from the glass roof of an ordinary stove : by this time my Cattleyas were reduced to two. I then transferred them to a stump of Tree Fern, and they started at once to grow vigorously, and do not fail to produce annually their rosy crimson flowers. C. gigas I find does best in the same temperature. It flowers every year with me, and I have not seen it do so well when kept in the Cattleya-house. It certainly succeeds best when treated similarly to C. superba ; the roots push into the Tree Fern, and clasp firmly round it. This is a splendid Cattleya, and quite distinct.

Lælia anceps succeeds best with me in the warmest house. It will be in flower in a week or two. This is also a very distinct and beautful species. L. anceps Barkerii is much superior to the species, and is rather common. L. Dawsoni is very rare ; large specimens are seldom to be met with, and when exposed for sale fetch high prices. I saw a specimen a year or two ago, with only one strong leading growth, sold for forty guineas. There are several fine varieties to be found amongst imported plants, and all of them are worthy of culture. I find it succeeds best in a pot, grown in the same way as I have described for C. Trianæ. *J. Douglas.* [The publication of this note has been delayed. EDS.]

ROSES OF THE FUTURE.

THE intelligent follower of any pursuit will not confine his views to its past or present stages, but will extend his consideration to the future. This holds true of every art or science which has either added to the pleasures or increased the social and material welfare of mankind. Indeed, it is this spirit of "forecast" which is the parent of experiment to which discoveries are generally due, though sometimes accident has proved a not unimportant factor in the production of such results. To both these elements, in a greater or less degree, the race of modern Roses owe their origin and improvement. This is particularly illustrated by the discovery of the great class of hybrid perpetuals, which, if originally owing to systematic experiment, has derived many of its most remarkable illustrations by mere chance ; that is to say, that Nature rather than art has been the artificer in bringing them to light. There is a limit, however, to the operations of both, and it has become a serious consideration with thoughtful rosarians whether the limit of development has not been arrived at, so far, at least as the popular section of H.P.'s is concerned. Notwithstanding the undeniable improvement that has taken place in this class of Roses, it has been evident for some time past that decided originality appears to have become an unattainable quality. The close similarity of introductions' season after season to varieties already in existence cannot fail to have forced itself upon the notice of experienced cultivators. The most trifling modifications in form and colour have been held sufficient to constitute a title to a new Rose. Seedlings little differing from their parents have been granted a place until it would be quite possible to "lot up" the great number of varieties enumerated in modern catalogues under a few typical heads, the individuals of which when grown in numbers are so nearly alike in their flowers that it is scarcely possible to distinguish one from another. The question then arises, Are we—like arguing in a circle—to continue this vicious system of reproduction of differences without distinctions merely on the chance of that rare event, an accidental departure from existing types? If not, what course is it desirable to pursue with the object of originating novel lines ? The most rational method would seem to be a return to that practice which gave us the hybrid perpetuals

themselves, viz., that of experimenting in new and untried crosses, bringing into use for such experiments subjects of cognate origin, though of apparently distinct characteristics.

In the meantime it might afford some little check to the multiplication of so many similarities if those to whom the authority of certificating new Roses were to exercise greater stringency in rejecting new introductions, however attractive, unless indisputably distinct from any others known; and if also a similar rigid verdict were passed upon all sent here from abroad. It may be admitted that this Draconian severity might be difficult to practise by the censors: certainly such self-denial could scarcely be expected from the generality of raisers themselves. For instance, one of them succeeds in originating, say, a fine Rose. He has the opportunity of pushing it into circulation—even of getting it certificated. Nevertheless, in spite of its quality, it so nearly resembles some other in existence as to be really superfluous; but it represents money if the public can be induced to buy it, and so another variety is added to the already overburdened catalogues. These considerations strengthen our view that the true method of obtaining entirely new classes of Roses is that first advanced of beginning *de novo*. We shall never get what we desire on the present system. We want yellow perpetual blooms, white, green, and especially *blue*—in fact all the colours of the rainbow. How to obtain some of them will form speculations for further papers.

(To be continued.)

PLANT PORTRAITS.

ACTINOMERIS SQUARROSA, Nutt.; Meehan, *Native Flowers of United States*, t. 39.—A square-stemmed Composite with winged stems, decurrent, broadly lanceolate, coarsely toothed leaves, and loose terminal panicles of yellow flower-heads.

ALBUCA JUNCIFOLIA, Baker, *Botanical Magazine*, t. 6395 (Liliaceæ).—The plant described in our columns in 1876, vol. i., p. 534. Hort. Kew.

APPLES.—The following varieties are admirably pourtrayed in chromolithography in the first part of the *Herefordshire Pomona* (Hardwicke & Bogue):—t. 1, Foxwhelp; t. 2, Pomeroy, Winter Pomeroy; t. 3, Joanneting, Summer Golden Pippin, Court of Wick, Devonshire Quarrenden, Borsdörffer, Worcester Pearmain, Kerry Pippin, Early Spice; t. 5, New Northern Greening, Spring Grove Codlin, Stirling Castle, Wormsley Pippin; t. 6, Keswick Codlin, Manx Codlin, Lord Suffield, Hawthornden, and Tom Putt.

AMARYLLIS SOLANDRIFLORA, Lindl., VAR. CONSPICUA, *Gartenflora*, t. 949 (Amaryllidaceæ).—A species with very long trumpet-shaped flowers of a whitish colour, the lobes of the limb flushed and striped with red.

ANEMONE CAROLINIANA, Walter; Meehan, *Fl. U. S.* (Ranunculaceæ).—A charming species, with palmately lobed or dissected leaves, and blue or whitish flowers, in the way of A. apennina.

ASPLENIUM TRICHOMANES, Meehan, *Fl. U. S.* (Filices).—Our British plant, equally at home in the United States.

AURICULA FRANK SIMONITE, *Florist*, October, 1878.—Paste broad, brilliant, circular, purest white; body colour rich violet blue, edge pure white, tube pale yellow, form good, free blooming habit. A seedling raised by Mr. Simonite.

BEGONIAS, DOUBLE-FLOWERING TUBEROUS VARIETIES, *Revue de l'Horticulture Belge*—Six varieties are figured, but their names are not given.

CALOCHORTUS LUTEUS, Douglas; Meehan, *Fl. U. S.*, t. 35 (Liliaceæ).—Leaves linear-lanceolate, shorter than the peduncle, sepals oblong, shorter than the broad, wedge-shaped yellow petals, which form a cup-shaped flower.

CAMPANULA MACROSTYLA, Boiss.; *Botanical Magazine*, t. 6394 (Campanulaceæ).—A loose habited strigose annual, 1—2 feet high; leaves sessile lanceolate; flowers solitary, stalked, 2—2½ inches diam., calyx with broad ovate appendages; corolla turbinate campanulate, blue, lobes triangular, stigma very large, spindle-shaped. Southern Asia Minor. Hort. Kew.

CENTAUREA FENZLII, Reichart, *Botanical Magazine*, t. 6392 (Compositæ).—Described as the noblest Centaury yet introduced. The plant is covered with greyish hairs. Leaves 18 inches long, oblong ovate, upper sessile; flower-heads numerous, large; scales toothed; florets yellow. Native of Southern Armenia. Hort. Ware.

CHRYSOPSIS MARIANA, Nuttall; Meehan, *Nat. Fl. U. S.*, t. 47.—A yellow-flowered Asteraceous Composite, 1—2 feet high, with pilose stems and sessile lanceolate-acute leaves.

CLAYTONIA VIRGINICA, L.; Meehan, *Nat. Fl. U. S.*, t. 40 (Portulacaceæ).—Stock tuberous, leaves linear-lanceolate, glabrous, flowers pink.

CLEOME PUNGENS, Willd.; Meehan, *Nat. Fl. U. S.*, t. 38 (Capparidiceæ).—Clammy, pubescent, with palmate leaves, segments oblanceolate. Flowers axillary, at the end of the stem, pink, with stalked recurved petals and very long slender stamens, giving the flower the appearance of an insect with long antennæ.

CORYDALIS KOLPAKOWSKIANA, Regel, *Gartenflora*, t. 948 (Fumariaceæ).—A Turkestan species, with bulbous rootstock, glabrous, deeply divided flowers have red tubes, about 1 inch long, the petals are also red.

GERARDIA PEDICULARIA, L.; Meehan, *Nat. Fl. U. S.*, t. 34.—A supposed parasitical plant, with incised leaves and large irregularly tubular 5-lobed yellow flowers.

IRIS VERSICOLOR, Linn.; Meehan, *Nat. Fl. U. S.*, t. 48.—A slender species with thin creeping stock, narrow linear leaves, and violet flowers with narrow segments.

JUGLANS AILANTHIFOLIA, *Revue Horticole*, 1878, p. 414, fig. 86.

PACHYSTIGMA CANBYI, Gray; Meehan, *Nat. Fl. U. S.*, t. 44.—A very curious creeping stemmed Celastraceous evergreen under-shrub, with sessile opposite obovate lanceolate slightly serrated leaves. "To cultivators the plant will prove acceptable as an evergreen dwarf bush." The plant has an interesting history.

PANDANUS CARICOSUS, Rumph., *Revue Horticole*, 1878, p. 405, fig. 84.

PEAR, THE PEACH, *Florist*, October, 1878.—A

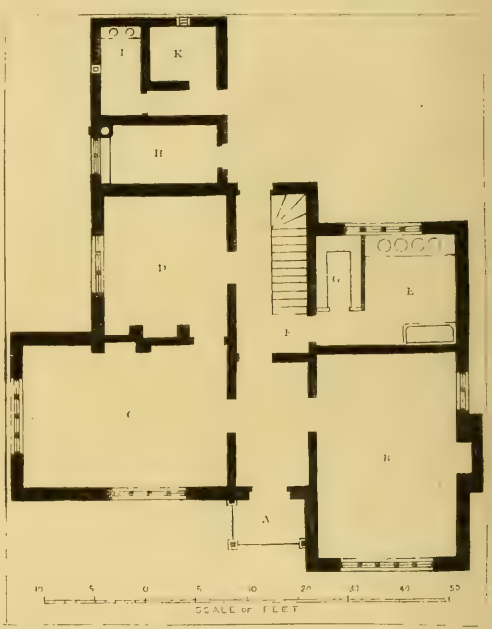


FIG. 121.—YOUNG GARDENERS' RESIDENCE AT TRENTHAM: PLAN OF GROUND-FLOOR. (SEE P. 721.)

leaves, bracts as long as the pedicels, and long spurred pink flowers.

DAMSONS, *Florist*, t. 479.—1, English; 2, Shropshire; 3, American.

DIANTHUS CHINENSIS, *Floral Magazine*, t. 330 (Caryophyllaceæ).—Three fine double varieties from Chiswick.

ERYTHRÆA VENUSTA, Gray, *Botanical Magazine*, t. 6396 (Gentianaceæ).—Glabrous annual, 6—10 inches; leaves opposite, lanceolate entire; flowers 1 inch diam., pink, in terminal corymbs. California. Hort. Kew.

EURYGANIA OVATA, Hook. fil., in *Botanical Magazine*, t. 6393 (Ericaceæ).—Evergreen shrub, with pendent branches. Leaves ovate acute, serrulate, 1—1½ inch; flowers panicled; calyx deep red; corolla urn-shaped, red, mouth whitish. Nearly allied to Thibaudia. Native of Andes of Peru. Hort. Veitch.

FUCHSIA JOHN SISLEY, *Revue Horticole*, 1878, p. 410.—A winter-flowering variety, raised by M. Lemoine from × F. Dominyana, crossed by F. serratifolia. × F. Dominyana is itself a cross between F. spectabilis and F. serratifolia. The habit is robust, the good early dessert Pear, of medium size, pyriform shape, oblique at the base, stalk short, eye shallow, skin greenish yellow, russeted. Flesh yellowish, not melting, but sweet and agreeable. September.

PEARS.—The following varieties are figured in the first part of the *Herefordshire Pomona*:—t. 4, Monarch, Althorpe Crassane.

PHAIUS DODGSONI, *Floral Magazine*, t. 329 (Orchidaceæ).—Flowers in racemes, white, with a yellow fimbriate lip, with orange-coloured ridges.

PHLOX REPTANS, Michaux; Meehan, *Nat. Fl. U. S.*, t. 46 (Polemoniaceæ).—Stem pilose, erect, with creeping runners; leaves lanceolate or oblong-lanceolate, flowers in terminal umbels, pink or purplish red. It is the P. stolonifera of the *Botanical Magazine*.

POGONIA OPHIOGLOSSOIDES, Nutt.; Meehan, *Nat. Fl. U. S.*, t. 37.—An Orchid, with a root of thick creeping fibres; stem erect, with 1—2 ovate-lanceolate leaves, and pink flowers an inch in diameter; lip spatulate, crested and fringed.

RIBES ALPINUM PUMILUM AUREUM, *Revue de l'Horticulture Belge*.—A golden-leaved variety of Ribes alpinum, which, to judge from the figure, must be a fine dwarf shrub with rich yellow leaves, which

are stated to lose their yellow colour as they grow old.

Rosa carolinIana, L.; Meehan, *Nat. Fl. U. S.*—Glabrous, with few and scattered prickled leaflets, lanceolate, flowers pink, fruits pilose-turbinate, red, glandular.

Rose Charles Darwin, *Florist*, t. 478.—One of Mr. Laxton's seedlings, distributed by Messrs. Paul & Son, of Cheshunt. It is a H.P. of deep maroon colour, globular-shaped, with recurved petals. The foliage is bold and handsome.

Rose Jules Chretien, J. Schwartz, *Journal des Roses*, November, 1878.—H.P., dark green foliage, stout conical spines; flowers large, open, crimson.

Rose Maria-Henrietta, Tea. A cross between the climbing Tea Rose Madame Bérard and the hybrid perpetual Général Jacqueminot, raised by M. Levet, of Lyons. It is spoken of as a red Gloire de Dijon.

Spiranthes cernua, Richard; Meehan, *Nat. Fl. U. S.*, t. 45.—The American representative of our common Ladies' Tresses.

Torenia Baillonl, *Floral Magazine*, t. 331 (Acanthaceæ).—Habit of T. asiatica, but with yellow flowers, with the throat and tube of a rich purplish brown. Native of Cochin China. Shown by Messrs. Veitch.

Verbena Bessie, *Floral Magazine*, t. 332 (Verbenaceæ).—A fine bedding Verbena, with purplish rose or magenta flowers. Raised by Mr. Hooper Taylor, of Bath.

Viola sagittata, Ait.; Meehan, *Native Fl. of U. S.*, t. 33.

THE YOUNG GARDENERS' LODGE AT TRENTHAM.

The accompanying figures give a representation of the residence erected for the accommodation of the young gardeners employed at Trentham. Like the residence of the head gardener, of which we gave an illustration at p. 701, 1872, it is a very good example of its class, and we commend them both to the consideration of those ladies and gentlemen whose garden servants are not housed with due regard to comfort and health. A residence of this kind, it will be evident, will be rather an ornament than a dissight, and there will consequently be no good reason for thrusting it into a backyard, or fitting up any available back sheds instead. With all due deference for personal rights, we would urge upon the employers of labour that it is their moral duty to those employed by them, especially those engaged more immediately in what may be called the domestic department, to take care that they are lodged in a manner which is not only conducive to health, but also to the development of those higher faculties to which the superior educational facilities of the present day are intended to give a further impetus, and which, though they reached a high development in many cases in the "bothy" of the olden times, are nevertheless such tenderlings as it is not altogether wise to leave to struggle on under such uncongenial conditions.

The elevation (fig. 122) shows the ornate character of the building, which is erected on rising ground where there is a good circulation of air. So far as the site is concerned it is therefore very happily placed, and we believe the internal arrangements are equally well planned. The disposition of the ground floor will be seen from the accompanying plan (fig. 121). The front entrance is by a porch, A, leading into a short lobby or passage, in which are doors leading to the two principal rooms. That on the right is the reading-room and library, B, and is about 28 feet by 14 feet, provided with a substantial table and well-filled book-case, &c., and well lighted. This room is of course intended for study and intellectual improvement. The room on the left hand is the dining-room, C, which is also provided with the requisite accommodation. There is a large and convenient kitchen at D, where the services of a garden woman as cook are brought into daily requisition, and a lavatory at E, which is fitted with a series of wash-basins and a bath. Near this is the pantry G, and between the lavatory and kitchen the passage is continued to the back entrance. In this passage is the staircase, F, leading up to the dormitories or sleeping-rooms, in each of which are three or four beds, each being shut off from its neighbours by a partition, and thus rendered private. Outside the back entrance is a wash-house and lamp-room, H—a place for dirty work, and close by a coal-house, I, and water-closet, K. The fittings are all of a neat and substantial character, and the accommodation generally quite adapted to secure the comfort of the inmates, some eleven or twelve in number.

Where a number of young men are thus lodged together there are of course certain general rules with which, as a matter of discipline, all the inmates have to comply. If Mr. Stevens would kindly say what these are, the information would, there can be little doubt, be useful in other cases.



Fig. 122.—The young gardeners' lodge at trentham.

Florists' Flowers.

AURICULAS.—In a catalogue issued by Mr. Henry Groom, florist, of Walworth, about 1840 (one of several old catalogues full of interest that forms a most valuable portion of my gardening library), I find catalogued eighty-five varieties of Auriculas, some few of which may yet be found offered for sale, but many of which have no doubt been lost to cultivation. The prices of some of the leading varieties were then very high, as a few examples will show. Booth's Freedom, Leigh's Colonel Taylor, and Waterhouse's Conqueror of Europe stand at 30*s.* each; and good plants of the two first named would fetch that price now. The following are catalogued at a guinea each: —Hedge's Britannia and Faulkners' Ne Plus Ultra. Eaton's Lord Grey, Laurie's Glory, Page's Champion, Page's Waterloo, and Thompson's Bangup are priced at 15*s.* each; and the following at half-a-guinea: —Commerce, Oliver's Lovely Ann, Schole's Generalissimo, Sykes' Complete, Wood's Delight, and Wrigley's Northern Hero. Then follows a whole lot at 7*s.* 6*d.*, including Campbell's Robert Burns and Campbell's Venus, Page's Lord Hill, Pollett's Standard, Smith's Britannia, &c. This catalogue is additionally valuable as the raiser's name is given to each variety, with but one exception; but it is deficient in this—that the varieties are not grouped in their sections of green, grey, and white edges, and selfs, as is customary now. A raiser named Burch is credited with not less than eleven varieties; not one of which in all probabilty is to be found in cultivation. Of the eighty-five varieties catalogued by Mr. Groom, I have sixteen, and as some of these old flowers are but little grown, I am looking forward to their flowering with great interest as enabling me to institute comparisons between them and the newer varieties.

This catalogue also includes a "Few Select Plants;" among them appears Clematis azurea grandiflora, 10*s.* 6*d.*; C. Sieboldii, 10*s.* 6*d.*; Lilium lancifolium album, 42*s.*; L. lancifolium punctatum, 63*s.*; Rondeletia speciosa, 21*s.*; and Stephanotis floribunda, 15*s.* There is a vast deal to be learnt from old catalogues and old advertisements, and they who make a practice of preserving them will find them grow in value as time moves onward. *R. D.*

The Villa Garden.

STICKY AND WET SOILS.—"What can I do with my miserable cold, wet, clayey soil?" said a Villa gardener, in great distress, a few days ago. Alas! it was the old oft-repeated tale. The plot of ground on which the residence was built had been, as is commonly the case, robbed of everything out of which a garden that would grow plants could be made; turf, loam, gravel—all had been removed, and its place supplied with the yellow clay dug out in sinking the foundations of the house, with just a covering of something like garden soil above, put on for appearance sake. The clay was for ever coming upwards, and the wet summer had made the surface sour, and it was in a bad state. If plants were put in it the slugs and worms ate them or rooted them up. What could we advise him to do but to renew the soil—to cart away the clay, taking it out to the depth of 2 feet or so, and put in its place some good sweet loam, with some mortar rubbish mixed in with it? Drain he could not, but we recommended 6 inches of brick rubble at the bottom of the opened trench, with some trimmings of a Laurel hedge laid over the *débris* before the soil was put in, or some thin strips of turf with the grass downwards. When this has been done the fresh soil is to be added, and some leaf or vegetable mould scattered over the surface and gently forked in. In this way a garden can be renovated, and there are hundreds of Villa forecourt gardens that sadly need renewing in this manner.

There are some loams, so called, that are scarcely better than clay; they run together when rain comes, and become sticky and adhesive, and that is why some mortar rubbish is recommended; it keeps the loam open, and many plants—most plants, in fact—like some grit about their roots.

There are some plants that will do well in a clayey soil. The Aucuba japonica does well in it; so does the pretty autumn-flowering Veronica salicifolia; and a foreground of this to the Aucubas, with the purple, white, and pink Anemone japonica dotted among them, makes a pretty picture. As a foreground, Pyrethrum aureum, Arabis albida, Iberis corifolia, and Myosotis sylvatica, can be used, and other things will stand also, but the foregoing are sufficient to make the bed or border look furnished, and give it a cheery appearance.

As to the matter of edging to beds, on the north and shaded side of a Villa residence grass is out of the question, unless it can be kept trimmed twice or thrice a week; but in such a position it is not easy to get a good bottom. Our forecourt garden is due north, and only a little sunshine falls on it during the long days of summer, and grass does badly, because shrubs are around it, with the dwelling overshadowing it all. We are now trying Sedum lydium as an edging, and think we shall succeed with it better than with anything else. Worms are very troublesome in such a spot, and they cast up the little tufts of Sedum as if they thoroughly enjoyed it. It is difficult to circumvent their nefarious designs; they work in season and out of season, and appear to have small concern in regard to devices to slaughter them.

FURNISHING A COLD GREENHOUSE IN WINTER AND EARLY SPRING.—This is just now a matter of importance to many Villa gardeners. It is not that they are in immediate want of flowering plants, for are not the Chrysanthemums yet gay, though the dull sunless weather is telling on them? With a little care many of the flowers will last on to Christmas, and a few berried Solanums greatly assists the homely display. But after these what is to come? That is the point. Well, Violets, and especially the double varieties, can be made useful, if lifted from the open ground and put into pots, and placed in the cold frame for a time till the flowers appear, covering them from frost when it threatens. When these plants are recommended to be put into a cold frame it must not be supposed that the lights are to be shut down and kept close, and no air admitted; this would be a mistake, as the flowers would suffer from damp and rot. The best thing to do would be to stand the plants of Violets on inverted flower-pots, so as to bring them as near to the glass as possible, which position would assist their flowering, and lessen the chances of harm from damp. The blue King of Violets, the white Queen of Violets, the pretty reddish coloured Rubra plena, and the white-eyed lilac Marie Louise, are the best for the purpose. Then there are Christmas Roses; and here it may be remarked that there are what may be denominated strains of these—some that both bloom earlier and more freely than others. In the open ground, buds of a good strain are fast ripening, so that the flower stems might come forth. How good and compassionate Nature is to give us pleasant hardy flowers that bloom at Christmas, when the vegetable kingdom pauses in its career of progress, and waits as one who waiteth the passing of a great crisis. The roots should be lifted at once, before frost comes, and

> "Before the mute snow covers all
> The tired land as with a pall,"

and potted; but little potting soil is really wanted, as the balls of earth adhering to the plants should be large enough to just fill the pots, and then only a little good soil is required. A few pots of Christmas Roses put on a warm shelf in a greenhouse will soon get into bloom, and produce charming white flowers.

The foresight that induced the Villa gardener, a few months ago, to pot up some Roman Hyacinths, and Polyanthus Narcissi, &c., as well as a few Tulips, Crocuses, and ordinary Hyacinths, and put them away under some tan or cocoa-fibre, as recommended in September last, will now be bearing good fruit in that some will be making an upward growth. In these we shall get something to follow on after the Christmas Roses. The Villa gardener should put in a few imported clumps of Lily of the Valley and Astilbe (Hoteia) japonica, putting them into pots, and, where it can be done, burying them in dung and leaves, to get them to grow as quickly as possible. These, in their turn, will follow on after the bulbs, and yield fair flowers quite on into the spring.

This is as an old tale, but it needs to be repeated. We want people with small gardens, and only spare conveniences by which to grow plants, to get all the enjoyment out of their gardens they can; and in order to have this to an approximately perfect degree it is necessary to enforce simple teachings by every variety of illustration. The garden should not be regarded as a locked-up possession during the winter months, but as open every day in the year; and the gardener who gets most enjoyment and pleasure out of it is the one that best utilises his or her opportunities.

YOUNG CARROTS IN AUTUMN.—Many Villa gardeners might grow and enjoy these in common with the owners of larger gardens. We were in a kitchen garden a few days ago, where we saw quite a large bed of pretty little Carrots ready to pull, and from which the gardener was getting nice dishes almost daily. The sort was one of the most delicious Carrots grown—the Early French Horn. Of this the seed is sown at the end of July or early in August for a late crop. The bed was however small, and a small plot of ground would supply a goodly number of dishes. But the ground should be warm, light, and rich—warm in the sense of being in a genial sunny spot; then the Carrots come quickly from seed, and the light rich ground, moistened by showers, causes the Carrots to swell fast. The faster they swell the more succulent, tender, and delicious they are. Gardeners generally sow their seed in lines or drills, and by sowing thinly and pulling out the forwardest as soon as ready for table the crop gets nicely thinned. There is, therefore, no reason why Villa gardeners should not grow a bed of sweet autumn Carrots.

Garden Operations.

FLOWER GARDEN, ETC.

The present is an excellent time for carrying out any contemplated alterations in lawns and pleasure-grounds where much groundwork is implied, and as long as the weather continues mild such alterations may be finished off by laying down the necessary turf; but if frosty, the groundwork may be carried on to completion, and the turfing left until the advent of milder weather, always taking care not to have too many turves cut at once; indeed, it is very good economy not to cut more in one day than can be laid down therein, as when once they become frosted through they become rotten, discoloured, and soft, and when laid down are very unsightly for some time, and especially liable to further injury from severe weather. If these alterations include any amount of replanting shrubs and trees, or the formation of new plantations, the formation and distribution of the groundwork should be thoroughly determined upon beforehand, and, if possible, brought to a completion before any planting takes place on a large scale. I may say that this is imperative, because the planter has not only to consider the present effect, which is so desirable in all new plantations for ornament, but also the effect which it is desired the plantation shall have in future years. With the numerous materials at command we can of course produce very beautiful effects in the way of contrast of foliage, &c., at once, but it can only be attained by planting closely, and in a very few years the increase of growth under tolerably favourable conditions of soil and climate will render the removal of at least one-half a matter of necessity, and in the course of years still more, so that the great object to be kept in view in the first stages of planting (as I before observed) is the probable effect which the permanent occupants will have in future years; and to further this end it is desirable that we should select the best specimen plants (not too large) of those varieties which we have been taught by experience are best calculated to produce in their future development the pleasing contrast of colour, outline, and foliage, which in combination with their position form the elements of a pleasing effect not only upon the eye, but through it upon the mind. The subject is too intricate, and involves too many practical considerations to be enlarged upon in a Calendarial article, so that the taste of the planter will be his principal guide, and his success in the future will be in accordance with the attention bestowed upon the practical experience which is available in the present day to all who study and feel an interest in ornamental planting. This knowledge teaches us to plant our specimen plants at such distances as may be requisite for their perfect development in after years. The matter should be well studied and the positions of each specimen perfectly arranged and the whole planted first, and then, and not till then, the intervals may be planted in any manner most conducive to a pleasing variety and contrast of foliage for present effect. The after regulation of these beautiful but temporary occupants will afford much recreation to gentlemen who take an interest in such matters for several years, because no tree or shrub, however beautiful, should be allowed to interfere with the perfect development of the permanent trees which are intended to produce the design contemplated in the first planting. I should here premise that in making these remarks on planting I am only alluding to the planting of the adjuncts of the flower garden, that is, shrubbery borders and boundaries to the dressed

grounds, for which there are now so many beautiful shrubs and comparatively low-growing trees that there is no necessity for encroaching on the more extended area of the arboretum, or touching those tall-growing trees which are much better adapted for grouping in park scenery, or growing for timber. Still many of them are so elegant and beautiful in a young state that the temptation to use them in ornamental borders and boundaries is very great, and they may be, and in fact are, so used to a great extent, but in most cases the growth is so rapid that the time soon comes that they must either be destroyed, or removed to such sites as will afford room for full development, so that their size and beauty can be duly appreciated. On the garden side of any mansion of any extent a freedom from large timber trees, particularly deciduous ones, is most desirable, for they not only give a dwarfed appearance to the grounds but where they prevail to any extent they interfere very much with the perfect keeping of the flower gardens proper near the house, and their presence should be confined to the outskirts of the clumps and borders of evergreen and deciduous low-growing shrubs and trees, which form the natural and complete edgings to the flower garden and dressed grounds. After the very dull and sluggish atmosphere which has of late prevailed to such an extent store plants for bedding purposes will require constant attention in removing all decaying foliage and mouldy tips, at the same time turning on a little heat to dry up damp and assist ventilation. *John Cox, Redleaf.*

FRUIT HOUSES.

Peaches and Nectarines.—When the buds in the earliest house show signs of swelling, sufficient gentle firing may be indulged in to admit of a free circulation of air by day and night if the weather continues mild; but no addition must be made to the general range of temperature until the blossoms become more prominent, when a few degrees may be added to the maximum on bright days. Old trees that have been forced for a number of years will stand more heat than young ones of recent introduction; but in our dark uncertain climate I have always found it best to err on the safe side, particularly through the early stages, and to make up for any apparently lost time when the fruit has passed the stoning process. A great deal also depends upon the state and position of the roots; if inside, as the roots of all early Peaches ought to be, and near the surface, revelling in good healthy calcareous loam, forcing may be carried on faster and with less risk than when they are outside, and although carefully protected by means of shutters and fermenting materials, necessarily liable to checks from sudden depressions of temperature. The regular syringing of the trees, walls, and paths must have daily attention, but it must be borne in mind that the young wood should not be kept constantly wet, and the last syringing should be performed in time for it to get dry before darkness sets in. Examine fermenting leaves on inside borders, and keep it frequently turned for the twofold purpose of obtaining atmospheric moisture and to prevent injury by becoming too hot where in close contact with the surface feeders. Follow up the pruning of late houses, and get successions tied in. The fan system of training is the best for Peaches and other trees trained under glass. Lay in the wood sufficiently thin to admit of the full development of the foliage; leave it the full length where the space is unlimited, and make provision for a good supply of young growths by the removal of all gross watery shoots and shortening back near the base of the tree. *W. C.*

Figs.—Examine the fermenting leaves that have been placed loosely about the pots, and if the heat does not exceed 80° they may be pressed down firmly, and a few more brought in from the reserve heap, which should be protected from heavy falls of rain and snow, in order that they may always be moderately dry and warm when wanted for use. In some places, where the pot trees are not over large, it is usual to place them on the top of a bed of fermenting material; but when they attain a large size and require pots 18 to 20 inches in diameter—the most desirable size, as we never hear of the destruction of pot Figs on account of their getting too old—they should be supported on pedestals of dry bricks or inverted pots resting firmly on the bottom of the pit. The trees then retain their position, and the necessary turnings and additions can be made without upsetting the original arrangement. Up to the present time the fine weather, with a fair amount of sunshine, has been favourable to early forcing, and aided by the heat given off by the bed the maximum temperature given in my last paper has been kept up almost without fire-heat; it is not, however, advisable to dispense with it altogether, as a gentle warming of the pipes produces a general movement of the atmosphere while it prevents condensation and produces conditions favourable to more frequent syringing and damping of the trees and walls of the houses. If not already finished, lose no time in getting the succession house ready for shutting up, and follow up pruning, or rather thinning in the later houses, by taking out the old shoots that have reached the extremity of the trellis. Cut back spurs that have been stopped, and spare no pains in clearing the wood of every vestige of scale by repeated washings with strong soap-water, to which turpentine to the extent of half a wineglassful to 2 gallons may be added. Use a soft brush for the young wood, as the slightest injury to the embryo buds may disfigure, if it does not destroy, the most forward Figs. Tie in and train on the fan system, leave plenty of room for the extension of the new growths, and always bear in mind that Figs having abundance of leaf space always produce the best coloured and finest flavoured fruit. *W. C.*

Orchard-house.—A discussion was raised some years ago on the subject of top-dressing fruit trees in pots, and I think the late Mr. Rivers, of Sawbridgeworth, defined top-dressing as being distinct from surface-dressing. I have tried the culture of pot-trees in nearly all the ways that have been recommended, and some that have not been heard of, and certainly the system that Mr. Rivers first propounded has stood the test of time, proving that his teaching had previously been confirmed by practice. We have recently top-dressed all the trees that had borne fruit and were not potted in September. The plan pursued was to carefully pick out as much effete soil as possible without injuring the roots more than was absolutely necessary in the process. All round close to the sides of the pots there are a mass of roots, and it is necessary to destroy all the fibrous portion of these to half the depth of the soil in the pots—roots and soil come out together; then with a sharp-pointed prong of iron, work a considerable portion of the soil from amongst the surface-roots. When this is done the compost for top-dressing should be worked in amongst them, and should then be pressed in firmly with a wooden rammer. The best top-dressing compost is clayey loam, to two barrow-loads of which add one of rotten stable manure. The only danger to be feared is the difficulty of ascertaining when the trees are dry enough at the roots to require water; the new soil on the top contains few active roots at first, and the manure holds water like a sponge. The bottom soil, being full of roots, becomes dry when the top is wet, and a young beginner is often deceived. A little care and attention to the trees will soon overcome this difficulty. I still urge the importance of getting the young "maiden" trees potted for succession as soon as possible. Some persons advise planting in the open ground, and potting the trees when they are two years old. This I do not approve of. It is by far the best plan to pot the young trees at once. Now is the time to have all insect pests destroyed. Labels, too, should be seen to, and new ones must be placed where the old are worn out. I prefer to have pointed labels inserted in the soil to hanging them on the trees suspended with wires. The forcing-house for early fruits must be started very gently, and a moist atmosphere should be kept up by evaporation. The trees may be syringed very gently on the mornings of fine days. It is absolutely necessary that the roots should be kept in a moist state to the bottom of the border or pots. *J. Douglas.*

Orange-house.—Those intending to cultivate Oranges for dessert should visit the nursery and see the plants before they purchase them. Orange trees are very liable to be attacked by insect pests, scale especially, and the demand for plants is not sufficient to cause much care to be taken of them. I prefer young trees, and they should be clean and well furnished with leaves. The trees should also be potted into good loam, with a little manure added to it. They are usually sent home in black peaty-looking stuff, in which they may grow, but they will not produce good fruit. In good turfy loam with a fourth part of rotten manure, Orange trees will grow almost as freely as strong Willows by the water brooks, if they are placed in a high temperature with plenty of moisture in the atmosphere. If there are any trees on which the fruit is quite ripe, they may be placed in a Fine-house where the plants are at rest, the temperature would be about 55° at night and the air dryish. *J. Douglas.*

Strawberries in Pots.—Those that were started from the beginning to the middle of the last month will be moving slowly, although it will be some time to come before any appreciable progress is observable. The walls and paths of houses in which these plants are being forced will require to be kept regularly syringed in bright weather, having the hot-water pipes heated to a gentle warmth at the same time. A good principle to observe in all early forcing is to get the maximum day temperature up to the highest point at twelve noon, and let it fall steadily and proportionately as light decreases. Sun-heat will of course be taken advantage of whenever the opportunity presents itself. At the turn of the year the majority of people who force Strawberries at all will be making a start in earnest, and in anticipation of such seasonable preparations I would direct attention to a practice which is frequently the cause of much disappointment, and which cannot be too severely condemned, viz., that of starting the plants on beds of fermenting material. If the plants have been properly grown as directed in previous papers they will be well supplied with healthy, lively roots, capable and ready to sustain every functional demand that is made upon them consistent with the order of Nature. If on the other hand they are plunged, or even laid on the surface of a bed of dung and leaves, the elaborated sap stored up in the plant finds an outlet for itself in the shape of premature leaf-growth, for it were idle to contend that there is any natural demand for increased root-action in the comparatively inactive state of the fruit-producing organs. Bottom heat is only beneficial in the case of plants that have lost their roots, and such material cannot be recommended for early forcing. *W. Hinds, Otterspool.*

PLANT HOUSES.

Orchids.—The treatment now to be recommended and given to these plants is one that will have more regard to the individual specimens than to the requirements of the collection taken in the aggregate. While for convenience sake we use the name of the different divisions when speaking of separate classes of plants, there are so many representatives from various localities and native habitats, that the condition or state of growth of one will ever be found to be much in advance or in arrear of the state of many others, though we may have to be growing them in the same house. Turning now to the East Indian plants, such as Vandas, Aerides, and Saccolabiums, these for the most part will have ceased active growth, though a slow movement may yet be perceived by watching the young leaves. This resting period gradually drawing near must be induced or permitted, for much depends on a good and regular rest. Having this object in view, gradually lessen the quantity of water supplied to the roots, so that the moss may become much more dry than has been the case during the growing season. As the roots close, their green points gradually diminishing until the whole has become compact and white to the tip, a certain index will be at hand which will indicate the amount of water required; for if the roots do not show an active state, it is not wise to give heavy waterings, let the season be when it will. When, however, the roots get to work again, water must be freely given, always bearing in mind that thorough drainage is essential to all, and that a knowledge of the manner in which any plant is drained and potted will be of very great assistance in determining as to the condition in which the soil should be kept. Some of those just mentioned are very apt during the winter time to lose many of their lower leaves; often when severe frosts are being contended with, such a state of things will happen to the great annoyance of the grower and disfigurement of the plants. As a caution, let me note that keeping a high night temperature during the next three months is perhaps the most injudicious course that could possibly be adopted, and one that would be certain to bring disappointment and loss to those who try it for a season. Far better will it be to endeavour to retain all that has been acquired during the previous season, and so to mature and consolidate the same that the coming dull months may have a less injurious effect upon the plants than if they were now kept in a growing and excited condition. Keep the night temperatures down during severe frost. The East India-house had better be at from 55° to 58° at 7 A.M. than at 65°, for if it stood at the latter figure there would be little need, or, in fact, opportunity, of advancing the temperature during the day-time, as the thermometer would read high enough already; but at about 55°, the fire being put sharply on, an increase of heat soon takes place, the air is put in motion, and a slight moisture is produced by the aid of such a rising and advance in the temperature. The Phalænopsis, more especially amabilis grandiflora, and Schilleriana, will now be pushing up their flower-spikes. These must all be watered with great care; large supplies will not be needed, though it will not be safe to let them get dry at the roots. Do not allow any water to lodge in the heart of the plant, as rot is very liable to take hold of them through a drip falling in the centre of the plant. Although in some situations they may be said to be managed very easily, it is nevertheless very true, as many are ready to admit, that of all the things that puzzle and annoy them, though they do all that their judgment and experience would lead them to adopt and consistently to carry out the species of Phalænopsis are the most difficult; having managed them successfully in one place, they have, when removed to another, found it almost beyond their power to induce a healthy and vigorous growth. Few things are more admired than those just named, and they deserve all the praise bestowed upon them, whilst some of the other species, though less known, are at the same time very beautiful, though perhaps not in so distinct a manner as those named above. P. Portei and P. leucorrhoda are at present too scarce to class them with the others, but may compare in point of beauty with any of those that have been alluded to. *W. Swan, Fallowfield.*

THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec. 9	Sale of Bulbs, Lilium auratum, &c., at Stevens' Rooms.
WEDNESDAY,	Dec. 11	Sale of Trees and Shrubs, Roses, Dutch Bulbs, &c., at Stevens' Rooms.
THURSDAY,	Dec. 12	Sale of a Collection of Orchids at Stevens' Rooms.
SATURDAY,	Dec. 14	Sale of Fruit Trees, Shrubs, Roses, Bulbs, &c., at Stevens' Rooms.

THE history of the DEVELOPMENT OF BUDS is of so much practical importance, and bears so much on the operations of FORCING, that a brief reference to the experiments of M. ASKENASY, of Heidelberg, may be of interest. In studying the development of the buds M. ASKENASY chose specially those of the Cherry, which produce the blossom before the leaves, so that the two processes of flower formation and leaf formation can be studied separately, and leaf action can be separated from the phenomena manifested by the developing flower-buds. At least a hundred buds were taken on various occasions, each bud being measured and weighed in the fresh and in the dried state. By such investigations three distinct stages of growth in the bud are made manifest:—1, a slow and gradual process of development during the summer months up till the end of October; 2, a period of repose from November to January; 3, a period of rapid development, always increasing, and attaining its highest degree just before the opening of the flowers. Increasing weight of solid matter coresponds with these phases of development. So far there is nothing very new or important from a horticultural point of view. The relation of temperature to these phenomena is of more importance, M. ASKENASY showing that the effect of temperature on the buds in the two first stages is but slight. Whatever the climatal conditions of the summer, the length and weight of the buds was the same on the average at the beginning of autumn.

As regards the third stage, however, the case is different—the degree of temperature now exerts, as every gardeners knows, a very potent influence on the development and expansion of the flowers. Lastly, the author has made experiments on the increased rapidity of development caused by submitting the buds to a high temperature in winter. The results are very variable according to the period of the winter at which the experiments were commeneed, but show clearly that during the socalled period of repose considerable changes are going on in the interior of the plant, though little change may be conspicuous externally. Some bud placed in a greenhouse at the end of October did not develope; those placed in the house on December 14 opened in twenty-seven days, and those on January 14 in fourteen days. In spite of these variations all, nevertheless, were of the same size and outward appearance.

It will be seen that these experiments at the first glance seem to tell against the view universal among gardeners of the effect of a fine autumn in ripening the wood, and promoting the healthy, vigorous development of the buds in the following spring. But it must be remembered that in these experiments one factor only—temperature—was considered, and the effects produced were considered solely with reference to the increased size and weight of the buds, and the period and relative rapidity of their increase. So far as we see from the abstract of the paper before us, the subtler changes in chemical composition which take place were not studied; and here indeed is made manifest one of the great wants of vegetable physiology—we mean the study of the plant as a living being. We want to know the exact nature and relations of the changes that take place in the living plant. It is easy to observe increased size and increased weight, but we want to know more especially what is represented by that increased weight, because it is obvious that that weight may be made up in very various manners.

—— HELENIUM AUTUMNALE.—Among the more showy herbaceous plants this is one of the best. It grows about 3 feet in height, and produces clusters of large pure yellow flowers. It is at once effective and refined, which cannot be said of all the yellow-flowered Composites. Our illustration (fig. 123), which was taken from a plant in Mr. FRASER'S nursery, will serve to give a good idea of the plant. It is a native of North America, and there is a dwarf form of it differing only from the type in its smaller size. In Mr. PARKER'S nursery at Tooting we have seen a green-flowered variety of much scientific interest, but hardly to be recommended for its beauty. As many will be re-arranging their herbaceous border at this season, we may safely advise them to procure this fine plant, which is suitable for the back or middle row of the borders.

—— MUSHROOM CULTURE.—Growers for market are notoriously the least communicative of all horticulturists, and the last persons connected with the horticultural industry to submit their premises or methods of culture to the inspection of an outsider. To hear them talk in the neighbouring market you would think that "secrets" and "wrinkles," were their sole stock in trade, and that if you were once admitted into their "shop" their occupation would be gone, and the Duke of BEDFORD would become, not the owner of the richest garden in the world, but —well, a poor man. Of all the wonderful stories that come to our ears, none are more wonderful than those which are related in connection with the marvellous crops of Mushrooms which certain growers are said to obtain, but which, strange as it may appear, we have never seen. However, we saw a crop last Saturday that well merited the application of the term "wonderful," in Mr. MAITLAND'S garden at Merton Abbey, Surrey, and which, without exception, is the best example of Mushroom cultivation that has come under our notice. Mr. MAITLAND'S Mushroom-house is 155 feet long, and 12 feet wide, and contains five beds, four for Mushrooms and one for Seakale, and each of the entire length of the shed. There is a path down the centre about 30 inches wide, and the beds are arranged two on one side, three on the other, and all averaging about 1 foot in depth. The practice followed is to fill up the beds with ordinary "London manure" beaten firmly down, and then left until the heat is on the wane before spawning. When this is done the beds are covered with hay for about a week to "draw the spawn," and at the end of that time, or as soon as it is seen that the spawn is freely on the move, about half an inch of soil is lightly placed over the beds and merely levelled down. For a week or two after soiling the temperature of the house is maintained at about 60°, and subsequently at about 53° or 54°. In this way the Mushrooms begin to appear in about thirty days, and in about five weeks the beds are in full bearing, as at present, and producing the delicious "buttons," "cups," and "grillers," in perfectly astounding quantities. In ordinary practice it takes six weeks to get a crop, and then not often a big one. Mr. MAITLAND'S plan does the thing by express.

—— THE LATE MR. M'NAB.—We learn that the funeral of this gentleman took place on Friday last at the Warriston Cemetery, Edinburgh, in the presence of a very large number of friends and acquaintances.

—— THE FRAUD AT THE LIVERPOOL CHRYSANTHEMUM SHOW.—We have received several letters commenting in severe terms upon the carelessness of the judges on this occasion; but the wisest and best of us often err, so that it is not necessary to add to the annoyance that an honest man must feel under such circumstances. Nor do we think it desirable to adopt the suggestion of another correspondent, to the effect that the portrait of the delinquent should be given in the *Gardeners' Chronicle*—this journal has no desire to emulate the *Police News*. We may, however, suggest to Carnation dressers and others who dress flowers in all good faith, and against whose honour nobody alleges anything, that they take special care that there is absolutely no concealment about their procedures. Of course the elect are quite well aware of the practice; but many persons, and even some exhibitors, are not; and to the dull Bœotians of the outer world there is not so very much difference, except in intent—of which they know nothing—between such procedures as the experts condemn in one place and admire at others, say in a Covent Garden bouquet-shop, or on the exhibition table.

—— PARIS EXHIBITION AWARDS.—We are pleased to hear that the Cross of Chevalier of the Legion of Honour has been conferred on Mr. ROBERT CHARLES RANSOME, of Ipswich—a "special recognition of the French Government in appreciation of the merit of the manufactures of his firm exhibited in Paris this year;" that Marshal MCMAHON has forwarded, through M. WADDINGTON, Minister of Foreign Affairs, to the managing partner of Messrs. JAMES GIBBS & CO., the Cross of Chevalier of the Legion of Honour, for the excellence of their manufactures at the Paris Exhibition; and to Mr. W. H. LASCELLES, 121, Bunhill Row, E.C., the Cross of Chevalier of the Legion of Honour, for his exhibits in classes 17, 66, and 85 in the late Exhibition.

—— THE ROYAL SOCIETY.—At the annual meeting, held on Saturday last—St. Andrew's Day—special interest was attached to the President's address, as it was known that Sir JOSEPH HOOKER had decided on relinquishing the Presidency, to which he was elected five years ago. Towards the end of his address, of which a summary was given in the *Times*, he alluded to his retirement, and stated that though wholly opposed to the view that the term of the Presidency of the Royal Society should be either short or definitely limited, there were reasons, such as official duties at Kew, and the fear of accumulations of arrears of work in co-operation with other naturalists, which, in his particular case, made it almost imperative that he should resign the post. The address was a retrospect of the progress in various branches of science during the last five years, and Sir JOSEPH said that during this time he recognised advances in scientific discovery and research at home and abroad far greater than any previous semi-decade could show. The essay of Count GASTON DE SAPORTA, on *L'Ancienne Végétation Polaire*, was referred to at some length, attention being especially drawn to the way in which the Count suggests a solution of the difficulty which has always presented itself—how to account for sufficient light within the Arctic regions for the rich flora which from fossil evidence it is known formerly flourished there. SAPORTA takes his facts from the work of HEER, though he differs from him in his inferences. BUFFON, in his *Epoques de la Nature*, had argued that the cooling of the globe having been a gradual process, the polar regions must have been the first in which the heat was sufficiently moderate for life to have appeared upon it. Starting from this thesis, SAPORTA assumes that the termination of the azoic period coincided with a cooling of the water to the point at which the coagulation of albumen does not occur, and that then organic life appeared, not in contact with the atmosphere, but in the water itself. Not only does he regard life as originating, if not at the North Pole, at least near to it, but he holds that for a long period life was active and reproductive only there. Passing from speculations regarding the initial conditions of terrestrial life, the question, the President said, presented itself with regard to the carboniferous and later floras, How could plants have flourished in such latitudes if summers were of months and winters of similar lengths as now? SAPORTA suggested that besides the effects of probable fogs due to southerly warm oceanic currents, the solar light was, perhaps, not distributed over the globe as it now is, but was far more diffusive, the solar body not having arrived at its present state of condensation. Sir JOSEPH pointed out that some of SAPORTA'S conclusions were supported by the work of Mr. THISELTON DYER,

who, by a totally different line of research, had arrived at the conclusion that the northern hemisphere had always played the most important part in the evolution and distribution of new vegetable types, or, in other words, that a greater number of plants had migrated from north to south than in the reversed direction, and that all the great assemblages of plants which we called floras seemed to admit of being traced back at some time in their history to the northern hemisphere. Turning to microsopical botany, a historical sketch was given of the origin and progress of the study of cells and cell division; Mr. DARWIN'S work in physiological botany was epitomised, and in the progress made in morphological botany especial reference was made to the work of COHN, of KOCH, and of KLEIN, on the development of spores within the rods of Bacillus. A practical result of these observations is that KLEIN has shown that typhoid fever of the pig is, like splenic fever, due to a Bacillus, and it is now distinctly proved that two diseases of the higher animals are generated by *contagium vivum*.



FIG. 123.—HELENIUM AUTUMNALE. FLOWERS CLEAR YELLOW. NAT. SIZE. POLLEN GRAIN MAGN. 320 DIAM. (SEE P. 724.)

—— WINTER BEDDING AT HECKFIELD.—Whilst the twice exhibited collection of ornamental and decorative hardy shrubs suitable for winter bedding staged by the Messrs. VEITCH & SONS at South Kensington at the past meetings may have done much to familiarise the minds of the visitors with the most suitable material for such a purpose, the arrangement of the plants afforded no evidence of the most pleasing way in which they should be disposed to produce a gardenesque effect. The exhibit was intended to show the material available, not the best mode of arranging it. We have often alluded to the winter bedding at Heckfield, where it is carried out in exact conformity with the summer bed-

ding arrangement, and constitutes not a c stly contrast but a cheap and simple continuity, the summer tender plants in the designs being taken out early in November and their places filled with hardy things, in which pretty small shrubs and elegant little Conifers predominate, and thus the beds are charming, if not absolutely elegant, throughout the dull winter months. Tender Alternanthera and Lobelia carpets are replaced by Sedums and clipped Heath ; Echeverias, Agaves, Sempervivums, and other dot plants by variegated Conifers, Hollies, Aucubas, &c., and by dark-leaved Beet, sown late and grown especially for the purpose. In the large raised basket beds the tender plants have given place to an elegant arrangement of various-coloured Coniferæ and graceful shrubs, above which project noble specimens of the Australian Draccenas. In the beds the silver Echeverias, Golden Feather, Mentha, Sedums, and other hardy things remain ; and as the designs are in all cases formed by these the outlines remain undisturbed. Good winter bedding is after all more a matter of energy than of cost, which need not be excessive even at starting.

—— TREES AND FOUNDATIONS.—Mr. EDMUND B. FERREY records in the *Builder* a curious instance which has lately come under his observation of the mischief to the foundations of buildings which may sometimes be caused by the roots of trees. In the case to which he refers attention had been drawn to an increasing settlement in the wall of an infant school (built some five years since). It was clear that something was wrong underneath, and so underpinning was determined upon. When the ample and well-executed footings and concrete had been examined it was discovered that the roots of a row of Ontario Poplar trees which stood in a neighbouring garden, some 20 or 25 feet distant, had worked their way down to the depth of some 5 to 8 feet, and had completely disintegrated the concrete. The roots were mostly of very fine texture, some mere fibre of no greater substance than human hair, and a few larger ones as thick as a man's little finger, all entwined in the concrete. The soil was a cold clay, and an experienced horticulturist assured him that although the roots of Poplars traverse strata which would repel other trees, yet they generally strike only to a shallow depth. In this instance the roots had devoured all the lime in the concrete in the lower part, which was crumbling away. The upper part (where no roots existed) was perfectly sound. Instances of strong roots throwing down walls are not uncommon, but Mr. FERREY found, on inquiring f experienced men, that the insidious work of these distant trees is unusual. The new foundations, &c., have all been executed in Portland cement concrete at a considerably greater depth than before, and warning given to the occupants of the adjoining garden.

—— THEFTS AT FRUIT SHOWS.—Exhibitors of flowers and fruit so often have to complain of the loss and annoyance, resulting from the petty practices of picking and stealing indulged in by those who ought to know better, at exhibitions, that we read with pleasure in the *Devon Weekly Times* that "WILLIAM RAWLE, a respectably-attired young man," was lately sentenced at the Torquay Petty Sessions to seven days' imprisonment with hard labour, for stealing an apple, value one penny, at the recent Chrysanthemum, fruit, and vegetable show of the Torbay Horticultural Society. The offence was clearly proved, and the Chairman, addressing the prisoner, said he was evidently, from his address and appearance, above the ordinary run of persons who might be tempted by an apple. He appeared to have gone to the show, where property was very much exposed, and was consequently left as much as possible to the honour of those present. Although a little the worse for liquor, he could not have been very drunk, for he had a lie on the tip of his tongue as soon as he was called on to produce one apple, and he was sober enough afterwards to try and conceal the other apple. He therefore had not the excuse that he made a beast of himself first, before he became a thief.

—— THE WOODSTOCK KIDNEY POTATO.—At the large Potato show held in connection with the recent cattle show at Bingley Hall, Birmingham, Woodstock Kidney received a Silver Medal, value two guineas, as the best dish of Potatos in the show. The sample was grown and shown by Mr. MCKINLAY, of Beckenham. Mr. FENN, who raised it, can hardly decline to admit that at last one of his seedlings has received the honours due to it.

—— PRESERVATION OF ORCHID FLOWERS. — We are indebted to M. ALPHONSE DE CANDOLLE for the following particulars, communicated to him by M. BORNET. It appears that the late M. THURET was in the habit of preserving flowers of Orchids in a saturated solution of common salt. After ten years the preparations were found to be in good order, and better than those made with spirit of wine. It would therefore be practicable to make collections of flowers in flat white bottles, which would be very convenient for examination, the more so as, with management, several flowers might be placed in each bottle, some in one position, some in another, so that the flowers might be seen on all sides without turning the bottle and shaking its contents. The flowers, in fact, might be seen arranged for display or examination of structure just as they would be by a skilful botanical artist.

—— INSTITUTION OF SURVEYORS. — The next meeting will be held on Monday evening, December 9, when a paper will be read by Mr. T. F. HEDLEY on "The Rating of Railways, with Suggestions for the Amendment of the Law." The chair to be taken at 8 o'clock.

—— ROYAL BOTANIC GARDENS, CEYLON. — From the Report of the Director of the Botanic Gardens of Peradeniya and Hakgala for 1877, we extract the following notes :—

"In the celebrated Palm group, just within the entrance gates (see *Gardeners' Chronicle*,, vol. i. 1874, p. 439), two towering Talipot Palms have been displaying for several months their gigantic plumes of flowers ; unfortunately these fine trees will soon die after the ripening of their numerous seeds, and after proving, to the delight of visitors, glorious ornaments of the garden for a period of nearly forty years. The height of the largest of these trees, including the flower-panicle of 22 feet, is 105 feet ; the circumference of stem with persistent bases of leaves, at 3 feet from the ground, 13 feet 9 inches ; of naked stem, at 21 feet from the ground, 8 feet 3 inches. It is gratifying to know that there are other specimens of this fine Palm to come forward as their worthy successors in due time.

"*Coffee.*—There is little appearance of Coffee cultivation losing its attractiveness, notwithstanding the fears entertained by many persons that the Hemileia is causing much injury to the trees. High manuring, especially when administered to vigorous young trees, is believed by a large number of planters to obviate the ill-effects of this pest. There is some reason, however, to question the desirableness of applying stimulating manures to very old Coffee trees weakened previously by severe attacks of the leaf disease. In such cases cautious and careful experiments are to be recommended.

"*Liberian Coffee.*—Except in its very early stage of growth, this species of Coffee appears certainly to suffer less than the ordinary Coffee from the attacks of the Hemileia. The existing plantations are said to be thriving well, and to show promise of producing large crops. From berries produced by our own specimens we have raised a considerable number of healthy young plants, several of which have been planted out in the tropical garden at Heneratgoda, where they are coming on very favourably. I am sorry that I have not yet had ripe berries in sufficient number to justify my using them for the purpose of ascertaining satisfactorily the quality of the beverage obtainable from this as compared with that of our ordinary Coffee."

—— EVERGREEN OAKS.—Propably one of the finest groups in the kingdom of these hardy evergreen trees may be seen at Highfield, near Strathfieldsaye, some fifty or more having been planted many years since. Some of these have now stems 18 to 24 inches through at the base, and have gone up to a height of from 80 to 100 feet. So large and clean are many of the stems that but for a view of the heads they may be mistaken for trees of the common Oak. This year, in common with other hardy trees, they are producing a large stock of acorns, the fruit being about one-half the size of that of the deciduous Oak, and the shells of a darker tint. These are just now ripening and falling, being at least four or five weeks later than ordinary acorns.

—— CHAUMONTEL PEARS.—At the autumn exhibition of the Ealing, Acton, and Hanwell Horticultural Society on November 20 a basket of fine Chaumontel Pears was shown by Mr. J. HEPPER, gardener to C. O. LEDWARD, Esq., The Elms, Acton. Mr. HEPPER is well-known as a successful cultivator of this fine Pear, and on several occasions has been awarded the thanks of the Society for "magnificent" examples of this variety, of rare quality. Mr. HEPPER gets his best fruit from a tree on a west wall growing in a gravel subsoil : it is gathered in October, and kept in a very dry fruit-room till the middle of December, after which time Mr. HEPPER finds the fruit to degenerate in quality. On the gravel this tree makes but little growth, but it produces a good crop every year ; and to assist the tree a load of good manure is given as a dressing every year, with copious supplies of manure-water at fruiting time. So freely do the Chaumontel Pear trees bear that Mr. HEPPER makes a point of thinning his fruit while yet green, and using them for baking purposes, and by so doing husbands his stewing Pears till after Christmas. The fruits, when ripe, have that delicious, buttery, melting, and delicate flavour peculiar to this fine variety when well grown. It also does well at Acton as an espalier, but the finest fruit come from a west wall. As some persons have complained they cannot keep this Pear in good condition, it may be stated that Mr. HEPPER finds the Pear to keep rich and plump in the manner stated above.

—— THE PLANTING OF TREES AND SHRUBS.—There is scarcely any limit to what has been said and written, and continues to be repeated in one shape or other, about what to plant, when to plant, and how to plant trees and shrubs of all kinds ; but comparatively few of those who discourse on this subject lay equal stress upon the necessity of due care in the taking up of the trees that are to be planted. Yet we have no hesitation in saying that half the unsatisfactory results, witnessed in the stationary condition of the trees so planted for a year or two after their removal, is directly traceable to the barbarous treatment the trees receive at the hands of those who take them up, particularly in the case of any above the usual trade size. Where much work of this sort has to be done it of necessity has to be left more or less to men to whom it often appears an impossibility to convey either knowledge or care in the work to be done, and who chop, wrench, and mutilate the roots of everything that has the misfortune to be touched by them, as if they were as impervious to harm as the very tools employed in the work. It is much cheaper, and we would a deal rather pay a very considerable percentage more for even the commonest trees if taken up fairly, than for trees with half or three-fourths of their roots left in the ground, and the remainder half wrenched off. It is in a great measure through this that we so often hear it said it is better to plant the smallest trees in preference to such as are larger, as the former usually outgrow the latter.

—— MISTLETO.—In the park at Highfield, the residence of Mrs. MASON, adjoining Stratfieldsaye, Mistleto grows most abundantly on the Lime, and as these trees here are as tall and in their high growth largely resemble Elms, there are many fine bunches of the white-berried parasite that have so far escaped the grasp of the collector for the Christmas festivities. In another part of the grounds bunches of it are growing upon the Whitethorn, and close by some seeds have germinated on the Laburnum, a subject far from common as a Mistleto stock. The branches of this tree being nearer to the ground enables the observer to note that in each case the Mistleto growth has proceeded from the lower side of the stem ; and from this circumstance it may reasonably be inferred that the birds, who are very fond of the berries, pass them, the seeds undigested, and with a portion of the gummy substance of the berry, so that the seeds slide down to the under side of the branch on which they are deposited, and there they remain until germination ensues.

—— CHEATING THE CARROT MAGGOT.—This pest is so abundant and destructive in many gardens that a good crop of spring-sown Carrots is out of the question. At the recent Ealing autumn exhibition, Mr. JAMES HUDSON, gr. to C. A. ATKINSON, Esq., of Gunnersbury House, Acton, had in his collection of vegetables a very handsome bunch of summer-sown Intermediate Carrots that were as clean, as free from the attacks of the maggot, as could be desired. Mr. HUDSON stated that spring-sown Carrots were in his garden out of the question, and therefore he

cheated the destructive insects by sowing seed in July, and thus found that the crop, though of less bulk, was untouched. These Carrots were sweet and crisp, and delicious eating. It is the practice to cover a portion of the bed with litter in hard weather, and thus maintain a supply of fresh-pulled Carrots all through the winter. A similar late sowing of the Long Red at Heckfield produced as excellent results, the roots, though of moderate size, being clean and perfect for table use.

—— A Domesticated Quail. — We are not accustomed to associate the quail with domestic pets, and yet there is one of these timorous and by no means common birds running about in the kitchen attached to Mr. Wildsmith's cottage at Heckfield, as unconcerned as though it were a tame starling or jackdaw. It was reared by a bantam hen, and is now four months old, and is almost full grown. It perches upon the back of the dog, and creeps into the shelter of his body when lying down. It is also on good terms with the cat, and fears no stranger, but makes itself quite at home with every one. This unusual associate of the domestic fireside evidences what may be done by care and kindness, whilst the pleasure taken in its society of the dog and cat shows that even these game-loving animals are not always so black as they are sometimes painted.

—— Potatos at Bingley Hall. — The display of Potatos at the annual Christmas Agricultural Show at Birmingham has been of more than average interest this year. About 400 dishes were staged, and very few inferior exhibits were sent. Below we append a list of all the sorts shown in the winning stands in the principal classes, the number in parentheses at the end of each name showing how many times the variety was exhibited in the prize collections :—Blanchard (2), Beauty of Hebron (2), Breadfruit (5), Bresee's Peerless (1), Bresee's Prolific (1), Brownell's Beauty (5), Brownell's Superior (3), Carter's Ashtop Fluke (1), Centennial (1), Climax (1), Early Goodrich (2), Early King (7), Early Rose (3), Emperor (4), Excelsior (5), Extra Early Vermont (2), Garibaldi (2), Grampian (5), Giant King (1), Harrison's Red Fluke (1), International (4), King of Potatos (2), Lady Webster (1), Lapstone (3), Late Rose (1), Louise of Lorne (1), Lye's Favourite (2), McKinlay's Pride (1), Magnum Bonum (4), Manhattan (3), Model (3), Perfection (2), Radstock Beauty (1), Rector of Woodstock (1), Ruby (1), Shelburne (1), Salmon Kidney (2), Schoolmaster (5), Scotch Blue (1), Snowflake (6), Suttons' Woodstock Kidney (2), Triumph (5), Trophy (5). Three hundred out of the four hundred dishes staged are occupied by these forty-two kinds in various combinations. Mr. P. McKinlay, Woodbine Cottage, Beckenham, won this year, as he did last, the 1st prize for twelve varieties (£5), and Messrs. Sutton & Sons' extra prize, a Silver Cup, value five guineas, with a superb collection of tubers, to one dish of which (Sutton's Woodstock Kidney) was also awarded Mr. Thomas Ottley's Silver Medal, value two guineas, offered for the best dish of Potatos in the show. Messrs. James Carter & Co.'s Silver Cup, value five guineas, was won by Mr. James Pink, Sheldwich, Faversham, with a capital collection of eight varieties, four of which were American. Messrs. G. & J. Perrey, of Acton Pigott, Condover, Salop, won the 2d prize with a praiseworthy collection. The same gentleman showed a dish of Carter's Ashtop Fluke, which the judges commended as the second best dishes of Potatos in the show. *From a Correspondent.*

—— A Caution to Gardeners and Nurserymen. — We hear that a well-dressed young man, having all the appearance of a "ground foreman," has lately been driving a lucrative business in the borrowing line in the counties of Kent, Surrey, and Sussex. Wherever he calls—be it at a gardener's house, a nurseryman's, or a corn-dealer's—he introduces himself as the foreman at the best known place in each locality (generally naming the leading nurseryman), and states that he has had the misfortune to lose his purse and railway ticket, and that he would be much obliged for the loan of a few shillings to carry him back. He has a plausible address, carries an overcoat on his arm, a respectable-looking umbrella in his hand, and altogether plays his part so well that he has succeeded in gaining a good many "lifts home." He gives the name of Miles, or Wyld, neither of which belongs to him, and offers to leave the umbrella in pledge if there is any doubt as to his honesty. But our readers should fight shy of the "gamp," if he offers another, as the last he left behind him as security for a few shillings proved to be a mere stick and rag.

—— Florvita. — Under the somewhat high-sounding name of "Florvita" Messrs. Prentice Brothers, of Stowmarket, one of the oldest established firms of artificial manure manufacturers in the country, have introduced a concentrated manure, in the form of a pink powder, which has the desirable quality of being perfectly odourless—a boon which amateurs, and lady gardeners especially, will welcome. Of a pleasing colour, and free from disagreeable smell, the preparation appears to be rich in salts of ammonia and potash, nitrates of potash and soda, and soluble phosphoric acid—in fact a concentrated compound of the more valuable artificial manures. According to our experience of a small quantity, it is readily dissolved in water, can be applied to plants grown in rooms without the least objection, and well answers its purpose as a fertiliser.

—— The Weather.—The report for the week ending December 2, issued by the Meteorological Office, states that the weather was showery and changeable, but finer on the whole in the west and north than in the south and east. Temperature below the mean in all districts, the deficit varying from 4° to 6°. The maxima seldom above 45° except in "England south-west," and frequently below 40° in the northern districts. Several night frosts reported, the most severe being those of November 29 and 30; on the former occasion the thermometer on the grass fell to 17° at Glenalmond and to 24° at Loughborough, while on the last-mentioned day the shaded thermometer fell to 21° at Audley End and Parsonstown, and that on the grass in London to 17°. Rainfall several tenths more than the mean in the north-east and east of England and north of Ireland, but less in all other districts. Showers of snow, sleet, and hail very general in Scotland and the east of England. Wind northerly to north-easterly at the southern and eastern stations, but westerly in the north and north-west during the earlier portion of the week. Light or moderate in force generally, but fresh to strong gale from N.E. in the east of England on November 28.

OUR POISON BERRIES.

Autumn presented us this year with less of its own distinctive peculiar features than it generally does. We seem to have passed from a late summer all at once into winter, with its snow, frost, and ice. The warm weather we had in September served to retain for our woodlands and hedgerows their exquisitely shaded foliage until November. The period of fallen leaves had not only come, but half run its course. I visited friends in the country about the end of October, and was greatly astonished to find many of our early autumnal wild fruits hanging on their native stems, untouched by birds or decay.

I saw the black, cherry-like berry of the Belladonna and several of our late summer flowers fraternising with their autumn relatives, whilst not a few of our actual winter berries added their share of beauty to some of the wild spots I discovered during my rambles. There were hips and haws, the fruit of the wild Rose and the Hawthorn tree; the perfumed wild Thyme, stately Mullein, and charming little Eyebright, all growing in one sheltered nook, even butterflies were not wanting to perfect the delusion that summer was still with us. The bright, warm sun had either tempted a few of these insects to put off their winter sleep, or prolonged their brief existence. I am not sufficiently up in entomology to decide whether the species I saw were hybernators or not, but must pass on to our poison berries.

The Atropa Belladonna is most appropriately named from Atropos, one of the Fates, whose office was supposed to be cutting the thread of human life; and Belladonna (beautiful lady), from the various uses made of it by the Italian and Spanish "Madame Rachels" as a cosmetic. English readers will probably know it best as the Deadly Nightshade, called in some counties the Dwale. It is not a true native, and botanists imagine, from its being met with in the vicinity of old encampments, that it was first introduced by the Romans. The stems are herbaceous, branched, and rise to the height of 3 feet or so; the flowers solitary and purple, the fruit black, and the size of a small Cherry. Country children style them "Naughty Man's Cherries;" but although a deadly poison the Belladonna has many valuable properties worthy of mention. It furnishes medical men with a most powerful remedial agent in many diseases; but it would be most unwise to take it as a domestic medicine, for many fatal cases are recorded from its injudicious use. One hundred and fifty soldiers were poisoned by eating the berries at Pirna, not far from Dresden, and Shakspeare, in the speech made by Banquo, alludes to it when the latter asks Macbeth—

> "Or have we eaten of the insane root
> That takes the reason prisoner?"

—the Belladonna being known to cause a species of poisonous intoxication in human beings, though many animals eat the foliage with perfect impunity. It is singular how few accidents occur from plant poisoning, when we notice the carelessness displayed by most people in introducing dangerous vegetable characters into their gardens. I saw a fine plant of the Deadly Nightshade in full fruit in a cottage border not long since, and on asking the mistress what it did there she coloured up and blurted out some long story about some "friend of Joe's having brought it from a far way, and told to be careful of it, as it were a very rare tree." On my informing her what it really was her face expressed disappointment, and she promised to caution the youngsters against touching the berries. I afterwards found out that "Joe" worked in the Squire's garden, and that the Squire, having a fancy for medical botany, cultivated poisonous plants. The Belladonna was a late importation, so "Joe" thought it must be "a very rare tree."

Another poison berry-bearing shrub found in this and some of our other English counties is the Mezereon (Daphne Mezereum), but it is much more rare in a wild state than the Belladonna, and cannot be called an autumnal berry, since its fruit ripens early in the year; but the drupe (which being of a bright scarlet hue looks very tempting) has caused several deaths, so I introduce it here. Its flowers are exceedingly fragrant, and as they appear before the foliage, about the end of February, at a season of the year when blossoms are scarce, it is much cultivated in shrubberies, where, thriving right well under the shade of larger trees, it is most generally seen.

It is a very hardy plant, being found as far North as Lapland, where the natives call it "Koellerhals," *i.e.*, "cellar opener," because one of the berries will cause such thirst and such a burning sensation in the throat that copious draughts of ale are resorted to by the unfortunate peasant who has swallowed it. The Persian name of "Mâdgra youn" is far more poetical. The berries are a mortal poison to most animals; six of them will destroy a wolf, according to Linnæus; but I have seen some birds eat them—a species of finch will do so occasionally, and I fancy they only take the pulp of the fruit, not the seeds, as many birds eat the berries of the Yew tree. Our medical men have long extracted a medicine from the bark of the Mezereon, but the fruit in its natural state they deem too virulent for use, and I have known country people rub a piece of the bark on the face when suffering from toothache, to cause a blister. It should be first well steeped in vinegar, and then applied to the spot affected. Some put an Ivy leaf over it, and keep it on for hours. It is also in great repute on the Continent as a remedy for deafness and some kinds of ophthalmia, but in such cases a perpetual blister is kept up for weeks by renewing the piece of bark daily. Spain is, or was, the place a few years ago wherein to see this shrub in full beauty. There the "Torbisco," as the natives call it, perfumes the surrounding air, and it appears to be a general favourite with the peasantry. The *arrieros* as they trudge along with their mules gather branches of it; the *galéra* drivers patronise it; and all the pretty country girls, with their gold earrings hanging down to their shoulders, and their long gilt bodkins projecting from each side of their heads, stick a piece of this blossom in their bodices.

The red-berried Bryony is another of our poison fruiting plants. A well-known climber is the Bryonia dioica, seen in our hedges, with its graceful stems and slender tendrils clinging to other trees, and adorning them with the beauty of its palmated leaves in spring, putting forth

its yellowish green-veined flowers all throughout June, July, and August, and proudly standing forth decked with bright red berries at this season (autumn). The fruit is green at first, but changes to red as it ripens. This plant was well known at one time to be the one that certain old women, who pretended to be witches (and this belief has not yet died out in the island of Anglesea, North Wales), and many herbalists, passed off on the credulous as the Mandrake. They used to open the earth all round a young Bryony plant, and insert a mould made of plaster-of-paris, fastening the roots to it with wire; they then filled in the earth again carefully, and left the roots to grow to the prescribed shape—this, it being of rapid growth, it mostly did in one summer. One old woman in our village—a village I lived near when a child—professed to be able to cure people who suffered from what she called "the wolf" (from what I can remember, every kind of pain in the stomach or chest, or a very great craving for food, was termed "the wolf"); and the patient was supposed to have swallowed a toad, or a frog, or a snake, as the case might be, when drinking at the spring. So an application was made to Nelly Jenkins, who always gave a few doses of the root in milk. It is a powerful vermifuge, and very drastic in its effects, so doubtless Nelly's medicine was in many cases beneficial. [It is a violent poison. EDS.] Imagination and faith often work wonders, at any rate she reaped a good harvest from the Bryony. That it is a poison plant is a proved fact, and whenever I bring its beautiful berries in to decorate my stand, I am particularly careful in cautioning the servants to throw them into the fire when I have done with them; but they will last for many weeks in full beauty, so they are valuable as a decoration in winter, when any little bit of colour is most welcome as an addition to the sparing bouquets the garden at that season furnishes. *Mrs. Alfred Watney.*



Home Correspondence.

The Coming Winter.—Twelve years ago an article of mine was published in *Whistlecraft's Almanac*, &c., entitled "Recurring Periods in our Climate." According to a rule I then stated the now approaching winter of 1878-9 should be one of exceptional severity. The rule referred to is as follows:—"If a very hard winter recurs after forty-one years it will not usually after eighty years, but if it does not return in forty-one years, then the eightieth year is usually very severe." So, if we look back into old weather chronicles and find that a particularly severe winter occurred in a certain year, we shall know when to look for a return of the same weather. In the article alluded to I said, "As the following list mentions nearly all the very severe winters in the last 160 years, I believe I may say that, as regards intense frost forty-one and eighty years are the most regular recurring periods at present known. Thus, the winter of 1683 was severe, 1724 was not a hard one, but 1763 was. An exceedingly hard winter occurred in 1708-9, and after eighty years we had the remarkably severe winter of 1788-9. The frost was dreadfully severe in 1716, and the Thames frozen at London Bridge; and this winter had its counterparts in January, 1795, and December, 1796. In 1739-40 there was a terrific winter; so after eighty years was the winter of 1819-20. In all the foregoing instances a hard winter does not appear to have happened after forty-one years. The severe winters of 1742-3, 1743-4, and 1744-5, returned respectively, after forty-one years in 1783-4, 1784-5, and 1785-6. In 1754 the winter was unusually severe, so after forty-one years was the winter of 1795, but 1834 was remarkably mild—still, we see, true to the rule. A severe winter occurred in 1768, especially January, and January, 1848, was severe. The excessively severe winter of 1775-6 had its counterparts in February and December, 1855. The winter of 1779-80 was unusually hard, and after eighty years we have a remarkably severe frost in the winter of 1859-60. Some very hard weather occurred in 1784, and eighty years afterwards we had a very hard frost, n January, 1864. The winter of 1785 was very long and severe, so was the winter of 1865. The extremely severe frost of 1788-9 returned after forty-one years in 1829-30. The severe winter of 1795 will probably return in 1875 (this prediction was fulfilled). The unusually severe frost of 1796-7 returned after forty-one years in the frightfully severe winter of 1837-8. The severe frosty weather of 1799-1800 returned in 1840-41, and in both these winters the month of December was unusually cold. The hard winter of 1802 will probably return in 1882. In 1814 there was a very long and severe frost, and a fair was held on the Thames at London Bridge: and after forty-one years a remarkably long and severe frost occurred in 1855, when the Thames was frozen within a few miles of London. The hard winter of 1819-20 returned after forty-one years in 1860-1, and the hard weather of January, 1823 recurred after forty years in January, 1864. In 1826 there was a week of very severe frost soon after the beginning of January, so we may expect some days of very severe frost in the winter of 1866-7." This last prediction was duly fulfilled in January, 1867, for at Epsom, in the county of Surrey, the thermometer soon after the beginning of that month fell to 12° below zero; at Datchet, Bucks, it was 8° below zero; at Staines, 7° below zero; at Cobham, 6°.8 below zero; and at Stafford, 5° below zero. The very severe winter of 1798-9 did not return (after forty-one years) in 1839-40, therefore, a very severe winter is to be expected in 1878-9. It must also be remembered that it is exactly forty-one years next January since we had the terrific season commonly known as "Murphy's winter." In that month (of January 1838) the thermometer at Walton, near Claremont, fell to 14° below zero; at Beckenham it was 13½° below zero; at Wallingford, 5° below zero; at Greenwich, 4° below zero; and at Glasgow, 1° below zero. As this law of recurring winters has scarcely ever failed, to take suitable precautions against the destructive effects of coming intense frost can do gardeners no harm, and may do them some good. *Geo. D. Brumham, F.M.S., Barnsbury, Nov.* 30.

The Liverpool Chrysanthemum Show.—As I shared the responsibility, in conjunction with others, of getting up the "special prize" which was duly contested for at the late exhibition held in Liverpool, I hope I may be permitted to lay the whole facts and circumstances of the case, as far as I know, clearly before the public. At the outset I may say that I am both grieved and pained to have to admit that Mr. Ollerhead's statement of the horticultural drama enacted at St. George's Hall on the 20th of the past month is but too true. The readers of the *Gardeners' Chronicle* will remember the little bit of friendly banter that passed between Mr. Ollerhead and myself last spring respecting the relative merits of Chrysanthemums grown in the neighbourhood of Liverpool and around London. The result of that discussion led to a subscription being made amongst the "Liverpool gardeners," or at least that section of them who are interested in the cultivation of the Chrysanthemum, in order to offer a "special prize" which would induce the south-country growers to put the matter in dispute to a practical test, by entering into a friendly competition with their north-country rivals at Liverpool. I was one of those who collected the subscriptions, and I can pledge my word that I was met with the greatest enthusiasm in all directions, one and all being anxious that there should be especial *éclat* given to the occasion, and, to use the Secretary's own words, that there should be a "fair field and no favour" to every one. And now I have to express (on my own behalf and on behalf of all connected with the prizes) our deep and sincere regret that any such wilful and deliberate imposture should have been practised (especially by one who was quite competent on his own merits of contesting the ground fairly and honestly) for such a grudging selfish end. The delinquent is a young man of great promise, and it is a pity that he should have tarnished his escutcheon thus early in life, probably for no better purpose than to gratify the sinister designs of a grudging, spiritless, selfish clique. We now come to a different phase of the question, namely, How came the judges to pass over such an outrageous distortion of Nature as that represented in the abnormal growths set up under the false pretence of being natural-grown flowers? I put the question to Mr. Dale, who was the senior judge, as being of vital import in the elucidation of the matter, and on which, in the absence of any information from those who made the award, it would be unfair to hazard an opinion at present. In the next place, I am sorry to say that there is a misunderstanding in Mr. Ollerhead's letter, which I am sure was never intended by the writer. It is supposed by some of the fraternity that they can read "between the lines" something to imply that we ought to be held in some degree responsible for the disgraceful transaction, or at all events that we have been utterly oblivious to any amount of fraud and trickery being perpetrated in our ranks. Well, in the first place there is always an incentive to crime, be it great or small; but he must be a parsimonious wretch indeed who would risk committing a gigantic fraud for 20*s.*, the amount of the 1st prize offered for cut blooms at Liverpool for some years prior to the present. The offending party never gained a 1st prize in Liverpool, but he was 2d to Mr. Tunnington last year with a stand of very large blooms—a fact I think that I related to Mr. Ollerhead in course of conversation. I handled most of Mr. Tunnington's blooms on the night before the exhibition, and I had an invitation from Mr. Elliott, who gained the 3d prize, to go and see his flowers before the day of the show—a fact, I think, that speaks volumes for the good feeling that exists with the majority of Chrysanthemum growers. Could human nature with a grain of friendship or reciprocal feeling expect more? As to who was the first to make the discovery it would be difficult to say; a lady who is reputed for the interest she takes in the cultivation of the Chrysanthemum, hinted that there was something wrong early in the day. On entering the hall myself at 4 o'clock in the afternoon I pronounced the judgment to be egregious, the flowers were so "impudently wrong-named" that it is surprising how that fact alone did not create a suspicion in the minds of the judges and lead to detection. This was pointed out to one of the committee who could entertain nothing short of a "written protest:" but the fact is, no one suspected the real state of affairs at that time. Later in the evening, as the gas began to have effect on the flowers, the fraud became more visible, and I did all in my power to induce Mr. Tunnington, who was entitled to the 1st prize, to protest; but he rejected all my proposals for fear of a mistake. I then urged Mr. Ollerhead (to whom we are all indebted for his manly and straightforward conduct) to enter a formal protest, which no doubt he would have done on his own account, as by this time he had satisfied himself and others as to the accuracy of the suspicion which had been the only question spoken of in the hall for hours before. The last act of the drama created quite a sensation, but I hope we shall not all be branded as black sheep because of one trangressor. I am sure Mr. Ollerhead will give one and all connected with the show credit for their sincere reprobation of the act, and a kindly and friendly feeling towards the stranger exhibitors, who deserved a warm and and cordial reception for their courage in travelling such a long and cold journey to take part in the exhibition. *W. Hinds.*

Lilium speciosum rubrum with White Flowers.—In an amateur's garden at Watergraafsmeer, near Amsterdam, there has flowered this summer a plant of Lilium speciosum rubrum with nine flowers, of which the 1st, 3d, 5th, 7th, and 9th, beginning from the lower part of the stem, had the usual colour, but the 2d, 4th, 6th, and 8th were pure white, like those of the Dutch L. speciosum album. The plant had been for two or three years in the same spot, without being transplanted. In 1877 it bore five normal flowers of L. speciosum rubrum. The ground in which it was planted is a turfy, sulphury fen—Watergraafsmeer being a "*polder*," a drained lake, with a variety of soils, in some of which plants incline very much to vary temporarily in colour of flowers and leaves. I should like to know if a similar variation in Lilium speciosum rubrum, or in other sorts of Lilies, has been observed elsewhere? *J. H. Krelage, Haarlem, Nov.* 25.

Potato Notes from the North.—Messrs. Sutton advertise that they will send twelve varieties of Potatos for 18*s.* I sent them £1, and received the undermentioned thirteen sorts, which I had planted in a piece of new land in the garden, dug out of grass, and which had not been cropped for many years, soil sandy, with a little peat amongst it; and I now send you the results, placing the Potatos in the order of quantity of crop, the most prolific being the first:—Early Favourite, nearly double any of the others; Magnum Bonum, good crop; Snowflake, Lapstone Kidney, Red Fluke, and Crimson Ashleaf, good crop; Bresee's King of the Earlies, Paragon, Porter's Excelsior, Compton's Surprise, a medium crop; and Rector of Woodstock, Alpha, and Ruby, a poor crop. Of all these Early Favourite is the best quality, a good mealy Potato; then perhaps comes Snowflake, Magnum Bonum, and Lapstone Kidney, but all the rest were just rubbish—poor watery waxy things. Those that were most prolific seem also to have been the best, with the exception of Snowflake, which, though a capital Potato, was so diseased that the gardener says he fears he will have hardly seed left for next year. I propose next year to try those Potatos in the field in the ordinary course of cultivation instead of in the garden, and to see how they will do there. Early Favourite had also magnificent shaws, while some of the others had scarcely any leaf at all. The principal Potato grown here is Walker's Early. This has been quite an exceptional year in this district, as good as last year was bad; such a good year, in fact, as has not been known for some fifty years—a real old-fashioned, dry, hot summer, and a good autumn for getting in the crops, first-class

grass, at least a month or more earlier than last year; a capital grain crop; good Potatos, large yield, and almost no disease; and as for Turnips every field you went into looked better than its neighbour. A few Champions are grown here: the fields have a most curious appearance—the tops meeting in the rows and level give the field the appearance of a huge green shining table, as smooth as a table on top and quite close—not rough as Potato fields usually are. *James Richard Hay, Bairhill, by Rumblin; Bridge, Perthshire.*

Eucalyptus globulus.—It has been my fortune to reside in North America for a few years, where I had various opportunities of witnessing the growth and hardiness of this tree. A great interest was manifested in its welfare both in the Middle and Southern States, not so much as an ornamental tree for lawns and parks as on account of its anti-malarial properties. From different parts of the States news came to the effect that it had succumbed to the severe frosts, in other localities it had flourished and stood the winters tolerably well: the conflicting reports led to an investigation, which proved that where the soil was retentive and of medium fertility the growths had been luxuriant and spongy, and invariably killed in severe weather. It was obvious that the uplands were best adapted for the cultivation and future success of this tree; where the soil was calcareous and dry the wood was short-jointed and well-matured, thus enabling it to stand the test of hard winters. I distinctly remember planting a few in Northern Texas, and approximate to Dallas; the situation was elevated and dry, with a full north-western exposure. The first winter the trees were given a little protection, as they were not then fully established; the following season they grew admirably, and the succeeding winter, when the thermometer descended to 18° of frost, with the exception of a few tips of the spray being killed the trees remained uninjured. The above necessarily requires a naturally dry and exposed situation, so that no impediment will obstruct the ripening of its wood, which is absolutely essential to insure, to some extent, its winter's safety. *J. Wood, Dunrobin Gardens, Golspie.*

Folklore. — Country people in many parts of Hants, as well as in Wales, think it a very bad omen if Hawthorn blossoms are brought into the dwelling-house. I remember an old servant I had once flung a spray I had gathered out of window, gravely assuring me a few days afterwards that "Master ——'s sickness was all along of my carrying them nasty unlucky flowers into the room." *Mrs. Alfred Watney.*

Erica hyemalis.—This is certainly one of the most beautiful and useful greenhouse plants of the present time. If the quantities which are sold of this annually for ordinary decoration in the small size were known it would be no doubt something enormous. By this it would seem that these plants are killed, or after being used indoors for some time they are little good afterwards. That Heaths will not stand too much of indoor treatment is a certainty, and instead of growing plants that have been so weakened the best plan would be to start with fresh ones. Not only is the hyemalis valuable as small plants, but where there is space to grow them, they are equally so as larger specimens. We have here getting on for a dozen from 2 to 3 feet across; some were in flower more than a month ago, some are about their best now, and others will not be at their best for a week or two yet. No doubt this state of forwardness of some and not of others is owing to the part of the houses they have been in—the most favoured and warmest part bringing some more forward than others. I think this must be classed amongst the first-rate things for cutting, as finely flowered sprays are very pretty. *R. M.*

Some Good New Things.—Dendrobium bigibbum superbum is a real good Orchid, and one which will I think hold its position. The colour is very pleasing and uncommon. It is something like that of Cattleya Skinneri, or like some varieties of Phalænopsis Schilleriana; the flowers are extremely neat and of good size, and last a very long time in flower. Our plant has been in bloom ten weeks, and is not yet out; it is very free blooming. Croton Earl Derby I can fully recommend. I was afraid of it at first. I thought it was too delicate to be good, and that it could not carry so much bright gold and green and be vigorous and healthy; but I am glad to find I had underrated its merits. This plant has every good property—it breaks well, is compact in habit, good in constitution, and glowing in colour—a grand exhibition plant, and for decorative table ornamentation it would be very difficult to find its equal. Croton M'Arthuri is something in the way of C. majesticus; they form a capital match pair, being alike in habit, but very different in colour—both are elegantly graceful and free and good growers. The former might be called a fountain of silver and gold—the latter a fountain of gold and crimson: they are fine, and for exhibition plants they are indispensible. Dracæna Goldieana is also a good grower and a desirable stove plant. It is far more like a Dichorisandra than a Dracæna; however this may be, it is worthy of cultivation. New Coleus, Kentish Fire, Lord Falmouth, and Golden Fleece, are first-rate stove, conservatory, and table ornaments. I write for the guidance of others who may not be acquainted with these plants, and who hesitate not knowing what to buy in the strong existing competition of the plant market. I give the results of my experience, having no interest beyond a desire to prevent disappointment and advance the cause of horticulture. *William Payne, Belmont Gardens, Taunton.*

Capsicums for Decoration.—I was pleased to see in your issue of November 30 mention made of the Prince of Wales Capsicum, of which I cannot say too much as a useful pot-plant for table use, and the berries for table decoration on the cloth. I must also add a word of praise for the Princess of Wales and Yellow Gem, having grown them all largely this season. My mode of growing them is as follows:—I sow seed on a slight hotbed in the first week in March, and grow them on in a little heat until the middle of May, when they are placed in a cool house for the summer. I prick them as soon as they are large enough to handle into small pots or pans, and shift on into larger pots as required; and should extra large plants be in request, I place two or three plants together, and when the pots are well filled with roots I feed them well with manure-water. They will repay in autumn and winter for all the trouble and attention bestowed on them. *Joseph Clarke, Gr. to Lord Hastings, Melton Constable, East Dereham, Norfolk.*

Pruning and Cleaning Vines.—Pruning is an operation that in most gardens is deferred till much too late a period, and especially is this the case as regards Vines, the cut part on which takes some time in drying up sufficiently to close the pores of the wood, and so stop bleeding or loss of sap, which has a most weakening effect on the constitution of the plant, and does much more harm than a very heavy crop of fruit would. The risk of bleeding is not the only evil of late pruning, as the buds at the base of the shoot are never so large and so fully developed as those higher up, the tendency of sap being to flow to the extreme points, and therefore the sooner its course can be diverted and concentrated in those below after the leaves are ripe and of no further service, the better it is for them, and the finer and larger will the bunches and berries be. Because we see Vines without foliage and apparently dormant, we must not conclude that there is no circulation of sap, as that goes on continually in a greater or less degree, and by pruning early the little there is now in motion is confined to narrower limits where it pushes with greater force to find an outlet: thus filling and plumping up all buds that are left till they gradually burst forth into leaf. Vines pruned early start early, with much less forcing than would be required otherwise; and this is a fact well known to all our best Grape growers, who attach great importance to helping them on in this way instead of incurring loss of time and having to apply artificial heat to make up for the delay. If it were practicable to remove all buds during the summer except the one to be left it would be a great gain, but the season of doing it would have to be hit on to a nicety, or there would be the risk of the lower ones starting. To obviate this, however, that at the extreme end of the shoots might be left as a sort of safety-valve till growth had ceased, and then cut away when the whole energies of the plant would be devoted where most wanted, and at a time when they would be of most use. Vines on which Grapes have to be kept hanging are often greatly injured by late pruning, as not only are the Grapes themselves a tax by taking a good deal of sap to keep them plump, but there is likewise much expended on the numerous shoots and buds they contain, so that when starting time for the back ones comes, they are little prepared and break weakly through being robbed by the others. Fortunately the present system of bottling sets Vines at liberty much sooner than they used to be, and affords a better chance of pruning, which is a great advantage, and not only this, but the excitement they were always under through an equable temperature being maintained to keep the Grapes, had a weakening tendency by the drain it entailed on the roots. So convinced am I of the benefit arising from early pruning that after about the middle of November I always cut out the wood as the Grapes are used, as well as any shoots that may not be bearing; and the increased amount of light and air admitted by so doing acts very favourably on the fruit left, especially Muscats, the colour and flavour of which are immensely improved thereby. An early pruned Vine may always be cut harder back than a late pruned one, from reasons already explained; but when from unavoidable circumstances pruning has to be deferred, the ends of the cut part should always be touched over with styptic or white lead, so as to fill up the pores and make matters safe, for it is next to impossible to stop bleeding once it commences; so great is the force of the sap, and so continuous the flow, that the part is never dry long enough to get anything to stick on it. Many remedies have been tried, but all are of no avail, and where Vines are in full health and vigour one may almost as well attempt to stop the tide as to prevent bleeding after it once fairly sets in. As regards cleaning, the barking and scraping which some Vines annually undergo leaves them bare of their natural covering and does far more harm than good, as the exposure to which the inner rind is subjected causes it to become hard and contracted, which greatly impedes the growth and swelling of the rod. If it were not for the harbour the old bark affords insects, there would be no reason for interfering with Nature's work except for the sake of appearance, as the old garments are always thrown off when no longer of use, and to hasten her in any of her operations is not a wise proceeding. This being the case, instead of stripping the rods bare, as is frequently the custom, the best way is simply to remove any ragged portion that may be hanging or that will rub off by passing the hand round the stem. By so doing, any buds forming around the spurs are left intact, which is a great thing in the management of Vines, as the difficulty when the spur system of pruning is adopted is to keep them near home instead of projecting in an unsightly fashion some 6 or 9 inches from where they originated. Such spurs are always knotted and gnarled, and greatly impede the flow of sap, as may be seen by the weak way they break and the small bunches they bear, whereas any shoot issuing from the main stem is generally stout and vigorous. All insects that affect Vines may at this season be readily smothered in their beds, or exterminated by a thorough cleansing of the house; and this is a work in gardening that is second to none in importance, for besides the advantage of assailing the enemy when they are at their weakest, the benefits derived from clean glass cannot be overrated, as the extra volume of light admitted by it in comparison with that coated with slimy matter is something considerable: and light is life to all kinds of vegetation. During wet weather, when the internal air is heavy and laden with moisture, a little soap and water and a brush in willing hands works wonders, and if followed by a garden-engine or syringe, no insect pests or filth can withstand the onslaught. To settle accounts with any of the former that may be lurking in the cracks of the bark of the Vine, there is nothing so safe and effectual as a mixture made with clay, sulphur, tobacco-juice, and Fowler's insecticide, in the proportion of about 4 oz. of the latter to a gallon of water. This, with the same weight of sulphur, and sufficient stiff clay to give it the consistency of thick whitewash, carefully painted over the rods so as to cover every part well, not only kills thrips and red-spider, but their eggs likewise, as also the spores of mildew, which in many cool late vineries is often a source of trouble. *J. S.*

The Eucalyptus.—I should like to be permitted to say a few words about the Eucalyptus. In England we live much in the country during the late autumn and winter; beauty and variety of evergreen trees and shrubs add in the highest degree to the cheerfulness of our country-houses. Now, the peculiar blue-green of the Eucalyptus differs very much from the colours of our evergreens, and when seen against a background of Oaks, retaining their brown leaves, or with a foreground of brown Fern, forms a very striking, and, to my eyes at least, agreeable contrast. Even then, if the Eucalyptus does not live many years with us, it seems to me, considering that plants can be bought for 1*s.* or 1*s.* 6*d.*, or raised at an infinitesimal cost from seed, that it is well worth while to grow it if it be considered as only a biennial or triennial shrub. Some I have here have stood through two winters, certainly winters of extraordinary mildness, and are now 14 feet high. But may we not hope to see some hardy species which will at least stand every winter but those exceptionally severe ones which occur once in twenty years or so? The soil here is exceptionally poor; the site 400 feet above the sea. *Lupeniensis.*

The Elk's-horn Fern (Platycerium alcicorne).—I was at some pains to ascertain the opinion of some of our best botanists on the statement that this plant should be classed as a native Fern, but it seems that no one with an extensive knowledge of botany will admit it. Still I hear that it has also been found near Llandudno, another district in North Wales. No doubt the plants found in out-of-the-way places have either been placed there by design or accident. It was no uncommon thing for the students of a certain professor of botany in the North to introduce foreign plants into wild places and discover them afterwards quite innocently—that was one way. Mr. Andrew Brotherston, an excellent botanist, writes me from Kelso, N.B.:—"There are," he says, "many plants now wild in this district which are not

indigenous to it. They have been introduced by various agencies, principally with foreign wool. This in some cases is so full of seeds that they have to be removed by expensive machinery. The rubbish is thrown into the Tweed, and many sorts of seeds float down, to find a resting place on its banks. Others come from abroad amongst seeds intended for the farms. Large numbers of the plants so introduced live only one year, and unless there is a fresh importation they are not again seen. Others become established and grow so freely that they quite destroy the original occupants of the soil." *J. Douglas.*

Wintering Strawberry Plants in Pots.—The difficulty with many is to know what to do with these during winter till the time for forcing comes round, and it is the practice in some places to stack them up in ridges with the pots on their side packed in ashes or litter; but although this is an improvement on letting them stand out abroad exposed to all weathers, the crowns often suffer greatly by the cold searching winds, and the old leaves have the sap and life totally dried out of them. These are generally looked on as of no account, but I am of opinion that they are of great importance to the plants till young foliage is formed, as they greatly assist root-action, which, without these to set them in motion, must necessarily remain in abeyance. This being the case the aim should be to preserve as many as possible, and in no place can this better be done than by standing the pots in any spare cold frame or pit on a hard coal-ash floor up near the glass, where they can get an abundance of air without being exposed to the action of frost. Although the Strawberry is one of the most hardy and enduring of plants outdoors, in pots under artificial treatment they often become much injured, as the roots then are differently circumstanced to what they are when buried deep in a bed or border, where it takes a long continuance of sharp weather for frost to penetrate sufficiently deep to get at them. Grown in pots the roots are mostly outside the ball, where they feel its effects immediately, and being gorged with moisture are soon ice-bound, bruised, and ruptured from the expansion that must necessarily take place under such circumstances. The thing with them, as with all other plants at this season that are not growing actively, is to keep the soil in that happy medium condition neither too wet nor too dry, as all that is required is that the crowns be maintained fresh and plump till the time arrives for them to be started. If wintered out without the protection of glass, and they have to be covered with straw or shutters, it should be borne in mind that light is almost as essential to them now as later on, and therefore they should have all the exposure to its influence that the state of the weather will permit. Next to cold damp frames the back shelves of any cool airy houses is the best place to store them, but in situations of this kind they require frequent looking over on account of the rapidity with which the soil parts with its moisture. *J. S.*

Eucalyptus globulus.—In reference to the hardiness of the above, I may mention that two trees were planted here in the autumn of 1876, and for the sake of experiment they were planted on either side of a lake, east and west—that on the east some 20 yards from the water, in a deep sandy loam, which was originally thrown from a ditch beside which it is planted; that on the west is 10 yards from the lake, with a soil similar and a gravelly subsoil. In each case they have made rapid growth, the latter having stronger and shorter jointed shoots than the former: this has shoots of a spiral character, and has assumed the shape of a handsome pyramid. In each case they are about 15 feet high, and have sustained no injury from the past two winters. What effect the ensuing winter may have on them remains to be proved. I may point out to intending planters that they carry much wind, and require to be securely staked. *J. J. Brenchley, Nevenham Paddox Gardens, Lutterworth, Nov. 27.*

Cauliflowers.—I have read with interest the reports from different quarters on Cauliflowers. That Cauliflowers in general this season have been inferior there is no doubt. I think the season has had much to do with it, and it would be a pity to attach any fault to our enterprising seed growers, at least until we have had another season's trial. In certain localities it seems Cauliflowers have never been better than they have been this year, and some writers attribute their success to their giving them due attention from the time the plants are fit to handle, by pricking them out, and afterwards carefully planting them in their permanent quarters, in such a manner that they never know they have passed through so many changes, which is a very sound practical method. But I would not like to say the nonpractice of this method has been the cause of the failures of the past season, as I certainly adopted it to the letter in the case of my last planting, the plants being transferred to their permanent quarters July 18, and during the then hot weather they were never allowed to flag a leaf, and the result has been, I should say, two-thirds came in that parted manner which has been complained of. My summer Cauliflowers were much worse. Notwithstanding, I have cut some good heads in the course of the season. *Arch. Mackie, The Gardens, Woodlands, Darlington.*

Autumn Digging.—To some this may appear to be a subject on which very little need be written; but as a believer in the old adage which says "A stitch in time saves nine," I may perhaps be allowed to give a word or two of advice to those who, as a rule, defer this operation till spring. It is highly important that all vacant ground in a kitchen garden should be dug over in the autumn; the results and advantages derived from it are only thoroughly known to those who have it done. In the first place the soil gets well pulverised, myriads of insects are destroyed (*i.e.*, if the winter is severe); we have also the pleasure of seeing the garden look neat and tidy during the dullest months, and last, but not least, we have the great consolation of knowing that the bulk of the winter's work is, so to speak, under our thumb. Much has been said and written of late respecting the failure of various crops. It was only by patience, perseverance, and successive sowings that anything like a crop of some kinds of vegetables was obtained. Carrots and Beet have probably been the worst. Early Peas in some districts were a partial failure, and caused a deal of trouble and anxiety. On the whole, I think we may say that this has been the worst year for kitchen garden crops that we have had for a long time. Can it be accounted for? I am tempted to ask. There are various opinions on the matter. One or two persons I have heard complain about the seed, and talk of dealing with a different firm another year. I have no doubt seedsmen have had a great many letters this season complaining about the quality of their seed and so forth, but is it the seed? I think not. In my own mind I feel firmly convinced that a great many of our failures this year may be attributed to the ground being so full of insects, owing to the several mild winters we have had in succession. Most of the seeds of Carrots and Beet germinated, but were eaten off soon after they did so, and those which made their appearance above-ground were only saved from the ravages of slugs by repeated dustings of lime and soot. For my own part, I should like to see a good old-fashioned winter—a regular stinger, as some people would say—with the thermometer nearly down to zero. I believe it would do an immense deal of good. Should this winter prove to be a sharp one I venture to say there will be fewer complaints next year about the failure of Carrots, &c. *J. H., Heytesbury Gardens, Wilts.*

Elm Roots in Wall Borders.—I was much interested in the statement of your correspondent, Mr. J. Shand, at p. 660, on the choking of his drainpipes by the growth of Elm roots. My experience of the rapidity with which their thread-like fibres increase and thus travel in search of nourishment is somewhat analogous. A few years since at considerable labour and care we prepared here a border for wall trees, about 40 yards in length and 3 yards in width, the major part of the soil was the top spit of an old lawn. After planting for three or four years the growth of the trees was remarkably favourable to the production of healthy and vigorous wood. After that period there were signs of a decrease in their quality, and although they flowered profusely yet there was an absence of size in the fruit, and they dropped prematurely. I was certain there were some counteracting agency at work, of which I was then ignorant. I solicited the opinion of my brother craftsmen who visited me: alas! none judged the evil although it confronted them. After some consideration I began to suspect the cause. At one end of the border is a noble Elm which at a rough guess has outlived some three or four generations of the human family. Now in forming the border I had taken the precaution to have a 9-inch wall built the depth of the border, so as to shut out its roots, but as if by instinct they had travelled some distance along the border near to the base of the fruit tree, where manure has been added. I have discovered masses of rootlets completely interwoven into each other, thus absorbing the moisture which should have benefitted the trees: quantities I have removed in digging, yet they are again renewed. No doubt the disturbing of so much soil near to the Elm has been of the utmost benefit to its health, for we have also a kitchen garden in proximity to it, and though the soil is turned over three or four times a year, yet the crops in that particular spot, especially during warm weather, afford visible evidence of their presence, to say nothing of the overshadowing by its huge branches. *J. F. McElroy, Gr. to A. J. Lewis, Esq., Moray Lodge, Campden Hill, Kensington, W.*

Vanda *v.* Anguloa.—Mr. Mitchell, I see, takes exception to the remarks I made about the Vanda suavis, exhibited from Dr. Ainsworth's collection at Manchester. He says it is surprising that I should write of Mr. Wrigley's Anguloa Clowesii as a triumph of cultural skill, and that I was not able to judge the plants in October. Well, then, I will give the words of the *Gardeners' Chronicle* report. It is this:—"Anguloa Clowesii, a noble specimen; the plant was fully 3 feet across the base, where there were nearly fifty of its rich golden cups, surmounted by a bold crown of perfectly developed leaves; the plant a picture of health and freshness, and magnicently bloomed." The same reporter says of the "Vanda suavis, 5 feet by 4, with fourteen flower-spikes; a well-furnished healthy specimen." Certainly any one but Mr. Mitchell reading the above would say that the reporter thought the Anguloa was the greatest triumph of cultural skill. Does Mr. Mitchell really believe that a person cannot judge of the condition of an Orchid unless it is in flower? I assure him he does not improve his position by making such a statement. I am able to say that the Anguloa is now in better condition, if that can be possible, than it was last June; the pseudobulbs formed this year are larger, and I will predict that the number of flowers next year will be increased by a dozen. If it is unfair to class the cultivation of an Anguloa with a Vanda, then it would be also unfair to place the one in competition with the other at a flower show, which would be absurd. Mr. Mitchell further says that the majority of the best practical Orchid growers in this country said that the decision was decidedly wrong. I think it would have been better had he not made that statement, for this reason: that I saw many Orchid growers in the North, and not one who expressed an opinion gave it in favour of the Vanda. When an exhibitor is so ill-advised as to air his grievances, he will always find people who will assent to what he says merely to spare his feelings. Perhaps they were the same persons who told him that five of Dr. Ainsworth's Orchids "were a long way before the Anguloa." Cannot Mr. Mitchell see that if this had been the case Dr. Ainsworth's Orchids would have been 1st in the collections, and not Mr. Wrigley's? At last he says the main ground of complaint is that the judges were incompetent. The answer to this is that he is not the proper person to make this charge when his own exhibits are in question. Let him get only one of the great Orchid growers to do it for him—it would look better. *J. Douglas.* [We can insert no more on this subject. EDS.]

Maréchal Niel Rose on the Borders.—In the Border county of Roxburgh this fine Rose grows with a luxuriance seldom witnessed so far North, and in favourable spots it is to be seen flowering with surprising profusion in the summer months, especially in such a fine season as the past has been in the Border counties. In the parish of Sitchel, in the northern part of the county, and at an altitude of about 600 feet above the sea-level, this Rose is a favourite with farmers and cottagers for training up the front of their houses, where it always grows freely, and in good seasons many of the plants flower well, producing full-shaped and highly-coloured flowers. Again, in the more favoured valley of the Jed, especially about Nesbit, it is commonly seen growing and flowering to perfection on the southern aspects of dwellings; and in other more out-of-the-way parts of the county it is sometimes met with in an uncommonly vigorous condition. A notable instance of this is to be seen on the farm of Gateshaw, situated on the Kale Water, on the northern slope of the Cheviots, and at least 500 feet above the level of the sea. Here the enterprising tenant, Mr. Robson, has a splendid Maréchal Niel trained upon the west aspect of the farmhouse, where it grows with great vigour, and flowered profusely during the past summer. The blooms were large and well developed, and of a beautifully rich golden colour, surpassing in this point the flowers usually seen lower down in the district. The rich, loamy, fertile soil of many parts of this county is peculiarly favourable for the culture of fruit trees, especially Apples and Pears, and where this occurs we naturally expect to find Roses doing well, and such is the case here; but that Maréchal Niel thrives and flowers well at such a high altitude is a fact not generally known out of the district. *M. D.*

Apricot Culture.—In making an Apricot border (see p. 697) your correspondent would do well in making his border to take the bad or old soil out to a depth of 2 feet, and fill it up with good rich turfy loam, no dung—I should say without adding any clay: I would prefer giving water when it is needed. The trees would stand the winter better in the drier soil, and the branches would be less likely to die off. A remedy for canker in Apricot trees, and branches dying off piecemeal, especially in cold heavy soils, is difficult to prescribe. I have made notes of several fine healthy trees, I may mention two close at hand. They are growing directly at the back of two fireplaces, rather under the level of the ground, where the trees are planted, no branches of these trees have ever died off, and they generally bear enormous crops of Apricots. I have known them for thirty years. This

will show clearly that warmth and dryness in winter is what is wanted to keep the Apricot in a healthy condition; a warm flue at the bottom of the wall would answer the purpose. I have saved cankered branches many times, by cutting the diseased bark clean out, and tying the plant carefully up in cotton wadding, to exclude the air. A very bad case happened here to a fine tree that had been planted some six or seven years. The stem became cankered all round, excepting about an inch, which was healthy. The diseased bark was cut clean out, and two narrow strips of healthy bark laid over the bare place, with ends tucked nicely under the bark of the three, and carefully tied up with cotton wadding; in two years afterwards the sore place could not be seen. The tree is now fine and healthy. *William Culverwell, Thorpe Perrow.*

—— It can scarcely be said that natural drainage is so injurious to Apricot trees as your correspondent at p. 697 intimates, for here we have a Moorpark Apricot planted against a wall, and at 3 feet from the surface of the ground a drain runs under it, which is covered over with a concrete of lime 6 inches in thickness, and the remainder of space filled up with fresh fibrous soil. There is a projecting coping of wood over it at the top of the wall, and it is trained fan-form, with the bunches sufficiently wide apart to admit of the young wood being laid in, not crowded but straight, so that light and air may have access to every part of the tree, with a free circulation of sap over the whole of it. This tree has been planted fifteen years, and is quite unimpaired in its branches, and it has never been without a crop of fruit since it was planted. Of course it has the usual protection which wall trees of the same character receive in the cold spring months. *John Caie, Inverary.*

Pears for Late Use.—I am glad to see that the subject of late Pears has been mooted in your columns. I should like to say a word or two in favour of some of our autumn varieties, but will confine myself now to a few of those in use about Christmas and onwards. Winter Nelis in all seasons and situations I have always found good. About Christmas I think it one of the best, but I cannot say as much for Josephine de Malines, which I have had on a wall with an eastern aspect—not worth eating, while Winter Nelis and Ne Plus Meuris have been very good from the same wall. I think Ne Plus Meuris a very fine variety. Easter Beurré must be considered most useful, especially on some soils. I have seen it excellent very late in spring. Beurré Sterckmans I should always plant with late kinds; I have had it very good from a pyramid, but it is delicious from a wall, and very telling in the dessert on account of its colour. And who can say a word against Knight's Monarch—a free bearer, very hardy, and of excellent quality? I will mention one more—Beurré Rance—although not always good, but quite worth planting. If I remember rightly, Mr. Tillyard used to exhibit it in fine condition at some of the Horticultural Society's meetings late in the spring. I am speaking of fifteen years ago or more. It appears, however, not to do well on a south wall, on which I have had very fine specimens, but quite destitute of flavour. *W. Robins, Stoke Park.*

—— Some years ago I made Pears a special study. I grew all the kinds I could get, begged other specimens from my friends and bought of strangers. I kept them till they were ripe, painted them on large sheets of drawing-paper, and placed certain marks and numbers on the drawing to indicate their size, quality, and period of ripening, so that the following remarks and list may be of some use to your correspondent (p. 697) and others. But before I go farther I must state that our garden here is 400 feet above the sea, with little or no shelter, the soil is suitable but the situation rather bleak for some kinds. I mention this to encourage those much farther north that they may depend upon my test, and I would remark that the early Pears should always be planted as standards, keeping the walls for mid-season and late kinds. In July we have the Doyenné d'Eté and Citron de Carmes, both nice little fruits. August brings us the Lammas, Summer Rose, Windsor, and Jargonelle; September, Williams' Bon Chrétien, Beurré Giffard, Summer Thorn, and Beurré d'Amanlis; the latter is a grand Pear, a fine bearer, and of excellent flavour. But now we must look after October kinds, and they are numerous and good, beginning with that sweet little Pear from America, such a favourite with the ladies—I mean the Seckle, Brockworth Park, Dunmore, Swan's Egg, Beurré Bosc, Louise Bonne of Jersey, Marie Louise, and Gansel's Bergamot; but the two latter are best on a west wall; and so are all the Pears for November, which are Thompson's, Passe Colmar, Van Mons Léon Leclerc, Beurré Clairgeau, Napoléon, and Beurré Diel. Now we come to the late kinds, about which your correspondent inquires: these we grow on the south walls, and they were planted there for the following reason. Some thirty years ago the kitchen garden here was completely surrounded with Fir trees, many of the branches of which reached 1 or 2 feet over the walls; the result was that Peaches were as plentiful as Blackberries, and grown by bushels. A change came, more ground was wanted for kitchen garden; what so simple as to fell the Fir trees, and plant the ground with vegetables. But alas! alas! the day the Fir trees were gone the Peaches went back in growth and productiveness, blister came in the leaves, gum on the branches, till the old trees died. A new border and young trees, cried my predecessor, but still they prospered not; a good drain to the border, said I; but still the trees were, like the woman's baby, "obstinate and would not grow." I reasoned the thing over with myself, and soon saw it was want of shelter. A belt of Pines was soon planted round the whole cultivated ground, the Peaches were grubbed, and their places filled with late Pears, which do well and hardly ever miss a crop. I will arrange them as nearly as I can in their order of ripening; they usually last three months, and they are twelve in number:—Doyenné du Comice, Glou Morceau, Ne Plus Meuris, Winter Nelis, Victoria (Huyshe), Jean de Witte, Bezi Vaet, Knight's Monarch, Bergamotte d'Esperen, Joséphine de Malines, Van de Weyer Bates, and Bezi Mai. Easter Beurré, Beurré Rance, March Bergamot, and Chaumontel don't do well with us. Prince Albert, Vicar of Winkfield, and Winter Crassane I will never plant again. On the piers of the kitchen garden wall I have planted a lot of the very prettiest Pears I could get. They are grafted on the Quince stock, and fruit splendidly. They are such kinds as Forelle, Beurré Clairgeau, Louise Bonne of Jersey, Beurré d'Amanlis Panachée, Beurré Capiaumont, &c. They are exceedingly pretty, and great favourites with most people. Large kinds of Pears, generally speaking, should not be planted as standards; the wind is apt to shake them off before ripe, and they bruise in the fall. Standard Pear trees or any other standard trees should never be planted in the kitchen garden; they spoil the ground for cropping, and interfere with the proper cultivation of the soil. I know many more kinds, but these do well here, and the list may be useful to intending planters. *J. Rust, Eridge Castle, Tunbridge Wells.*

Masdevallia tovarensis. — This lovely Masdevallia may just now be seen in perfection with — Bocket, Esq., The Hall, Stamford Hill. There are eight plants in bloom, the largest of which has thirty-two spikes of its pure white flowers, borne in pairs and trios; one smaller plant has, amongst others, a peduncle bearing four fully developed flowers! Is not this a rare occurrence? *G. W.*

Arbutus procera.—A writer in your paper of last week stated that he was not aware if Arbutus procera or Menziesii, as he also called it, had ever fruited in this country, but as it is rather tender he should doubt it. I may say that there is a magnificent shrub of the above-named plant in the beautiful pleasure-grounds of Singleton, Swansea, upwards of 11 feet high, which about the year 1868 or 1869 (I cannot say now the exact year) was covered with beautiful bunches of fruit, resembling bunches of Grapes, of a brilliant orange-scarlet colour. It was a magnificent sight, and I remember assisting my old friend, John Williams, in netting the plant to protect the fruit from the birds, and after a time in gathering the fruit, which I believe was sent to the Messrs. James Veitch & Sons, who, no doubt, would have a large stock from it, for we sowed some ourselves, and had a great quantity of seedlings. Perhaps Mr. James Harris, the efficient head-gardener at Singleton, would say if it has fruited of late years. *J. C., Reading.*

Angræcum sesquipedale.—There is nothing unusual perhaps in having three flowers on one peduncle of Angræcum sesquipedale, as we have here just now on a small plant; but what I wish to notice is the remarkable manner of opening its flowers—namely, the last formed opens first, that is to say, of the three flowers the end one on the peduncle has been fully open for a week or more, while the others are only just now expanding. I noticed this peculiarity last year and the year before, and seems to be quite its own. The end flower last year turned yellow ere the one nearest the plant was open fully. Another peculiarity is that the flower furthest away is the largest, while they diminish in size to the one nearest the plant. The tails also are longer and more vigorous in the same manner. In Cypripedium caudatum roseum we have had three flowers on one peduncle, and we have had two on Anguloa Clowesii, and they are common on Cypripedium insigne, but in all these instances and others the flowers nearest the plant always open first. Will Orchid growers please take note of this and give examples. The Angræcum sesquipedale is, moreover, a very magnificent Orchid, and striking and effective to everybody who sees and appreciates plants. *H. Knight, Floors, Kelso.*

Japanese Chrysanthemum M. Crousse. — I am surprised that "R. D." should only have seen a reproduction of Hero of Magdala in the variety recently certificated as M. Crousse. They are perfectly distinct. The colours are not alike, neither are the petals, while in the twist of the petals they are very dissimilar. I enclose with this a flower of the Hero of Magdala, which will represent to you the reflexed part of this variety as much as any I have met with this season, and you will at once be able to perdeive that Hero of Magdala has a much broader and flatter petal than M. Crousse, and in a young flower the petals are produced erect, but with age, as in the flower enclosed, they are bent over (inwards) and show the underside in a kind of incurve after the manner of Peter the Great. In M. Crousse the petals, in a young state, quite fall back over (after the manner of Fulgore or Triomphe du Nord), exhibiting a little tuft or crown of golden shorter petals in the centre of the flower, which renders it very handsome and attractive. When I first saw this variety, nearly two months since, in Messrs. Jackson & Son's collection, I noted it as a coral-red flower, compact and good. M. Crousse will be found a much brighter red in colour than Hero of Magdala, and the peculiar twist which it exhibits when aged is from right to left in a kind of whorl, reminding one of the sea Anemones, or some other zoophyte. M. Crousse is, as "R. D." suggests, a Continental introduction, and to the Continent we shall be indebted for many varieties, which will be found far in advance of existing ones in this rapidly-growing and popular section of the Chrysanthemum. *J. W. Moorman, Coombe Bank, Kingston-on-Thames.*

Keeping Grapes.—I am anxious to get the opinion of some of your readers as to the best time to cut Grapes for keeping. My own experience is that when required to be kept as long as possible they should be cut in November, with a portion of the foliage attached, if thoroughly finished by that time. I have cut them on November 12, and put them into champagne bottles filled with water and about a dozen pieces of charcoal, and suspended them in a dry room, and they have been as fresh at the end of April as when first cut, while those cut after the decay of the foliage have not kept so well. I know it is the practice of some to strip off the leaves, and others to cut to a joint beyond the bunch—but how do they keep? and for how long? It may be argued that the leaves will cause a dampness, but it has not been so with mine, the foliage lasting longer when cut with the lateral than on the Vine. The varieties tried were Black Hamburgh, West's St. Peter's, Gros Guillaume, Lady Downe's, White Lady Downe's, and Mrs. Pince's Black Muscat. The White Lady Downe's does not appear to be known or tried much; it is a great acquisition, and has as good keeping qualities as the black. *M. M. P.*

The Planting Season.—The remarks you make on planting quite coincide with my experience, as I have always found that the earlier this important operation can be carried out the better do all kinds of trees and shrubs succeed. Deciduous plants that have no leaves to maintain may grow if removed late, but there is always a vast difference in any moved after the turn of the year and those transplanted in November, which is the proper time for the work, as the roots they then form are sufficient to keep the bark and buds plump and carry them safely through the scathing cold winds of winter. The two best months for transplanting evergreens are those of September and April, but I prefer the latter, as then genial showers and night dews come to our aid and all vegetation is on the move, whereas during September and October the air and land are sometimes very hot and dry, which causes the plants to flag severely unless they can receive an unusual amount of attention. In spring they seem scarcely to feel the change, and there are many things that cannot be moved till then without great risk, among which are Hollies, Arbutus, and Berberis, the latter being very ticklish subjects indeed. Box, Aucubas, Rhododendrons, and such-like are not so particular, as a large ball of earth can always be had with them, and their natural habit is to produce plenty of fibrous roots, which feed near home. Of course much depends on the preparation plants have to fit them for lifting, as has also soil and situation, whether bleak or otherwise; and with these exceptions the old saying you quote applies with much truth. *J. S.*

Reports of Societies.

Birmingham and Midland Counties Chrysanthemum, Fruit, and Flower Exhibition: *Nov. 27 and 28.*—This was the eighteenth annual exhibition of this Society, and it was generally acknowledged to be one of the best ever held, particularly was it a most marked advance upon that held last year. The exhibits were arranged as usual in the spacious Town Hall, and though the utmost space of the ground-floor had been utilised to the fullest possible extent by means of broad stages down the centre of the hall and the sides, the main and side galleries

had their occupants also, and indeed all parts of the building glowed with colour and vegetable life. The charming arrangement of the broad central stage reflected great credit on the stewards. Last year, owing mainly to the bad weather, the Society suffered a pecuniary loss; this year, though the evening of the 27th was wet, the takings at the doors were highly satisfactory, and it is to be hoped the financial results will enable the committee to carry out in April next a long-cherished design—the holding of a spring exhibition also.

The specimen Chrysanthemums were much finer than those produced last year. The best nine plants came from T. W. Webley, Esq., Selly Park (Mr. W. H. Dyer, gr.), good, well grown, finely bloomed plants, but rather severely trained, consisting of Bronze Jardin des Plantes, Mrs. Dixon, Baron Beust, Mr. George Glenny, Prince Alfred, Lady Hardinge, John Salter, Mrs. George Rundle, and Lord Derby. Some of the flowers were extremely fine, and the plants averaged from forty to sixty blooms. L. Hayman, Esq., Elvetham Road (Mr. George Newall, gr.), came 2d with some good plants, lacking the evenness in size and general good finish of the former, but some remarkably good. In the class for six varieties there was a very spirited competition, two extra prizes being awarded in this class. The best—a finely bloomed lot—came from J. Fenton, Esq., Yardley (Mr. F. Denning, gr.); 2d, W. M. Milward, Esq., Calthorpe Road (Mr. J. Crook, gr). The best three specimens came from L. Hayman, Esq., and the best single specimen from J. Fenton, Esq.—a grand plant of Mrs. Dixon, superbly bloomed.

There was but one exhibitor of nine Pompon Chrysanthemums, and it may be remarked that the large-flowered varieties are better grown, with an exception or two. This group came from L. Hayman, Esq., and consisted of Mdlle. Marthe, Salaman, St. Michael, Model, Bob, Rose Trevenna, and the white, lilac, and yellow forms of Cedo Nulli. T. W. Webley, Esq., had the best six, very well grown and flowered plants. The best three varieties also came from T. W. Webley, Esq., and consisted of Rose Trevenna, and the white and golden Cedo Nulli; F. Oster, Esq. (George Stacey, gr.), being 2d. The best specimen Pompon was St. Michael, from L. Hayman, Esq., a variety remarkably well grown in this locality, well furnished with foliage and finely flowered. W. M. Millward, Esq., came next with white Cedo Nulli, and an extra prize was awarded to T. W. Webley, Esq., for St. Michael. In the class for one specimen Japanese Chrysanthemum, somewhat poor plants of Elaine were staged.

The Chinese Primulas shared with the specimen Chrysanthemums the honour of being the leading feature of the show. They were not only numerous, but very fine, being mostly large and well-grown plants in 32-size pots, and yet it was said they were not nearly so fine as last year. Primulas make most effective gaslight plants, their colours came out well at night, and so did the Poinsettias; but while such dark-flowered Chrysanthemums as Lord Derby, Prince of Wales, &c., lost all their colour by night, the white and yellow Chrysanthemums were most striking, especially the fine golden Pompon St. Michael. In the class for twelve Chinese Primulas that renowned raiser and grower, Mr. J. Tomkins, Sparkhill Nursery, Birmingham, staged plants remarkable for their stocky robust habit of growth and splendid flowers, being of great size and handsomely fringed; some of the dark colours were very fine. There came also classes for six plants, open to nurserymen, and also twelve and six open to gentlemen's gardeners—also classes for double flowered varieties, but the single forms had decidedly the best of it as exhibition plants. There was also a special class for twelve Primulas, the prizes being offered by Mr. T. B. Thomson, seedsman, Birmingham, and here J. Fenton, Esq., staged probably the best lot in the hall, showing that Birmingham takes high rank for Primula growing, and that the effort put forth by Mr. J. Tomkins and others to improve the Chinese Primrose is meeting with great success. Mr. Tomkins' fine varieties, Marquis of Lorne and Princess Louise, were finely shown, and he was awarded a Certificate of Merit for a rich coloured variety named Brilliant, of superb quality. Mr. B. S. Williams' new variety, Coccinea, was also capitally shown.

Other plants comprised Epacris, Poinsettias, Epiphyllums, Cyclamens, Begonias, represented by the winter flowering varieties; Mignonette, &c., and there were special prizes by Messrs. Felton & Sons, for berried Solanums and Bouvardias; also for Roman Hyacinths, stove and greenhouse plants in flower, &c. These groups of plants came in very useful for furnishing the main gallery, and included Abutilon Boule de Niege, Bouvardias, Chorozema, Azalea mollis, Eupatorium, Epiphyllum, &c. The best group of nine miscellaneous plants came from T. W. Webley, Esq., and very charming they were, being made up of Crotons, Dracænas, &c., all well grown and coloured. Mr. R. H. Vertegans, Chad Valley Nursery, Edgbaston, set up a group of flowering and foliage plants that made a charming display—the Tuberoses, Paper-white Narcissus, and others attracting much attention. Messrs. H. Pope & Sons were awarded a Certificate of Merit for the new Solanum Empress, in excellent character.

The best eighteen blooms of Chrysanthemums came from A. A. Everitt, Esq. (J. W. Silver, gr.), and they were generally of great size and fine finish. Particularly noticeable were Fingal, Queen of England, Prince Alfred, Guernsey Nugget, Mrs. Keale, Hereward, Isabella Bott, Cherub, Empress of India, Lady Hardinge, Boadicea, Prince of Wales, Mr. Gladstone, a fine variety of a golden-bronze colour; Lady Talfourd, and Mrs. Haliburton; 2d, Mr. G. Walters. Mr. Everitt was also 1st with twelve blooms, staging varieties similar to the foregoing. The prizes for the best twelve blooms for growers residing within three miles of Stephenson Place was an interesting one, as showing what could be done amid the smoke of Birmingham. Mr. H. Hawkins was 1st and Mr. F. Osler 2d, the former staging some good blooms of John Salter, Empress of India, Bronze Jardin des Plantes, Lady Hardinge, Golden and White Beverley, Lord Derby, Prince Alfred, Lady Slade, Blonde Beauty, Lady Talfourd, and Bronze Jardin des Plantes. Prizes were also offered for Camellias, bouquets, memorial wreaths in flowers, button-holes, wreaths for ladies' hair, &c., and all greatly helped the show and were interesting to visitors.

Mr. H. Cannell, Swanley, Kent, sent a large and valuable collection of cut Zonal Pelargoniums, that seemed to astonish the visitors by reason of their great size and rich colouring; and Mrs. E. H. Hodgkins, of 35, Hyde Grove, Manchester, had a large and most interesting group of skeleton leaves and flowers that were much admired.

A very interesting and attractive show of fruit was provided. The best collection of six dishes came from H. St. Vincent Ames, Esq., Bristol (Mr. W. Bannister, gr.), and consisted of Lady Downe's and white Muscat Grapes, Marie Louise Pears, Medlars, King of Pippin Apples, and Pomegranates said to have been reared in the open air; 2d, G. A. Everitt, Esq., with some nice fruit. The best four dishes from growers residing within 4 miles of Stephenson Place came from H. Lowe, Esq. (Mr. H. Lea, gr.), and consisted of Lady Downe's Grapes, King of Pippin Apples, Oranges, and Beurré Diel Pears. 2d, F. Osler, Esq., who had Mrs. Pince's Muscat and Foster's Seedling Grapes, Beurré Diel Pears, and Alfriston Apples. The best three bunches of black Grapes were Hamburghs from W. Wynn, Esq., Selly Oak (Mr. A. Sayers, gr.), F. W. Webley, Esq., coming 2d with the same. Mr. Bannister had the best two bunches of Muscats, fine in colour and flavour; F. Osler, Esq., being 2d. Black Alicante was placed 1st in the class for one bunch of black Grapes, and Bowood Muscat in that for one bunch of white Grapes.

Apples were a leading feature, and made an excellent display. The best twelve dishes, six dessert and six culinary, came from H. St. Vincent Ames, Esq., who had of culinary varieties Carlisle Codlin, Reinnette du Canada, Blenheim Pippin, Alfriston, Dumelow's Seedling, and one unnamed; and of dessert kinds Kirk's Golden Reinette, King of Pippins, Court Pendu-plat, Ribston Pippin, Margil and Kentish Pippin. The latter could scarcely have been true to name, and came very near to the Blenheim Pippin, even to the danger of disqualification. 2d, E. P. Shirley, Esq., Eatington Park (Mr. W. Gardener, gr.), who staged a capital lot. Mr. Gardener was 1st with six dishes of Apples, having fine examples of Belle du Bois, Blenheim Orange, Yorkshire Quince, Adams' Pearmain, Wyken Pippin, and Fearn's Pippin; 2d, Mrs. Nelson.

With twelve and six dishes of Pears Mr. Gardener was placed 1st, staging in the former case Beurré Rance, Beurré Diel, Easter Beurré, Doyenné du Comice, Joséphine de Malines, Passe Colmar, Winter Nelis, Crassane, Ne Plus Meuris, Glou Morceau, and d'Amour, a comparatively new French Pear, suitable for stewing. There was no other competitor in this class, but in that for six varieties G. A. Everitt, Esq., was 2d.

The best dish of kitchen Apples was Tower of Glamis, from H. Hawkins, Esq. (Mr. R. Gallier, gr.). The best dish of dessert Apples, Ribston Pippin; the best dish of Pears, Pitmaston Duchess, from the Rev. Canon Evans (Mr. T. Start, gr.)—splendid examples of this fine variety.

Later intelligence shows that the takings at the doors far exceeded that of last year, and have proved sufficient to place the committee's finances on an excellent footing.

Scottish Horticultural Association: *Dec.* 3.—The monthly meeting was held on Tuesday, at 5, St. Andrew's Square, Edinburgh. There was a large attendance of members. The President occupied the chair. After the election and nomination of new members Mr. L. Dow read a paper on the "Kitchen Garden," being the continuation of his former paper on this subject. He again urged upon the attention of young gardeners the great importance attaching to this part of their profession. The operations of the kitchen garden he described in a clear and lucid manner, such as trenching, manuring, and cropping, and detailed his system of cultivating the Cauliflower, Pea, Carrot, and Turnip. The various difficulties attending the Carrot crop on many soils were referred to, and to remove these obstacles in a great measure he approved of deep trenching and deep manuring, a dry bog being the soil best adapted for the growing of this vegetable. Mr. Dow also spoke of the shaws of the Swedish Turnip as being a good substitute for Scealale, and strongly recommended it as being more economically and easily managed. Mr. Robertson Munro next read a paper on "Hardy Spring Flowers," which included most of those flowering from January 1 to May 1. He spoke of the neglect by many gardeners of these beautiful flowers, and said that more time and interest spent upon some of the best kinds would well repay any extra labour given. It was one of the prettiest sights to see some of the rarer gems of this class of plants with their pure colours coming into flower when the ground was coated with snow, and vegetation for the most part lying dormant. The cheery aspect they presented at this dull season was welcome to lovers of the beautiful. Mr. Munro then named the most popular kinds, and explained the treatment of those that required careful and particular cultivation. The following are some of the plants referred to:—Helleborus, of sorts; Snowdrops, Iris reticulata, Cyclamen Coum and varieties; Winter Aconites, Scillas, Sisyrinchum, Leucojum, Hepaticas, Anemones, Myosotis, Crocus, Daisies, Primulas Aubrietias, Saxifragas, Tulips, &c. Messrs. Downie & Laird sent a nice pan for exhibition of the Sibthorpia europæa variegata; Messrs. Dicksons & Co. exhibited two stands of cut blooms of Chrysanthemums, containing sixty three varieties, which included all the favourite kinds; and a fine bloom of Thunbergia laurifolia. Mr. John Webster exhibited a new seedling Apple named Beauty of Moray, a culinary variety, stated to be a free bearer and long keeper.



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, Dec. 4, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 60 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction	Rainfall.
Nov.	In.	In.	°	°	°	°	°	°			In.
28	29.47	−0.24	41.0	38.0	3.0	39.4	− 2.2	37.6	94	NNE.: E.N.E.	0.45
29	29.76	+0.04	38.4	30.2	8.2	34.0	− 7.7	29.6	83	N.: NNW	0.00
30	29.78	+0.06	37.9	28.7	9.2	33.7	− 8.0	30.1	86	NNW.: N.W.	0.00
Dec.											
1	29.57	−0.17	39.8	34.0	5.8	37.3	− 4.4	36.5	97	W.	0.07
2	29.84	+0.10	39.6	33.2	6.4	36.7	− 5.1	34.7	93	E.N.E.: N.E.	0.00
3	29.99	+0.25	39.9	31.9	8.0	36.0	− 5.8	34.0	93	N.N.E.	0.02
4	30.04	+0.28	41.4	33.0	8.4	37.4	− 4.4	34.6	90	E.N.E.: N.E.	0.00
Mean	29.78	+0.05	39.7	32.7	7.0	36.4	− 5.4	33.9	91	variable	sum 0.54

Nov. 28.—Overcast throughout, Dull and very cold. Rain fell before 11.30 A.M., then ceased to 0.45 P.M., after which it fell to 10 P.M.
— 29.—Very fine bright day. Very cold. Partly cloudy. Overcast at night.
— 30.—Fine, but dull and cloudy. Very cold. Fog and hoar-frost in morning.
Dec. 1.—Overcast, dull day. Thin rain fell frequently till 5 P.M. Cold.
— 2.—A dull cold day. Overcast. Little sleet in evening.
— 3.—Overcast, with occasional snow and sleet till 10 A.M. Fine and bright till 3 P.M., overcast after. Little rain in evening.
— 4.—Fine, but dull and cloudy. Very cold. Overcast at night.

LONDON: *Barometer.*—During the week ending Saturday, November 30, in the vicinity of the metropolis the reading of the barometer at the level of the sea decreased from 29.92 inches at the beginning of the week to 29.35 inches by the morning of the 25th, increased to 29.50 inches by noon on the 26th, decreased to 29.31 inches by the evening of the 27th, increased to 30.02 inches by the morning of the 30th, and decreased to 29.98 inches by the end of the week. The mean daily readings were below their averages during the first five days of the week, but

slightly in excess on the other two days; the greatest departures in defect of the average were 0.47 inch on the 25th, and 0.52 inch on the 27th. The mean reading for the week at sea level was 29.62 inches, being 0.47 inch below that of the preceding week and 0.27 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 53½° on the 25th to 38° on the 30th; the mean value for the week was 43½°. The lowest temperatures of the air observed by night varied from 28¾° on the 30th to 41° on the 25th; the mean for the week was 34¼°. The mean daily range of temperature in the week was 9°, the greatest range in the day being 15° on the 24th, and the least 3°, on the 28th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—24th, 43°, + 1°.4; 25th, 47°, + 5°.4; 26th, 39°.2, — 2°.4; 27th, 36°.8, — 4°.8; 28th, 39°.2, — 2°.2; 29th, 34°, — 7°.7; 30th, 33°.7, — 8°. The mean temperature of the air for the week was 39°, being 2°.6 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 78½° on the 29th, and 62° on the 25th; on other days the highest readings were about 45°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 25° on the 29th, and 26½° on the 30th. The mean of the seven lowest readings was 33½°.

Wind.—The direction of the wind was variable, and its strength gentle. The weather during the week (with the exception of Friday, which was fine and bright) was very dull, and the sky generally overcast. Heavy rain fell on the 27th and 28th, and *fog* prevailed on the 30th. On the 29th and 30th the weather was extremely cold.

Rain fell on five days during the week; the amount collected was 1.55 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, November 30, the highest temperatures of the air observed by day were 54° at Truro, 53½° at Blackheath, Plymouth, and Cambridge, 53° at Norwich, and 52¾° at Brighton; the highest temperature of the air at Wolverhampton was 41½°, and at Bradford was 41½°; the mean value from all places was 47½°. The lowest temperatures of the air observed by night were 24° at Hull, 25½° at Nottingham, 26½° at Wolverhampton, and 28° at Sheffield; the lowest temperature of the air at Sunderland was 32°, and at Norwich was 31¾°; the mean value from all places was 29½°. The range of temperature in the week was the greatest at Blackheath, 25°, and the least at Leicester, 11¾°; the mean range of temperature from all stations was 18°.

The mean of the seven high day temperatures was the highest at Truro, 46¾°, and Plymouth 46°; and the lowest at Wolverhampton, 39½°, and Hull, Leicester, and Bradford, all 39¾°; the mean from all stations was 42¼°. The mean of the seven low night temperatures was the lowest at Wolverhampton, 29½, Nottingham, 30¾°, and Hull 31¼°; and the highest at Norwich, 38°, and Truro and Plymouth, both 37½°; the mean from all places was 34°. The mean daily range of temperature in the week was the least at Leicester, 6¼°, and the greatest at Wolverhampton, 10°; the mean daily range from all stations was 8¼°.

The mean temperature of the air for the week from all places was 37¾°, being 3¼° lower than the value for the corresponding week in 1877. The highest were 42° at Truro, 41½° at Plymouth, and 41° at Norwich; and the lowest were 34½° at Wolverhampton, and 35¼° at both Nottingham and Hull.

Rain.—The amounts of rain measured during the week varied from 1.56 inch at Blackheath, 1.48 inch at Sunderland, 1.08 inch at Cambridge, and 1.05 inch at Truro, to 0.26 inch at Liverpool and 0.41 inch at Leeds. The average fall over the country was 0.78 inch.

The weather during the week was cold, very dull, and the sky generally overcast.

Fog prevailed at places on the 30th inst., and snow fell at Wolverhampton on the 24th inst.

SCOTLAND: *Temperature.*—During the week ending Saturday, November 30, the highest temperatures of the air varied from 44° at Aberdeen, to 38½° at Greenock; the mean from all places was 41½°. The lowest temperatures of the air varied from 20° at Perth to 28¾° at Aberdeen and Greenock; the mean value from all stations was 26½°. The mean range of temperature in the week was 25°.

The mean temperature of the air for the week from all places was 35½°, being 3° lower than the value for the corresponding week in 1877. The highest was 37½°, at Aberdeen, and the lowest 34°, both at Greenock and Perth.

Rain.—The falls of rain varied from 1½ inch, at both Edinburgh and Leith, to six-tenths of an inch at both Glasgow and Greenock. The average fall over the country was an inch and one-tenth.

DUBLIN. — The highest temperature of the air was 45½°, the lowest was 25¾°, the range was 19½, the mean was 35¼°, and the fall of rain 0.58 inch.

JAMES GLAISHER.

Obituary.

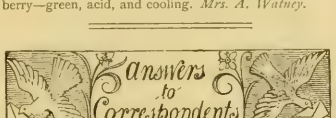
WE regret to announce the death, on November 30, of Mr. WILLIAM SKIRVING, nurseryman and seedsman, of Walton, Liverpool, aged 85 years.

—— We have to record with regret the death of Mr. JOHN WIGHTON, gardener to the Earl of Stafford, at Cossey Park, near Norwich, which took place on the 23d ult. He had just been his usual round to see that all was well for the night, when he was seized with an apoplectic fit, from which he did not recover. Mr. Wighton, who had reached the age of seventy-five years, having been born in 1803, was a very old occasional correspondent of the *Gardeners' Chronicle* and of the *Florist and Pomologist*, and had been gardener at Cossey Park for over half a century, for he tells us in an autobiographical notice of his life, published, with a portrait, in the *Gardeners' Chronicle* for 1877 (N.S. viii., p. 401) that he "leaped from Dalhousie Castle to Cossey Park when he was twenty-four years of age." About two years since he was presented with a purse of money by Lord Stafford as a testimonial of respect for his faithful discharge of duties during the long period he had been in service in his lordship's family.

Enquiries.

He that questioneth much shall learn much.—BACON.

NEW ZEALAND GOOSEBERRY.—Does "W. W." mean the Cicca disticha, often called "the Otaheite Gooseberry?" I can only find the "Barbados" Gooseberry, the "Coromandel," and the "Tahiti" mentioned in any botanical work. The Cicca disticha belongs to a genus of Euphorbiaceæ, and its fruit is very like a Gooseberry—green, acid, and cooling. *Mrs. A. Watney.*



FERNS: *R. P.* We cannot assist you further without some particulars of your mode of treatment.

INSECTS: *C. W. S.* The scale insect on your Cypripedium niveum is the Coccus stellifer, first described and figured in the *Gardeners' Chronicle* a few years since. *J. O. W.*

IS VICAR OF WINKFIELD A KITCHEN PEAR? *George Goldsmith.* Yes, most decidedly; although it may sometimes be used for dessert. The same may be said of Chaumontelle and many others. There are very few better kitchen Pears than Vicar of Winkfield. It stood high in the great competition for stewed Pears at St. James' Hall in 1858. There are some Pears which are fit for no other purpose but cooking, but any Pear unripe may be used for cooking, and as a fact many are so used, although preference may be given to certain sorts. We do not think that the judges had any power to exclude it, as you have stated.

LOCALITY FOR A MARKET GARDEN: *W. C.* We much doubt if land could be bought westward from London, north of the Thames, within the distance named, at a price that would admit of its being worked profitably as a market garden. Northward from London very likely it might, but in this direction the soil is of a very heavy, retentive nature; it will grow most vegetables well, excepting Carrots and Potatos, which latter can more profitably be grown on lighter soil. It requires a great deal of working, and plenty of manure, and on it horse labour would be very much cheaper than manual. Gooseberries, Currants, Raspberries, Apples, Strawberries, and Plums, succeed well on it, the latter two unsurpassed; Pears do not do so well. It is not always that so much as the extent spoken of would be easy to meet with on sale. Within two miles or so of a railway station it might be had at from £100 to £150 per acre; within a mile or less of a station the price would vary from £400 to £1000 per acre, according to the greater or less distance from London. It would be necessary to use care and judgment in the selection, and the district would need to be traversed personally to find a suitable position. In this direction manure could be had laid down at most of the stations at a reasonable rate.

MOORHENS.—Will you kindly tell me whether there is any difference in the size of these birds? Which is the largest, the male or the female? *H. W.* [The male birds are considerably the largest. EDS.]

NAMES OF FRUIT: *John Perkins & Sons.* Your Apple is Alfriston.—*A. Macintosh. Apple:* Carlisle Codlin, true.

NAMES OF PLANTS: *T. Cripps & Son.* The variety serratifolia of Arbutus Andrachne.—*T. M., Wakefield.* 1, Rivina humilis; 2, Gymnostachys Pearcei; 3, Pentas carnea; 4, Lygodium scandens.—*R. Titley.* 1, Liquidambar styraciflua; 2, Cupressus sempervirens; 3 and 4, Juniperus virginiana; 5, Abies Smithiana.—*G. M.* 1, specimen insufficient; 2, Erica colorans; 3, Linosyris vulgaris.—*A. H. J.* 1, Cassia corymbosa; 2, specimen insufficient; 3, Begonia maculata; 4, Begonia Dregei. — *Leonard Kings.* 1, Panicum capillare; 2, Pennisetum villosum; 3, Lagurus ovatus; 4, Aira capillaris.—*W. D.* 1, Lavandula Stæchas; 2, Sternbergia lutea.

REMOVING HOLLIES: *W. B.* The best time to move Hollies is during showery weather in the month of May or September; but it is not of so much importance that it should be done to a week or two at those seasons, as it is to do it when the weather is favourable.

TAR IN PLANT-HOUSES: *A Weekly Subscriber.* To steep in tar wood staging intended to be placed over the hot-water pipes in a range of pits is about the worst thing you can do. The fumes given off would be most injurious to plant life.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED:—John Scott (Yeovil, Somerset), Descriptive Priced Catalogue of Kitchen and Flower Garden and Farm Seeds.—M. Bruant (Boulevard St. Cyprien à Poitiers, Vienna), Catalogue of Trees and Shrubs, Fruit Trees, Conifers, Roses, &c.; also List of Begonias.—A. Van Geert (Gand, Belgium), General Priced Catalogue.—Messrs. Osborn & Sons (Fulham, near London), Catalogue of Hardy Trees and Shrubs.—Otto Putz (50, Great Russell Street, London, W.C.), Annual Trade Seed List.—Richard Dean (Ranelagh Road, Ealing, W.), Catalogue of Spring Flowers, Choice Seeds, and Potatos.—Ewing & Co. (Newmarket Road, Eaton, near Norwich), Catalogue of Roses, Fruit Trees, Trees and Shrubs, &c.—Martin Grashoff (Quedlinburg, Germany), Wholesale Trade Catalogue of Agricultural and Garden Seeds.

COMMUNICATIONS RECEIVED:—R. I. L.—J. D.—M. J. B.—J. G. B.—W. R. W. (thanks).—Fair Play.—A. C.—M. C. C.—An Old Saddle.—W. S.—J. V. & Sons (next week).—O. O.—E. H.—J. W. J.—J. C. & Co.—J. S.—Subscriber (next week).—G. P.—J. D.—H.—D. P.—M. D.—R. M'L.—J. V.—C. B.—J. H.—E. M. J.—A. W.—J. T.—A. T.—J. C. M.—W. T.—A. W.

DIED.—November 30, at his residence, Walton-on-the-Hill, near Liverpool, WILLIAM SKIRVING, aged 85 years.

Markets.

COVENT GARDEN, December 5.

American consignments are still the rule in our market, home goods being confined to small parcels of Wellingtons, Blenheims, and Nobs, prices of the latter being better. Trade quiet. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6–	4 0	Melons, each	1 0–	3 0
Cobs and Filberts, lb.	0 9–	1 0	Oranges, per 100	4 0–	8 0
Grapes, per lb.	2 0–	6 0	Pears, per doz.	3 0–	6 0
Lemons, per 100	3 0–	10 0	Pine-apples, per lb.	2 0–	4 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0–	4 0	Herbs, per bunch	0 2–	0 4
— Jerusalem, bush.	4 0–	..	Horse Radish, p. bun.	4 0–	..
Asparagus, Fr. sprue, per bundle	1 6–	..	Lettuces, Cos, Eng., per score	1 6–	2 6
Beans, French, p. 100	2 0–	..	Mint, green bunch	0 4–	0 6
Beet, per doz.	1 0–	2 0	Onions, young, bun.	0 4–	0 6
Brus. sprouts, bush.	1 6–	2 0	Parsley, per bunch	0 4–	..
Cabbages, per doz.	1 0–	2 0	Radishes, per bunch	0 1–	0 3
Carrots, per bunch	0 4–	0 6	— Spanish, doz.	1 0–	..
Cauliflowers, per doz.	2 0–	3 0	— New Jersey, doz.	2 0–	..
Celery, per bundle	1 6–	2 0	Shallots, per lb	0 6–	..
Chilis, per 100	1 0–	..	Seakale, per punnet	2 6–	..
Cucumbers, each	0 4–	1 6	Sweet Potatos, per lb.	0 6–	..
Endive, Batav. dozen	1 6–	..	Tomatos, per dozen	2 6–	3 0
Garlic, per lb.	0 6–	..	Turnips, p. 12 bunch.	3 0–	..

The Potato market is quiet, and without alteration in prices — Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6–	1 0	Lily of Valley, spray	1 0–	2 0
Arum Lilies, 12 blms.	6 0–	18 0	Mignonette, 12 bun.	6 0–	9 0
Azaleas, 12 sprays	1 6–	3 0	Narcissus, paper-white, 12 sprays	2 0–	6 0
Bouvardias, per bun.	1 0–	4 0	Pelargoniums, 12 spr.	1 0–	3 0
Camellias, per dozen	3 0–	12 0	— zonal, 12 sprays	0 6–	2 0
Carnations, per dozen	1 0–	2 0	Primula, double, per bunch	1 0–	2 0
Cornflower, 12 bun.	6 0–	9 0	Roses (indoor), doz.	1 6–	12 0
Chrysanth., per doz.	1 0–	6 0	— (outdoor), 12 bun.	0 0–	18 0
— per 12 bunches	3 0–	9 0	Stephanotis, 12 sp.	9 0–	18 0
Epiphyllum, 12 blms.	1 0–	3 0	Tropæolum, 12 bun.	2 0–	6 0
Eucharis, per doz.	4 0–	12 0	Tuberoses, per dozen	1 0–	3 0
Gardenias, 12 blms.	4 0–	12 0	Violets, 12 bunches	1 0–	3 0
Heliotropes, 12 sp.	0 0–	1 0			
Hyacin., Rom., 12 sp.	2 0–	4 0			
Jasmine, 12 bunches	6 0–	12 0			

PLANTS IN POTS.

	s. d. s. d.		s. d. s. d.
Arum Lily, or Richardia æthiop., doz.	12 0–24 0	Euonymus, var., doz.	4 0–18 0
Azaleas, per dozen	24 0–60 0	Ferns, in var., p. doz.	4 0–18 0
Begonias, per doz.	6 0–12 0	Ficus elastica, each	2 6–15 0
Bouvardias, per doz.	9 0–24 0	Foliage Plants, various, each	2 0–10 6
Camellias, per dozen	18 0–60 0	Hyacin., Rom., doz.	12 0–18 0
Chrysanth., per doz.	6 0–30 0	Mignonette, per doz.	6 0– 9 0
Cyperus, per dozen	6 0–12 0	Myrtles, per doz.	4 0–12
Dracæna terminalis	30 0–60 0	Palms in variety,	
— viridis, per doz.	18 0–24 0	each	2 6–21 0
Epiphyllum, per doz.	18 0–60 0	Pelargoniums, scarlets, zonal, doz.	6 0–12 0
Erica Caffra, p. doz.	6 0– 9 0	Primulas, per dozen	5 0– 9 0
— gracilis, p. dozen	6 0–12 0	Solanums, ber., doz.	6 0–18 0
— hyemalis, p. doz.	12 0–42 0		

SEEDS.

LONDON: *Dec.* 4.—The seed market was thinly attended to-day, and the business doing was confined to narrow limits. Of new home-grown red seed the supply this week shows some falling off, which is explained by the weather having lately been unfavourable for threshing. As regards American Clover, values on the other side keep remarkably firm; advices from the Western collecting depôts describe the offerings as still on a moderate scale; no accumulation of stock appears to have anywhere taken place—all the seed which has thus far been marketed in the States having been quickly taken either for home consumption or for export. In Trefoil there has lately been more business doing. Alsike, on account of its extreme cheapness and most satisfactory quality, continues to attract attention. There is no material alteration in white Clover seed. With respect to Canary seed, the tendency of currencies favours the seller, but the reverse must be said of Hemp seed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was very quiet, and no material change was reported in prices. Holders were not anxious sellers, and in the absence of business last week's rates were supported. As Christmas approaches dealing is usually seen to fall off, but just now there is scarcely sufficient doing to allow of contraction. Barley was slow of sale, especially inferior malting, of which there was a large supply. Malt was quiet and unchanged. Oats and Maize were dull, and the turn easier in some instances. Beans, peas, and flour were taken off quietly, on former terms.—Trade was dull on Wednesday, and quotations showed little or no change. The supply of Wheat was as before small of English and liberal of foreign, and the market was altogether quiet and featureless. Where there was any pressure to sell, lower prices prevailed. Fine malting barley continued firm, while other kinds were neglected. Malt was quiet, as also were Oats, Maize, and the other classes of produce, and prices were with some difficulty upheld.—Average prices of corn for the week ending November 30:—Wheat, 41*s.* 3*d.*; Barley, 40*s.* 1*d.*; Oats, 21*s.* 3*d.* For the corresponding period last year:—Wheat, 51*s.* 7*d.*; Barley, 44*s.* 2*d.*; Oats, 24*s.* 11*d.*

CATTLE.

At Copenhagen Fields on Monday the favourable weather and better accounts from the dead markets caused a more active demand for beasts. There were over 600 Americans in excellent condition, and making fair prices. The demand for sheep was good; on the average prices were higher. Trade was rather slow for calves. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 4*d.* to 7*s.* 2*d.*; pigs, 4*s.* to 5*s.* 4*d.*—On Thursday there was no fresh feature in the trade. The supplies of beasts and sheep were only moderate, but sufficient for requirements. Prices were about the same as above recorded.

HAY.

The Whitechapel report for Tuesday states that there was a fair supply of fodder, the demand for which was slow at the following rates:—Prime Clover, 100*s.* to 112*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 40*s.* per load.—There was a fair supply on Thursday, but trade was dull except for best hay. Prices were unaltered.—Cumberland Market quotations:—Superior meadow hay, 88*s.* to 94*s.*; inferior, 63*s.* to 75*s.*; superior Clover, 108*s.* to 120*s.*; inferior, 78*s.* to 95*s.*; and straw, 40*s.* to 44*s.* per load.

POTATOS.

The Borough and Spitalfields reports inform us that supplies of Potatos are on a liberal scale, but trade very slow. Kent Regents, 100*s.* to 115*s.* per ton; Essex ditto, 80*s.* to 100*s.*; Champions, 80*s.* to 90*s.*; Scotch Regents, 65*s.* to 95*s.*; flukes, 110*s.* to 135*s.*; Victorias, 110*s.* to 130*s.*—Potatos continue to arrive from abroad on rather a large scale. In the course of last week 63,147 bags were landed from Hamburg, 3292 Rotterdam, 1344 Dunkirk, 4740 bags and 140 tons Antwerp, 350 bags Boulogne, 6261 Ghent, and 1191 Bremen.

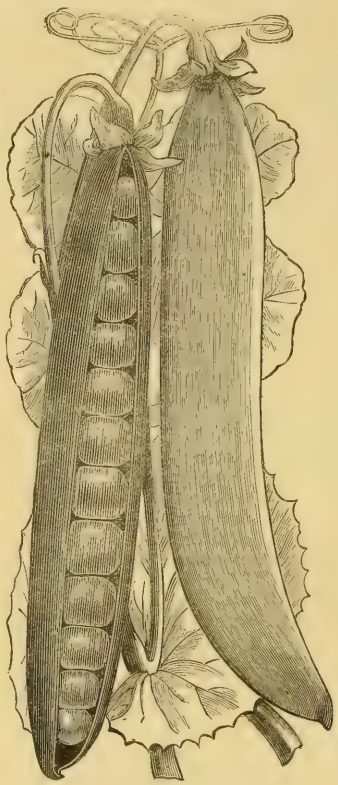
COALS.

In consequence of the cold weather the tone of the market was firm on Monday, but no change occurred in the current value of house coals. A quiet business was done on Wednesday. Quotations:—Bower's West Hartley, 16*s.* 3*d.*; East Wylam, 17*s.* 3*d.*; Walls End—Elliot's, 17*s.* 3*d.*; Easington, 17*s.* 3*d.*; Haswell, 19*s.*; Hetton, 19*s.*; Hetton Lyons, 17*s.* 3*d.*; Lambton, 18*s.* 6*d.*; Original Hartlepool, 19*s.*; Wear, 17*s.* 3*d.*; Tunstall, 17*s.* 3*d.*; East Hartlepool, 18*s.* 9*d.*; Tees, 18*s.* 9*d.*; Salvin's Hetton, 18*s.* 3*d.*; Lambton, 18*s.* 6*d.*; Thornley, 18*s.*

CHARLES SHARPE & Co.

SHARPE'S INVINCIBLE.

New Long-Podded Blue Marrow Pea.



Price, per Quart, 2s. 6d.

Half-pint Packets, free by Post, 1s.

TESTIMONIAL.

Corporation Street, Manchester, Nov. 25, 1878.

"Messrs. CHAS. SHARPE & Co., Sleaford.

"Dear Sirs,—We are in receipt of your offer of New Invincible Marrow Pea, and are pleased to see you offer it at a moderate price.

"You will remember that on inspecting your crops in July last we were very much struck with the crop of this Pea, being perfectly distinct in its character, a great bearer, pods remarkably well filled and good in colour, of average height, robust branching habit, and perfectly free from mildew, from which the parent stock suffers so much. We have not seen any of the new Peas of recent introduction that we are so much pleased with, and hence our order, when inspecting your seed farm at Sleaford, for a supply for the coming season, believing it to be a great acquisition for general crops.

"Yours respectfully,

"DICKSON, BROWN, AND TAIT."

For further testimonials and description see "Gardeners' Chronicle" of Nov. 23, *p.* 671, *and Nov.* 16, *p.* 644.

Trade Price on application.

SLEAFORD.

Send for a PRICE LIST of

BLAKE'S SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Villages, Irrigation, Railway Stations, Mansions, Fountains, Factories.

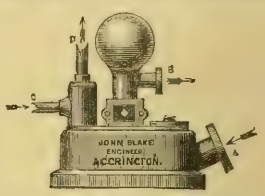
No Cost for Motive Power, which is obtained from the Stream of Water passing through the Rams.

NO OILING OR PACKING REQUIRED.

Made in sizes to raise from 300 to 100,000 Gallons per day.

WILL FORCE TO A HEIGHT OF 1500 FEET.

This advertisement will appear again on Dec. 21.



This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wineham, February* 10, 1877.

"In answer to your enquiry, I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long at the rate of 80,000 gallons per day, although you only promised 50,000."

From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July* 16, 1878.

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug.* 22, 1878.

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq., *Emmott Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (2 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

JOHN BLAKE,
ENGINEER, ACCRINGTON.

A. RIEMSCHNEIDER, Brandenburg-on-Havel, Germany, has to offer :—
HELLEBORUS NIGER, strong roots, 9cs. per 1000.
LILY OF THE VALLEY, German, strong roots, 37s. per 1000.

CAMELLIAS and AZALEAS.—To offer, by Private Sale, 17 Camellias and 10 Azaleas, in named varieties, from 4 feet to 2 feet high; healthy and well set with buds. The property of a customer, and will be sold cheap. Apply to
CLARK, BROTHERS AND CO., Nurserymen, 65, Scotch Street, Carlisle.

GILBERT'S
NEW WHITE-FLESHED MELON
THE "NETTED VICTORY."

MELON "NETTED VICTORY" was honoured with a First-Class Certificate from the Fruit Committee of the Royal Horticultural Society, South Kensington, July 2, 1878, and confirmed November 19, which makes Eight First-Class and Special Certificates awarded to Mr. Gilbert for Melons alone, and the raiser believes "Netted Victory" will exceed all those that have preceded it.

"Netted Victory" is free in its growth, a capital setter, deep in flesh, and of exquisite flavour.

Mr. Gilbert is now sending in Fruit of this variety (November 13), and the flavour at this late season is simply perfect.

The whole of the Stock has been grown from the Fruit which obtained the Certificate. Sent out by

WILLIAM & JAMES BROWN,
NURSERYMEN and SEED MERCHANTS,
56, HIGH STREET, STAMFORD.
Retail price, 2s. 6d. per packet. Trade price on application.

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.
Descriptive and Priced Catalogues for 1878 now ready.
Address—
CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society.—Four-bushel bag (bag included), 1s.; 30 bags (bags included), 20s.; truck free to rail, 25s.
FINLAYSON AND HECTOR, Cocoa-Nut Fibre Works, 24 and 25, Redman's Row, Mile End Road, London, E.

COCOA-NUT FIBRE REFUSE.—Reduced Price :—In 4 bushel bags, bags included, at 1s., or truckload of about 250 bushels, 25s. (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and most of the leading Nurserymen and Gardeners.
3d. per bushel; 100 for 20s.; truck (loose, 250 bush.), 30s.
4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s., or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; 12 for 40s., or 34s. per ton; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. half ton, 26s. per ton; in 1 cwt. bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT MOULD, and LEAF MOULD, 1s. per bushel.
SPHAGNUM MOSS, 3s. 6d. per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth and Paper, Russia Mats, &c.
Write for free PRICE LIST. Goods free to rail.
H. G. SMYTH, 10, Castle Street, Endell Street, Long Acre, W.C.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes. Useful at all seasons. 3d. per bushel, 100 bushels (33 bags) 20s., truckload (loose) 30s., put free on rail; 5s. for one-horse van-load, if fetched from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

Fibrous Peat for Orchids, &c.
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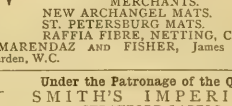
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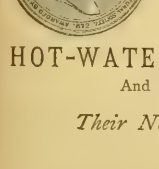
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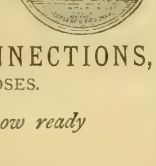
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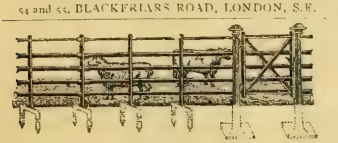
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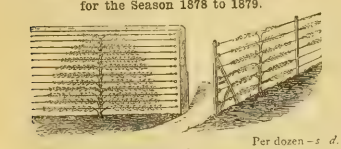
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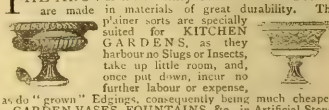
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180	10 ,, 8				
164	10½ ,, 8½	11 3	12 6	14 6	15 6
145	11 ,, 9				
13	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10				
111	13 ,, 10				
103	14 ,, 10				
96	16 ,, 10				
101	13 ,, 11				
94	14 ,, 11				
87	15 ,, 11	11 6	13 6	15 6	15 6
82	16 ,, 11				
92	14 ,, 12				
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	18 ,, 12				
60	20 ,, 12				
65	17 ,, 13				
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14	12 0	14 0	15 9	17 6
48	20 ,, 15				
44	22 ,, 15				
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
42	20 ,, 17				
39	22 ,, 17				
35	24 ,, 17	12 6	14 6	16 6	18 0
30	22 ,, 18				
36	22 ,, 18				
33	24 ,, 18				

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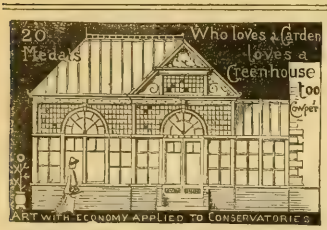
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"CARTER'S TELEPHONE."—An improved selection from Culverwell's "Telegraph," from which it differs in the seeds, being wrinkled, whilst the quality is very superior. Like its parent it is an extraordinary cropper, bearing myriads of immense semi-double pods, full of very large Peas of most exquisite flavour. Highly recommended.

Extract from the "Gardeners' Year Book" for 1879 (edited by Dr. HOGG, F.L.S.):—"'Telephone' Pea (Carter). A green wrinkled marrow, height 5 feet; pods very large and broad; deep green; containing very large Peas. A very handsome Pea. Second early. First-class Certificate Royal Horticultural Society."

Price, in sealed packets, per pint, 2s. 6d.

THE QUEEN'S SEEDSMEN, CARTERS' HIGH HOLBORN, LONDON, W.C.



T. H. P. DENNIS & CO.,
MANSION HOUSE BUILDINGS,
QUEEN VICTORIA STREET, LONDON, E.C.,
CONSERVATORY AND GREENHOUSE BUILDERS,
AND
HOT-WATER ENGINEERS.

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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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IMPORTANT NOTICE TO ADVERTISERS

In consequence of the Christmas holidays, the GARDENERS' CHRONICLE for December 28 will go to Press on Christmas Eve, December 24. All Advertisements for that Number must, therefore, reach the Office by TUESDAY, the 24th inst.

The GARDENERS' CHRONICLE for Saturday, Jan. 4, 1879, will contain a BEAUTIFULLY COLOURED ALMANAC.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE.—SCIENTIFIC, FRUIT, and FLORAL COMMITTEES' MEETINGS, on TUESDAY next, December 17, at 11 o'Clock. GENERAL MEETING for ELECTION of FELLOWS at 3 o'Clock. Admission 1s.

WINTER GARDENS, SOUTHPORT.—The SECOND SPRING FLOWER SHOW will be held on MARCH 20 and 21. Schedules are now ready, and can be obtained by applying to
A. CAMPBELL, F.R.H.S., Curator.

TWELVE NEW GLOXINIAS for 21s., including the grand new novelties shown at Paris Exhibition, small growing Bulbs in 2-inch pots, or dry, free by post; also large-flowering bulbs of fine AMARYLLIS, imported from Peru, 42s. per dozen.
JOHN H. LEY, Royal Nursery, Croydon.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.
ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

STANDARD APPLES, PEARS and PLUMS.—The finest Standard Orchard Trees in England, at
PAUL AND SON'S, The Old Nurseries, Cheshunt.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.
Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to
THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.
Early orders are solicited for the above choice plants. Apply to
THE MANAGER, Calcot Gardens, Reading.

DESCRIPTIVE CATALOGUE of ROSES, FRUIT TREES, DECIDUOUS and EVERGREEN TREES and SHRUBS, RHODODENDRONS, VINES, CLIMBERS, &c. Free by post on application.
H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

Plants for Winter Bedding.
MAURICE YOUNG, Milford Nurseries, near Godalming, Surrey. See also p. 744.

What a Glorious Rose It Is.
See letter, November, 1878, from a gentleman of known taste, in ordering
THE NEW ROSE, QUEEN OF BEDDERS (Noble).
Good Plants are now supplied at 18s. per dozen.
CHARLES NOBLE, Bagshot.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.
THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
CATALOGUES on application.

Standard Tea Roses.
PAUL AND SON have a splendid lot of fine STANDARDS of above, 30s. per dozen. The best way of growing these beautiful Roses.
The Old Nurseries, Cheshunt.

To the Trade.
HENRY MAY offers the finest Standard ROSES, at 70s. per 100.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

Roses—Roses—Roses.
FINE DWARFS on MANETTI, all the leading varieties, 35s. per 100.
WILLIAM IRELAND, Pilton Nurseries, Barnstaple.

Fit for Immediate Working.
ROSA MANETTI and R. MULTIFLORA DE LA GRIFFERAIE, 25s per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Healthy Plants in Pots of
LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
BARR AND SUGDEN, 12, King Street, Covent Garden, W.C.

ROMAN HYACINTHS.—Fine Bulbs, 15s. per 100. Discount to Trade on application
PAUL AND SON, The Old Nurseries, Cheshunt.

GOLD and SILVER HOLLIES.—No better or cheaper in the land, than at
PAUL AND SON'S, The Old Nurseries, Cheshunt.

SPRUCE FIRS for Christmas Trees, well formed, 2 to 3 feet high, 30s. per 100
RICHARD SMITH AND CO., Nurserymen, Worcester.

English Yews—English Yews.
ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8os. per 100; 4 to 4½ feet, 18s. per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.
JOHN PEKKINS AND SON, 52, Market Square, Northampton.

English Yews.
ENGLISH YEWS, 4 to 5 feet, 12s. per dozen, 85s. per 100.
J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.
CATALOGUES on application.
The Lawson Seed and Nursery Company (Limited) Edinburgh.

HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application
CRANSTON AND CO., King's Acre Nurseries, Hereford.

Evergreen Oaks.
EVERGREEN OAKS, all recently transplanted, from 3 to 10 feet, at exceptionally low prices.
J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

Planting Season.
JAMES DICKSON AND SONS beg to draw attention to their very superior and very extensive Stock of hardily-grown and well-rooted TREES and PLANTS of every description. Priced CATALOGUES post-free.
"Newton" Nurseries, Chester.

THREE THOUSAND or FOUR THOUSAND ENGLISH YEWS, 2½ to 4 feet. Want offers in CASH or EXCHANGE for the whole or any portion of the above. Sample sent on receipt of twelve penny postage-stamps. No reasonable offer refused. Address
WALTER J. CHRISTIE, Nurseryman, &c., Leatherhead, Surrey.

WANTED, a quantity of OAK ACORNS, for sowing. State price per bushel to
LITTLE AND BALLANTYNE, Knowefield Nurseries, Carlisle.

HURST AND SON have a small Consignment of RAPHIA, of extra fine quality. Price to the Trade on application
6, Leadenhall Street, E.C.

Seeds for the Trade.
HOOPER'S TRADE CATALOGUE will contain subjects of interest to the Trade, who are solicited to withhold their orders until they have obtained a Copy.
HOOPER AND CO., Covent Garden, London, W.C.

To the Trade.—Strong Bedded Common Plum Stocks.
WM. CUTBUSH AND SON can supply a few thousands of the above, price 35s. per 1000.
Highgate, London, N.; and Barnet Nurseries, Herts.

TO THE TRADE.—VEGETABLE, FLOWER and AGRICULTURAL SEEDS, of sterling quality only. Our own, and other carefully selected Novelties of the season.—SANDER AND CO., Seed Growers, St. Albans.

Lily of the Valley.
WM. CUTBUSH AND SON can supply the true Berlin Lily of the Valley, which is vastly superior for Early Forcing to the ordinary German or Dutch varieties. Single crowns, 10s. per 100; 90s. per 1000. Trade price on application.
Highgate Nurseries, London, N.

LILY OF THE VALLEY.—Strong flowering crowns, 35s per 1000, cash. Apply to
SEEMANN AND GOEPEL, Nurserymen, Wandsbek, Hamburgh.

East Lothian Intermediate Stock.
T. METHVEN AND SONS are glad to say that the seed of the above has been saved this season in fine condition. White, scarlet, purple and white wall-leaved, in packets, 1s., 2s. 6d., and 5s. each.
15, Princes Street, Edinburgh.

TWELVE CAMELLIAS, full of buds, 21s., beautiful plants, 1 to 1½ foot high, all finest sorts, in 5-inch pots. Also AZALEAS, finest sorts, full of buds, same price. Extra sizes of both, remarkably fine, 30s., 42s., and 60s. per dozen. Packages gratis for cash with order.
JOHN H. LEY, Royal Nursery, Croydon.

FOR FORCING.
SPIRÆA JAPONICA, 20s. per 100.
" PALMATA, 25s. per 100.
By 100 or 1000. "An immense stock, finely ripened. Smaller palmatas, for planting, 10s. 6d., 15s., and 20s. per 100. Extra large clumps at moderate prices.
CHARLES NOBLE, Bagshot.

MAIDEN APRICOTS.—2000 Moorpark and other finest sorts, to be sold cheap, to clear land. For price apply to.
EWING AND CO., Norwich.

HAMPTON COURT BLACK HAMBURGH VINE.—Strong fruiting well ripened Canes of this well known Grape, 5s., 7s. 6d., and 10s. 6d. each; Planting Canes, 3s. 6d. each. Also a good stock of most of the best kinds.
T. JACKSON AND SON, Nurseries, Kingston, Surrey.

Vines—Vines—Vines.
J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

BLACK HAMBURGH VINES, and other leading sorts, in Fruiting and Planting Canes. Prices, &c., on application to
F. K. KINGHORN, Nurseries, Richmond, Surrey.

FOR SALE, 2000 stools Victoria RHUBARB, also 2000 Fastolf RASPBERRY Bushes. Apply to JOHN LIVINGSTON, Market Gardener, 51, Holmscroft Street, Greenock, N.B.

SEAKALE, ASPARAGUS and RHUBARB.—Roots for forcing, exceptionally fine. For special quotations apply to
H. THORNTON, 1, Maxwell Road, Fulham, S.W.

TO THE TRADE.—To be Disposed of, BRIERS and NONPARIEL CABBAGE SEED, of good quality. Particulars of
A. BILLIMORE, Florist, &c., Caversham, Oxon.

GRAMPIAN POTATO.—The finest Early Round Potato in cultivation, remarkable chiefly for its productiveness, good quality and symmetry; was shown in most of the collections exhibited at the International and other Potato Shows during the last three years. Prices on application.
WM. SMITH AND SON, Nurserymen and Seedsmen, Aberdeen, N.B.

To the Trade.
SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.
H. AND F. SHARPE, Seed Growers, Wisbech.

Gentlemen's Gardeners, Amateurs, and Others
REQUIRING
GARDEN POTS of best quality, are requested to send their orders to
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List on application.

SALES BY AUCTION.

Auction Mart, Opposite the Bank of England, E.C.

EXTENSIVE CONSIGNMENT of LILIES from Japan, comprising 5000 L. auratum, 200 speciosum rubrum, 200 speciosum album, 1000 Thunbergianum staminosum, 700 longiflorum, and 500 tigrinum flore-pleno, all remarkably fine bulbs; a collection of rare ENGLISH-GROWN LILIES, including splendid bulbs of pardalinum, pyrenaicum, Humboldtii, giganteum, candidum pleno, tigrinum sinensis, elegans Batemanniæ, elegans altaicum, Browniі, and superbum pyramidale; fine imported plants of HARDY ORCHIDS, viz., Cypripedium spectabile, C. acaule, C. arietinum, C. parviflorum, and C. calceolus; Orchis spectabilis, O. foliosa, Bletia Hyacintha, BEGONIAS in sorts, HELLEBORUS, a fine assortment of 200 Standard, Half-standard, and Dwarf ROSES; together with 200 lots of BULBS from Holland, consisting of HYACINTHS, TULIPS, NARCISSUS, and CROCUS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the Mart, on MONDAY NEXT, at half-past 11 o'Clock precisely.

P. AND M. will buy for those who cannot attend.

Catalogues at the Mart, and of the Auctioneers, 98, Gracechurch Street, E.C.

To Seedsmen and Others.

IMPORTANT SALE of 44 bales of Naples Onion Seed, comprising altogether about 2 tons, and consisting of the following varieties:—Rocca, Later White, Red Giant, Early White, Marzajola, and Queen.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr G. V. de Luca (late of 43, Wigmore Street, W.), in consequence of his relinquishing this branch of his business, to SELL by AUCTION, at the Mart, Tokenhouse Yard, near the Bank of England, E.C., on MONDAY, December 16, at 2 o'Clock (unless previously disposed of by private treaty) his entire stock of NAPLES ONION SEED harvested in 1876.

An order to view the Seed, together with samples, may be obtained on application to the Auctioneers and Valuers, 98, Gracechurch Street, E.C.

Willesden, N.W.

PEREMPTORY CLEARANCE SALE.—Land required by the Metropolitan Railway Company for the extension of their Line.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Videon's Nursery, Walm Lane, Willesden, Middlesex, half a mile from the Brondesbury Station, on THURSDAY, December 19, at 2 o'Clock, the whole of the NURSERY STOCK, including Privet, Laurels, Rhododendrons, Beech, and Ornamental Trees; also five GREENHOUSES, with the whole of the Fittings thereto; HOT-WATER PIPING, BOILER, some thousands of BRICKS, and other effects.

On view one week prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers, 98, Gracechurch Street, E.C., and Leytonstone, E.

West Ham and Plaistow, Essex.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL on the Premises, Holmes' Nursery, Portway, West Ham, and McPherson's Nursery, High Street Plaistow, close to Plaistow Station, by order of Mr. Wm. Holmes, on FRIDAY, December 20, at 12 o'Clock punctually, the whole of the well-grown NURSERY STOCK, comprising large quantities of specimen Coniferæ and Evergreens, 500 yards Box Edging thousands of Aucubas of various sizes, 2000 strong Irish Ivies, 6 to 9 feet, in pots; and other MISCELLANEOUS STOCK.

View one week prior to Sale. Catalogues obtained on the Premises; *Eastpost*, Watchfordstreatford; and of the Auctioneers, 91, Gracechurch Street, E.C., and Leytonstone, E.

By Order of the Mortgagees.—Tooting, Surrey, S.W.,

6¼ miles from the Royal Exchange, in the main omnibus route to the City, ¾ of a mile from Tooting Junction, and 1 mile from Balham Station, whence a constant service of trains affords access to London Bridge, Victoria, and Kensington Stations in about 20 minutes.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Mortgagees to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, January 9, at 1 for 2 o'Clock precisely, the very attractive and almost unique FREEHOLD ESTATE, of 5a. or. 25p., or thereabouts, distinguished as "The Nurseries," and known also as "Rollisson's Nurseries," Tooting, Surrey, established upwards of half a century, enjoying a world-wide reputation, and considered to be one of the leading Nurseries in the kingdom. Comprises an excellent detached Residence, containing Drawing and Dining-rooms, five Bedrooms and convenient Offices, also a spacious SEED WAREHOUSE, with capital Office and Store-room over—very large and handsomely designed Conservatory adjoining; the extensive ranges of glass, containing altogether 29,000 feet super. of glass and wood work, and consisting of 26 GREENHOUSES, and several brick-built PITS, the whole in good repair, and heated upon the most approved principles by about 6500 feet of hot-water piping; 10 BOILERS, three of which have been recently fixed, suitable Tanks, Propagating Cases, and all requisite appliances for growing to the greatest perfection every class of Plants; also 5 COTTAGES, PACKING-SHED fitted with Crane, STABLING for 4 Horses, COACH-HOUSE, range of WORKSHOPS and other Outbuildings, the whole being brick-built and most complete in all their arrangements.

The Property has an important frontage of 340 feet to the Highroad leading from London to Croydon and Epsom, and is enclosed in front by a brick wall, 11 feet high (which same boundary extends to some 436 feet on the south side), and by a pair of folding iron gates, through which an excellent view is obtained of the tastefully laid-out grounds, having in the centre an ornamental fountain, from which a natural and unfailing supply of water is obtained for the whole of the premises

NOTE.—Special attention in connection with this Sale is drawn to the following fact: that although to capitalists and builders the Estate, with its important frontage, possesses great attractions for the development of a highly profitable building project, it undoubtedly offers to promoters of companies and others desirious of embarking in a high-class Nurseryman's and Florist's business an unprecedented opportunity —and as a going concern would be likely, under judicious management, to prove a great financial success, especially when it is borne in mind that the purchaser would have the advantage of securing at auction prices, at the Sales announced to take place shortly on the Premises, such stock and utensils as he might require to carry on the business.

Cards to view, together with particulars of Sale, may be obtained of Messrs. GATLIFF AND HOWSE, Solicitors, 8, Finsbury Circus, E.C.; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

PRELIMINARY NOTICE.

In liquidation.—*Re* Wm. Rollisson & Sons.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Trustee to prepare for unreserved SALE by AUCTION the whole of the Stock, comprising one of the most extensive and unique collections of ORCHIDS, STOVE and GREENHOUSE PLANTS ever submitted to public competition. They purpose holding the first Sale on JANUARY 23 next and four following days, further particulars of which will be given in future advertisements.

Auction and Estate Offices, 98, Gracechurch Street, E.C., and Leytonstone, E.

Lilium auratum from Japan, Bulbs from Holland,

and CAMELLIAS and AZALEAS from GHENT.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 18 at half-past 12 o'Clock precisely, several thousand fine Bulbs of LILIUM AURATUM and other Choice LILIES from Japan, in splendid condition; CAMELLIAS, AZALEAS, and PALMS from Ghent, and a consignment of Bulbs from Holland.

On view morning of Sale, and Catalogues had.

Rare Bulbs and Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 19, at half-past 12 o'Clock precisely, 553 species and varieties of rare and choice BULBS and FLOWER ROOTS for the Garden and House culture; among them are 20 species of Crinum, including the rare amabile, angustatum and Mooreanum; the new Freesia aurea, golden-yellow, Leichtlinii refracta alba, 13 species of Hæmanthus, and 13 species of Lachenalia, &c.; several thousand Bulbs of Lilium auratum just arrived from Japan, in splendid condition; Lilium lancifolium album, L. tigrinum flore-pleno, Spiræa japonica; and a consignment of Bulbs and Plants from America, comprising 35 Goodyera pubescens, 100 Lygodium palmatum, 20 Polygonatum giganteum, 50 P. biflorum, 7 plants of Nymphæa odorata var. "delicata," 730 Lilium candense, 40 L. superbum, 36 Sanguinaria canadensis, 150 Erythronium americanum, and 120 strong clumps of Cypripedium spectabile.

On view morning of Sale, and Catalogues had.

Rare Lilies from Japan and Other Parts.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, December 23, at half-past 12 o'Clock precisely, 5000 splendid Bulbs of LILIUM AURATUM, just arrived from Japan in the best possible condition; also 1000 plants of a new PRIMULA from Kashmir, a quantity of Hardy NERINES from Japan, PANCRATIUMS from Mexico, a quantity of extraordinary fine BULBS of various LILIES, also extremely rare imported JAPANESE LILIES, just arrived in splendid condition, including Lilium coridion, L. concolor, L. Catchiine, L. medeoloides.

On view morning of Sale, and Catalogues had.

Brondesbury Park, Willesden Lane, N.W.

Close to the Edgware Road Station, N. L. Railway.

A COLLECTION of CHOICE FERNS, STOVE, SPECIMEN and BEDDING-OUT PLANTS, GARDEN IMPLEMENTS, POULTRY, HAY, USEFUL HOUSEHOLD FURNITURE and EFFECTS.

MESSRS. GARDENER AND SONS will SELL by AUCTION, as above, THIS DAY, at 11 for 12 o'Clock precisely.

May be viewed morning of Sale Catalogues on the Premises, and of Messrs. GARDENER AND SONS, Auctioneers and Surveyors, 42, University Street, London, W.C.

Brooklands, near Manchester.

GREAT CLEARANCE SALE of NURSERY STOCK, covering Thirty Acres, which must positively be sold, in consequence of peremptory notice to quit, with the least possible delay, the ground being required for other purposes, comprising several hundred thousand Shrubs, Evergreens, Conifers; Forest and Ornamental trees, including several thousand of the finest pyramidal specimen Variegated, Fancy and Green Hollies, from 4 to 12 feet high, and 2 to 6 feet through; 80,000 assorted Hollies, 50,000 Coniferæ, including many thousand symmetrically-shaped Conifers, from 3 to 12 feet high; 40,000 Aucubas, 30,000 Rhododendrons, and 20,000 Laurels; together with a first-class General Collection of Nursery Stock, also Greenhouses, Horses, Carts, and the whole of the Working Plant.

MESSRS. ARTINGSTALL AND HIND beg to announce the receipt of peremptory instructions from Mr. John Hockenhull to REALISE by AUCTION, on WEDNESDAYS, THURSDAYS, and SATURDAY, December 11, 12, 14, and 18 and 19, and continued in January next, on the grounds known as Hamnett's Nurseries, which have been established for seventy years, situate in Washway Road, Brooklands, near Manchester, the whole of the NURSERY STOCK, consisting of 30,000 Ornamental trees, Horses, and Effects.

Catalogues are in course of preparation, and will be issued several days prior to each Sale. The whole may be inspected any day prior to the Sale.

For further particulars apply to the Auctioneers, 45, Princes Street, Manchester.

To Nurserymen, Gardeners and Others.

TO LET, NURSERY PREMISES at Edmonton, about 2 acres of Ground, with Glass-Houses and Pits, and convenient Dwelling-house. For particulars apply to

M. MAPLE, 335, Essex Road, N.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 98, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded free by post, on receipt of three penny stamps.

CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

To the Trade.

LONGPOD and WINDSOR BEANS, bright samples, very cheap. Samples and price on application.

C. R. FREEMAN, Seed Grower, Norwich.

HOME GROWN LILIUM AURATUM. —Lovers of Liliums should plant at once really home-grown Bulbs. "Imported Bulbs do die."

CHARLES NOBLE has just harvested this year's crop, and will give prices on application.

Bagshot.—October 12.

SPRUCE FIRS, suitable for Christmas Trees, well furnished, 2½ to 4½ feet high, 25s. per 100.

WILLIAM ROBERTS, Nurseryman, Bridgnorth.

FOR SALE, CHEAP, 60,000 Evergreen, PRIVET, 1½ to 2 feet, fine stuff, 7s. 6d. per 1000; 12,000 do., 6 feet, 12s. per 1000. Dwarf ROSES, 25s. per 100.

W. H. BLAND, The Old Nurseries, Fordham, near Soham.

10,000 Spruce Firs—Christmas Trees.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above, all sizes up to 5 feet high, from 2 to 3 feet, at 10s. per 100, good in colour and well furnished. For particulars apply soon. No charge for packing.

AMERICAN GROWN TUBEROSES.—The undersigned offers Double Tuberoses, first-class Bulbs, packed and free to Liverpool at 4s per 1000, in quantities of not less than 1000.

JOHN SAUL, Washington, D.C.

To the Trade.

WM. SMITH AND SON, SEEDSMEN, Aberdeen, beg to offer their surplus stock of the following POTATOS, viz., Rintoul's Early White and Pink Dons, Ashleaf Kidney and Champion, all carefully selected. Prices on application.

MAIDEN PEACHES.—A few hundred Maiden Peaches, in the following varieties, for sale, viz.,—Noblesse, Royal George, Royal Kensington, Red Magdalene, Téton de Venus, Grosse Mignonne, &c. Price 50s. per 100, packing included.

JOSHUA LE CORNU, High View Nurseries, Jersey.

English Oaks, 10 to 12 feet.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset, has a quantity of above to offer, well rooted, at 20s. per 100.

"What you plant in the old year will grow of itself, but what is planted in the new year you will have to make grow."

Freeman's Superbly Illustrated Chromolithographic

GARDENING GUIDE and SEED CATALOGUE for 1879. For practical purposes and descriptive detail, one of the best Guides to Gardening ever published. Post-free 12 stamps. To be deducted by purchaser when sending order.

C. R. FREEMAN, Economic Seedsman, Norwich.

Standard Tea and Hybrid Perpetual Roses.

GEORGE GRAY AND SON can supply the above, Standards, per dozen 15s., half Standards 13s., our selection, all good sorts.

Also PLUMS, Dwarf-trained, 30s. per dozen.

PEACHES, Dwarf-trained, Walburton's Admirable and Noblesse, 36s. per dozen.

APRICOTS, Moor Park and Breda, 30s. per dozen.

Brox Nursertes, Chertsey, Surrey.

GLADIOLI, DAHLIA, CANNA, ACHIMENES, and other MISCELLANEOUS BULBS.

Our Special CATALOGUE of the above for 1878-79 is Now Ready, and will be handed to all Gardeners and Amateurs, post-free, on application to

Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C.; or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

Important—Important.

SEED POTATOS.—Seedsmen desirous of securing (at remarkably low prices) a genuine and healthy Stock of all the principal English and American varieties, grown from choice and carefully selected Seed, will please send for Special TRADE LIST, post-free on application.

D. BRINKWORTH AND SONS, Seed Potato Growers, Reading, Berks.

FRUIT TREES.—Pyramidal Pears, fruiting trees, 6 to 8 feet, my selection, 18s. per dozen; Currants, Black Naples, fruiting bushes, 16s. per 100; Standard Morello Cherries, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen; Standard Plums, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen; Medlars and Walnuts, bushy heads, 18s. per dozen.

Fruit Tree CATALOGUE gratis.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

To the Trade.—Vines—Vines—Vines.

W. G. CALDWELL AND SONS have still extra strong fruiting Black Hamburgh VINES to offer, excellent stuff, at 15s. 6d. each. Also

AZALEA AMŒNA CALDWELLII, well set with buds, 18s. and 24s. per dozen.

APPLES, Standard, 40s. per 100.

" Pyramid, 60s. per 100, in all leading varieties.

General CATALOGUE of Fruit Trees, Conifers, Roses, &c., post-free on application.

The Nurseries, Knutsford, Cheshire.

Specimen and Half-specimen Ornamental and

VARIEGATED PLANTS.

E. P. DIXON, The Nurseries, Hull, will Sell the following Plants cheap, to make room for young stock. Size and prices on application:—

1 THEOPHRASTA IMPERIALIS.
1 ANANANAS SATIVA VARIEGATA.
2 PANDANUS VEITCHII.
2 COCOS WEDDELLIANA.
2 DÆMONOROPS PLUMOSA.
2 DASYLIRION ACROTRICHE.
2 YUCCA QUADRICOLOR.
2 " STOKESI.
2 " ALOIFOLIA VARIEGATA.
2 VERSCHAFFELTIA MELANOCHÆTES.
1 THRINAX EEEGANS.
2 BOUGANVILLEA GLABRA.

Can also offer in quantity Draccena Cooperii, Draccena Baptistii, Eucharis amazonica, Anthurium Scherzerianum, Bignonia grandiflora, Araucaria excelsa, Azalea Mollis, Kalmia latifolia, Adiantum Capillus-veneris, Adiantum Capillus-veneris magnifica. Size and price on application to

E. P. DIXON, The Nurseries, Hull.

Trees and Shrubs for Public Parks, Cemeteries, &c.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above in great variety and of good sizes, to give immediate effect. Properly grown and well transplanted. Prices very moderate. CATALOGUES free on application.

Still some Good Clumps of

SPIRÆA JAPONICA, for Forcing, at £5 per 1000 (including packing), free at the Steamboat at Ghent only for cash accompanied with the order.
PETER DE COCK AND CO., The White Flower Nursery, Merelbeke, near Ghent, Belgium.

THE PRESTON NURSERY and PLEASURE GARDENS COMPANY (Limited), Farington Hall Nurseries, Ribbleton, Preston.—We beg to offer the following cheap and healthy Plants :—
CROTONS in variety. | DRACÆNAS in variety.
PALMS in variety. | FERNS in variety.
STOVE and GREENHOUSE in variety.
Prices on application to the Manager, WM. TROUGHTON.

To the Trade.

NEW POTATO, "PRIDE of ONTARIO."
H. and F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application.
Seed Growing Establishment, Wisbech.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35s. per 100, packing included for cash.
JAMES HOLDER AND SON, Crown Nurseries, Reading.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

TO THE TRADE.
MANETTI STOCKS, 21s per 1000.
MUSSEL STOCKS, 45s. per 1000.
CRAB STOCKS, 35s. per 1000.
Samples of the above may be had on application to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

To the Trade.

H. and F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

In Liquidation.

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, London.
VINES—VINES—VINES.
Having a very large stock of stout well-grown Vines for Sale, principally Black Hamburghs, these are offered at very moderate prices, viz., Fruiting Canes, 5s. to 10s. 6d. ; Planting, 2s. 6d. to 5s.

To the Trade.

DWARF H.P. ROSES, 30s. per 100, £12 per 1000, best sorts, package included.
H. BENNETT, Manor Farm Nursery, Stapleford, Salisbury.

GIANT LILY of the VALLEY. Extra strong blooming roots, 2s. per dozen, 12s. 6d. per 100, package free.
E. COOLING, Mile Ash Nurseries, Derby.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Conifers.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

ROSES, Standard and Half-Standard, splendid plants, fine straight stems, 75s. per 100.
GENISTA FRAGRANS, fine bushy stuff, in 5½-inch pots, 30s. per 100 ; do., in 4-inch pots, 30s. per 100.
PRIMULAS, double white, fine plants, in bloom, 12s. per doz.
MAIDENHAIR FERNS, fine plants, in 4-inch pots, £4 p. 100.
HEATH AND SON, Nurserymen, Cheltenham.

Three of the Most Beautiful Lilies.

CHARLES NOBLE will send by post, on receipt of 5s. in stamps, three dozen Seeds of LILIUM GIGANTEUM AURATUM and CZOVITSIANUM, with directions to raise your own Lilies instead of importing.
Bagshot.

SPANISH CHESTNUT, ASH, BIRCH and ALDER, stout, well rooted, transplanted. A large quantity to be sold.
Mr. GEO. CHORLEY, Coaster's Nursery, Midhurst.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

To Nurserymen and Planters.

THOUSANDS of FOREST TREES to be sold cheap, comprising Balsam and Black Italian Poplars, Birch, Walnuts, Elms, Sycamores, Acer Negundo, Norway Maples, Limes, Horse Chestnuts, Spruce Firs, all from 8 to 15 feet, straight stems, and well rooted. Apply to
EDWARD MORSE, The Original Nurseries, Epsom.

GRIGOR'S AQUILEGIA GLANDULOSA.—The subscribers have for Sale strong plants of this beautiful Columbine, sent free by post or rail at 2s. per pair, or 9s. per dozen, on receipt of order or stamps of that value.
The Trade supplied per 100 at wholesale rates.
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

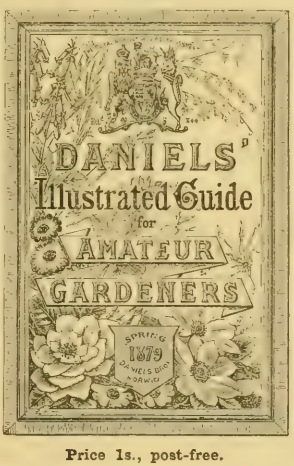
Vines—Vines—Vines.

B. S. WILLIAMS begs to announce that his stock of VINES is this year unusually fine, and comprises all the leading kinds, including "Alnwick Seedling."
For descriptions and prices, see B. S. W.'s BULB CATALOGUE for this year.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

H. McMILLAN has some fine well-grown ORNAMENTAL TREES and SHRUBS to offer, which have all been transplanted within two years. No reasonable offer will be refused, as the ground must be cleared.
Horse CHESTNUT, 9 to 11 inches in circumference at surface of ground, and 14 feet to 16 feet high.
LIMES, 6 inches in circumference at surface of ground, and 14 feet high ; 5 inches, do., and 13 feet high.
Lombardy POPLARS, 20 feet high.
Also some fine BIRCH, MAPLES, Spanish CHESTNUT, New Silver POPLAR, &c.
PYRACANTHA, in 48-pots, 5 feet high, very good.
THUJA AUREA, 10 to 12 feet in circumference.
AUCUBA, 9 to 10 feet in circumference.
Evergreen PRIVET, very bushy.
Irish IVY, in pots and open ground, very fine.
YUCCA RECURVA, fine specimens.
St. James' Road Nursery, Kingston-on-Thames.

FOR SPRING, 1879.

For the Best List
OF
CHOICE KITCHEN GARDEN
AND
FLOWER SEEDS,
SEED POTATOS, &c.,
SEE



Price 1s., post-free.

Gratis to Customers and intending Purchasers.

Should be in the hands of every one having a Garden.

DANIELS BROS.,
Royal Norfolk Seed Establishment,
NORWICH.

WM. L. SKINNER, NURSERYMAN and SEEDSMAN, Silcoates, Wakefield, offers the following, all in fine condition. Prices on application :—
CUCUMBER, Rollisson's Telegraph, true, grown from Rollisson's seed : none else grown.
10,000 SEAKALE, strong.
10,000 ,, 2-yr. seedling.
1,000 CHESTNUT, scarlet, 6 to 8 feet, fine.
10,000 LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.
10,000 AUCUBA JAPONICA, 1 to 2 feet.
5,000 RHODODENDRONS, 1 to 3 feet.
3,000 HOLLIES, green, fine roots, 1 to 3 feet.
1,500 ,, Golden Queen, fine roots, 1 to 2 feet.
10,000 PRIVET, common, 3 to 4 feet.
LAURUS ROTUNDIFOLIA, 4 feet.
,, LATIFOLIA, 3 feet.
,, COLCHICA, 2 feet.
,, COMMON, 2 to 3 feet.
WILLOWS, Weeping, fine heads.
GOOSEBERRIES, strong.
POTATOS, Myatt's Prolific, per ton.
QUICKWOOD, 18 inches to 2 feet.

FIRST-CLASS ROSES.
The finest Standard Roses, 12s. per dozen.
The finest Dwarf Roses, 6s. per dozen.
The finest specimen Roses, for forcing or exhibition, splendid stuff, in 8-inch pots, 30s. per dozen.
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

The Largest Black Grape in Cultivation,

GROS GUILLAUME (ROBERTS' VARIETY).
W. TAIT AND CO. can now supply planting Canes of this wonderful Grape, which is quite distinct from the old Gros Guillaume and Barbarossa. For particulars see *Gardeners' Chronicle*, pp. 632 and 692. The Canes now offered are from eyes taken from Mr. Roberts' parent Vine at Charleville.
Planting Canes, 7s. 6d. each, stronger, 10s. 6d. each.
W. TAIT AND CO., Nurserymen and Seedsmen, Dublin.

Plants, Special.

The present is the best time for planting
HARDY NORTH AMERICAN ORCHIDS, such as Cypripedium, Habenaria, Orchis, &c., in their many species, of which we offer a splendid stock of newly imported plants with strong flowering crowns. Also
DISA GRANDIFLORA, in imported clumps, full of tubers, from 5s. each. This is the most beautiful of terrestrial Orchids, and ought to prove quite hardy in England.
N.B. The North American Orchids, grown as Cool-house Orchids, are most charming ; and as their prices, for flowering plants, range from 2s. 6d. to 3s. 6d. each (and less when more are taken) they are within the reach of everyone.
CATALOGUES post-free on application
THE NEW PLANT AND BULB COMPANY, Colchester.

HARRISON AND SONS, Royal Nurseries, Leicester, have the following stocks, all well-grown and healthy trees ; will be pleased to send sample and quote prices for large or small quantities of any :—
5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 6 inches to 3 feet.
10,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
10,000 large trees for immediate effect, consisting of LIMES, ACACIA, BIRCH, ELM, POPLARS, SYCAMORES, &c.

Cover Planting.

MESSRS. JOHN STANDISH AND CO. have the following Plants to offer, in large quantities, well rooted, suitable for Cover Planting :—
RHODODENDRON PONTICUM, 12 to 18 inches, and very bushy
BERBERIS DARWINII 1½ to 2 feet.
,, AQUIFOLIUM, and others.
LAUREL, common, 2½ to 4 feet.
,, Portugal, 2 to 3 feet.
,, Caucasicum, 2 to 3 feet.
AUCUBAS, and other Plants.
When large quantities are taken a very liberal reduction will be made from the catalogue prices.
Samples and prices on application.
Royal Nurseries, Ascot, Berks.

BULBS—BULBS—BULBS
Just imported.
150,000 Splendid CROCUS, colours separate ; also a large collection of fine mixed English IRIS, 9d. per dozen. Early and Late TULIPS, 1s. per dozen. LILIUMS, from 4d. each. ANEMONES, 1s. per dozen. RANUNCULUS, 1s. per dozen. GLADIOLUS, from 1s. per dozen. SNOWDROPS, 3s. per 100.
TIMOTHY BRIGDEN, F.R.H.S., Importer of Dutch and Cape Bulbs, 52, King William Street, City, E.C., and at the South-Eastern Railway Station, Cannon Street, E.C.

Kent, the Garden of England.

FRUIT TREES TRUE TO NAME.
THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.
THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone ; also at Ashford.

NURSERY STOCK TO BE SOLD, at very low prices, as the ground must be cleared :—
CHESTNUT, Horse, 8 to 10 feet.
ARBOR-VITÆ, American, from 6 to 8 feet.
PINUS AUSTRIACA, 3 to 6 feet.
FIRS, Scotch, 6 to 8 feet.
LIMES, 12 to 14 feet.
MAPLE, Norway, 14 to 16 feet.
BEECH, 6 to 8 feet, and 14 to 16 feet.
BIRCH, 12 to 14 feet.
OAK, English, 6 to 10 feet, &c.
Prices on application, to
HENRY MINCHIN, The Nurseries, Hook Norton, Oxon.

To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to
LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France ; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

To Gardeners and Flower Forcers.

RHODODENDRON NOBLEANUM, from 2 to 3 feet high, and 2½ to 4 feet through, with from thirty to ninety flower-buds each. Compact plants and well furnished.
NOBLEANUM is apparently not so well known in England as it deserves to be ; invaluable where flowers are in demand in Winter and Spring ; forces easily in greenhouse or other warmer structure, and flowers very early out-of-doors. There is probably no other plant, size for size, yields such a bulky return of lively coloured early flowers. These vary from light pink to bright red.
DRUMMOND BROTHERS, Larkfield Nursery, Edinburgh.

New Catalogue.

MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.
It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS, Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS, CHEAP EVERGREENS for COVERS, PLANTS for WINTER BEDDING, CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.
☞ The Nurseries are about one hour by rail from Waterloo Station.
Milford, near Godalming, Surrey.

Plants for Winter Flowering and Decoration.

MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following :—
[per dozen.
AZALEA INDICA, fine plants, and well budded, 24s. to 42s.
BOUVARDIA, in variety, 18s. to 24s. per dozen.
CARNATION, Miss Jolliffe, La Belle, and others, 24s. per doz.
EPACRIS, in variety, 24s. to 30s. per dozen. [per dozen.
ERICA HYEMALIS, fine plants, full of bloom-bud, 15s. to 30s.
LILY OF THE VALLEY, single crowns, 8s. per 100.
PELARGONIUMS, 18s. to 24s. per dozen.
PINK, Lady Blanche, 9s. per dozen.
POINSETTIA PULCHERRIMA, 18s. per dozen.
ROSES, in pots, great variety, 24s. to 42s. per dozen.
SOLANUMS, well berried, 15s. per dozen.
PALMS and DRACÆNAS, 24s. to 42s. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30s. per dozen; besides a large general stock of STOVE and GREENHOUSE PLANTS.
CATALOGUES of which may be had on application.
Royal Nurseries, Ascot, Berks.

QUEEN OF LILIES, LILIUM AURATUM. —Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6d. ; No. 2, 1s. ; No. 3, 1s. 6d. ; No. 4, 2s. each.
ORCHIDS.—Special offer of the following fine Orchids, for 55s. :—1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum giganteum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Lamatodes rosea.
All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to
WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Picotees, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

CHARLES NOBLE, Bagshot, Surrey, in a re-arrangement of his Nursery, finds he has an overstock of the undermentioned, which he will sell at 50 per cent. discount for cash, taken in quantities of 100 or upwards in variety at one time. Sample 100, if desired, sent.
Standard Apples, Pears and Cherries, finest named kinds; Gooseberries, White Currants, and Cob Nuts.

8, 10, and 12 feet high.
Horse Chestnut.
Scarlet Chestnut.
Scarlet Oaks.
" Maple.
" Thorn.
Laburnum.
" Purple.
Lombardy Poplars.
Italian Poplars.
English Elms.
American Elms.
Service Trees.
Sycamore.
" Purple.
Various Heights.
Portugal Laurels.
Common Laurels.
Colchic Laurels.
Mahonia Aquifolia.
Rhododendron ponticum.
" hybrids.
" hybrids, named
Andromeda floribunda.
Kalmia latifolia.
Azalea pontica.
Cupressus Lawsoniana,
Picea Nordmanniana.
Dwarf Roses.
Erica carnea.

SPECIAL OFFERS TO THE TRADE.
MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

HARDY EVERGREENS, thoroughly transplanted and prepared for removal, either in fine specimen trees, or in small stuff suitable for ornamental planting, to be sold privately at a low price to effect a clearance, consisting of Laurel of many varieties, variegated and green Hollies, nearly every variety of Conifer, Rhododendrons, named hybrids and Ponticums, and almost every variety of Evergreen Shrub and Tree; also a fine and select assortment of pyramid and bush Fruit Trees. Apples, Pears, Plums, and Cherries, 12-yr. and 15-yr. old, well transplanted and in full bearing.
Mill Hill Station on the Midland Railway, Harrow Station on the North-Western Railway, and Edgware Station on the Great Northern Railway, are convenient for loading trucks; Edgware Station is quite near for visitors. A previous appointment for visitors is desirable. Address
PROPRIETOR, Whitchurch Gardens, Edgware, London.

In Liquidation

WILLIAM ROLLISSON AND SONS, The Nurseries, Tooting, near London, beg to inform their numerous Customers that the BUSINESS is being CARRIED ON as USUAL, and that they have a fine healthy stock of Orchids, Ferns, Palms, Stove and Greenhouse Plants, Vines, Hardy Herbaceous and Alpine Plants, &c., which they can offer at very moderate prices. CATALOGUES and special offers free by post on application.

RASPBERRY CANES.—For Sale, 150,000 Fastolf, at 17s. per 1000, free on rail. Cheque or reference to a London house required with order.
R. BATH, Crayford.

ASH, 100,000 strong, twice transplanted, 2 to 3 feet, 20s. per 1000, 3 to 4 feet, 30s. per 1000, 4 to 5 feet, 40s. per 1000. All other FOREST TREES equally cheap.
R. TUCKER, The Nurseries, Faringdon, Berks.

LEE'S NEW VIOLET ODORATISSIMA. —Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates :—15s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2s. 6d. ; C. Libani, 3 feet, 2s. 6d. ; Thujopsis borealis, 5 feet, 2s. 6d. ; Thuja gigantea, 4 feet, 2s. 6d. ; Cupressus Lawsoniana viridis, 4 feet, 2s. 6d. ; Swedish Juniper, 4 feet, 1s. 6d., 6 feet, 2s. 6d. ; Golden Retinospora, 2 feet, 2s. 6d. ; Ericoides, 2 feet, 1s. ; Gold and Silver Hollies, 2 feet, 2s. ; Picea nobilis, 3 feet, 3s. ; Pinsapo, 3 feet, 2s. 6d ; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s., 5 feet, 5s. ; Limes, 15 feet, 2s. 6d. ; Birch, 15 feet, 1s. ; Chestnuts in variety, 1s. each ; Scarlet Oak, 15 feet, 1s. ; Araucarias, 4 feet, 20s. ; 5 feet, 30s. ; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d. ; Green Hollies 1 to 1½ foot, 25s. per 100.
E. WALKER, Farnborough, Hants.

THE OXFORD ROSES,
ON THE
CULTIVATED SEEDLING BRIER.



GEO. PRINCE
Begs to offer the following 25 choice varieties,
Carefully packed, package included, 21s.

Alfred Colomb
Auguste Rigotard
Baran Haussmann
Duc de Rohan
Duchess Vallombrosa
Emilie Hausberg
Etienne Dupuy
Etienne Levet
François Michélon
Général Jacqueminot
Hippolyte Jamain
Jean Liabaud
John Hopper
Le Havre
Louis Van Houtte
Madame Bérard (Tea)
Madame Lacharme
Marie Rady
Marie Guillot (Tea)
Miss Hassard
Mons. Paul Néron
Pauline Talabot
Reynolds Hole
Souvenir de Mons. Boll
Thomas Mills

GEORGE PRINCE, OXFORD.

SPECIAL CHEAP OFFER of WINTER and SPRING BEDDING PLANTS.
AURICULA, Alpine, fine strain, in 60-pots, 12os. per 100, 15s. per 100.
DAISY, Aucubæfolia, golden netted foliage, strong clump, 30s. per 1000, 4s per 100.
" Crown, fine, strong clumps, 25s. per 1000, 3s. per 100.
" Rob Roy, fine red, ditto, 25s. per 1000, 3s. per 100
" Bride, finest large white, ditto, 35s. per 1000, 4s. per 100.
MENTHA PULEGIUM, strong clumps, 15s. per 1000, 2s. per 100.
MYOSOTIS DISSITIFLORA, true, well rooted fine clumps, 40s. per 1000, 5s. per 100.
PANSY, Cliveden Blue, fine healthy plants, 50s. per 1000, 6s. per 100.
" Blue King, ditto, 50s. per 1000, 6s. per 100.
PRIMROSE, Single Lilac, strong, 6s. per 100.
" Double Yellow, ditto, 85s. per 1000, 10s. per 100.
ROCKETS, Double Purple, ditto, 10s. per 100.
" Double White, ditto, 8s. per 100.
CATALOGUE of General Nursery Stock on application.
W. BALL AND CO., Bedford Road Nursery, Northampton.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.
HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown : 14s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.
" double white, 12s. to 16s. per 100.
" ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.
DIELYTRA SPECTABILIS, 20s. to 25s. per 100.
LILIUM LANCIFOLIUM ALBUM MONSTROSUM, very free flowering, 30s. to 40s. per 100.
" " ROSEUM, 20s. to 26s. per 100.
" " RUBRUM, 20s. to 26s. per 100.
" CHINENSIS (Leichtlini), 5s. to 8s. per 100.
CHRISTMAS ROSES (Helleborus niger), fine, 40s. to 60s. per 100.
Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.
RUDDENBORG'S BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

To the Trade.

SPECIAL PRICES ON APPLICATION.
GEORGE COOPER, SEED MERCHANT, Hertford, begs to offer the following, of the choicest stocks :—

BEET, Red, Cooper's Excelsior
BROCCOLI, Hill's June
CUCUMBER, Improved Telegraph [Matchless
PARSLEY, Curled, Cooper's
SWEDE, Cooper's Improved
Large Purple-top
TURNIP, Improved Aberdeen Green-top Yellow
ONION, White Spanish
" White Globe
" Bedfordshire Champion
CELERY, Cooper's Improved White
BROMPTON STOCK, Giant Scarlet
CYCLAMEN PERSICUM, from large flowers.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard :—
PEARS on the Quince and Pear stocks.
APPLES on the Paradise and Crab stocks.
CHERRIES on the Mahaleb and Cherry stocks.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock ; do., trained trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds ; do., in pots for forcing, stout and well grown plants
Descriptive Rose Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3d.
Miniature Fruit Garden, 3s. 6d., free by post.

Established Upwards of a Century.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, 1, Waterloo Place, Edinburgh, beg to call the attention of those about to plant to their extensive Stock of FOREST TREES, SHRUBS for Game Coverts, FRUIT TREES, &c., which have been grown in exposed situations.
D. & Co. are now sending out their Bedding VIOLAS and PANSIES (of which they hold the largest stock in the country), Early and Late PHLOXES, &c.
Descriptive CATALOGUES free on application.

To the Trade

JOHN PERKINS AND SON have large stocks of the following, fine clean-grown well rooted stuff :—
ROSES, Dwarf, 30s. per 100.
PLUMS, Standard Diamond, 60s. per 100.
APRICOTS, fine Dwarf-trained, 21s. per dozen.
" fine Maidens, 42s. per 100.
" 2-yr. cut-back, 30s. per 100.
ACER NEGUNDO VARIEGATA, Pyramids, 40s. per 100.
BERBERIS AQUIFOLIA, 1½ to 2 feet, 60s. per 1000.
CEDRUS DEODARA, 3 to 5 feet, 30s. per dozen.
LAURELS, Portugal, 3½ to 4 feet, 70s. per 100.
PICEA PINSAPO, 4 to 5 feet, 24s. per dozen.
" NORDMANNIANA, 3 to 4 feet, 30s. per dozen.
WELLINGTONIA GIGANTEA, 2 to 3 feet, 24s. per dozen.
52, Market Square, Northampton.

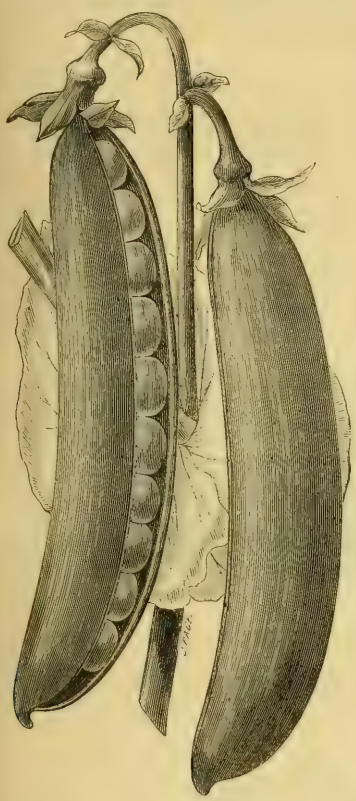
Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices :—
ASH, 2 to 2½ feet, fine, 20s. per 1000
" 3 to 5 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 100
CHESTNUT, Horse, 6 to 8 feet, fine heads, 60s. per 100
" Scarlet, 6 to 8 feet, fine heads, 100s. per 100
ELMS, Canadian, 8 to 10 feet, stems, with good heads, 100s. per 100
" English (upright), 6 feet, stems, with good heads, 100s. per 100
GORSE, single, 10s. per 1000, 1½ to 2 feet, strong.
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 50s. per 100 ; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100 ; 8 to 10 feet, fine, 12s. per 100
" Lombardy, extra fine trees, 8 to 10 feet, 30s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
" ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, extra fine, 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
APPLES, fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100
CATALOGUES of General Nursery Stock on application.

NEW PEA, "MARVEL"
(LAXTON).

First-class Certificate Royal Horticultural Society.

JAMES VEITCH & SONS
HAVE MUCH PLEASURE IN INTRODUCING THIS
GRAND MAIN CROP PEA.



The following description is taken from the Report of Trial of Peas at Chiswick, 1878 :—
"'Marvel,' dwarf white wrinkled Marrow, plant of fine free compact habit; height 3 feet, pods borne in pairs, in great profusion almost from the ground. They are very long, much curved, and always well filled, containing from eight to ten large Peas of very fine quality. Comes into use about a week in advance of Ne Plus Ultra. A very fine Pea, raised by Mr. Laxton. Awarded a First-class Certificate in 1873."

Dr. HOGG *says of it in his "Year Book:"*—"A remarkably handsome, large, and exceedingly productive white marrow Pea."

Mr. BARRON, *Royal Horticultural Society's Gardens, Chiswick, says:*—"This, in my opinion, is the best of all Laxton's productions."

Mr. COLEMAN, *The Gardens, Eastnor Castle, says:*—"Upon receipt of a small parcel of your 'Marvel' Pea, on March 6, a sowing was at once made by the side of 'Perfection' and 'Dr. McLean,' two of the best Peas in cultivation, and the result justifies me in saying it is worthy of all that can be advanced in its favour. When planted thinly it assumes the robust branching habit of 'Perfection,' grows about the same height, and produces an abundance of large, handsome pods, evenly filled with about ten Peas in each. The flavour, when cooked, being delicious, I have no doubt this fine Pea will soon become a general favourite, alike with the amateur, the exhibitor, and the grower for market."

Mr. DUNN, *The Gardens, Dalkeith Palace, says:*—"The Pea, 'Marvel' which you sent me for trial last spring, has proved to be of a nice dwarf, sturdy habit, averaging when well grown about 3 feet high. Sown in the last week of March, along with several other good mid-season sorts, it was one of the first ready for gathering, in the third week of July, and lasting three weeks in fine condition for table. It is a very prolific bearer, with well-filled, large-sized pods, and the Peas equal in flavour 'Veitch's Perfection.' I consider it an acquisition amongst the dwarfer growing Peas, and intend to grow more of it next season."

Price 5s. per Quart.

Trade Price of above and other Novelties to be had on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

HYACINTHS, CROCUS, TULIPS, &c.

DICK RADCLYFFE & CO.'S

ILLUSTRATED
CATALOGUE
OF THE ABOVE
IS NOW READY,
And will be forwarded,
GRATIS and POST-FREE
ON APPLICATION.



HORTICULTURAL
REQUIREMENTS
OF
EVERY DESCRIPTION
KEPT
IN STOCK.

128 AND 129, HIGH HOLBORN, W.C.

CARTER'S CHEAP BULBS
For Planting in Masses.

	Per 100	Per doz.
	s. d.	s. d.
HYACINTHS, bright crimson	32 0	4 6
HYACINTHS, bright rose	32 0	4 6
HYACINTHS, rich purple	32 0	4 6
HYACINTHS, porcelain-blue	32 0	4 6
HYACINTHS, white shaded	32 0	4 6
In beautiful colours. These bulbs are far superior to the ordinary mixed Hyacinths, and can be planted to much better effect.		
HYACINTHS, mixed, red, blue, and white	24 6	3 3
	Per 1000	Per 100
TULIPS, mixed single, good	38 0	4 0
TULIPS, mixed single, extra fine	50 0	5 0
TULIPS, mixed double, good	38 0	4 0
TULIPS, mixed double, extra fine	50 0	5 6
CROCUS, golden yellow, fine	13 6	1 6
CROCUS, golden yellow, splendid	28 0	3 0
CROCUS, white, fine	15 0	1 9
CROCUS, blue, fine	15 0	1 9
CROCUS, striped, fine	15 0	1 9
CROCUS, mixed, all colours	12 6	1 6
DAFFODILS, double yellow	30 0	3 6
NARCISSUS POETICUS, white	30 0	3 6
NARCISSUS, sweet-scented double white	48 0	5 6
POLYANTHUS NARCISSUS, mixed	15 0	2 0
SNOWDROPS, double, good	21 0	2 6
SNOWDROPS, double, extra fine	30 0	3 6
ACONITES, winter, fine	28 0	3 0
	Per 100.	Per doz.
LILIES, white garden (candidum)	21 0	3 6
LILIES, white garden (longiflorum)	21 0	3 6
LILIES, Tiger	21 0	3 6
GLADIOLUS BRENCHLEYENSIS, good	8 0	1 3
GLADIOLUS BRENCHLEYENSIS, extra fine	10 6	1 6

20s. value Carriage Free.

Carter's

The Queen's Seedsmen,
HIGH HOLBORN, LONDON, W.C.

STANDARD CHERRIES.

About Three Hundred strong Trees, consisting principally of
MAY DUKE, BIGARREAU, and MORELLO,
Also other well-known sorts.

To be parted with at an exceptionally low price,
As the Ground must be cleared.

OSBORN AND SONS,
THE FULHAM NURSERIES,
LONDON, S.W.

NEW CATALOGUE.

WILLIAM BARRON & SON'S

New DESCRIPTIVE CATALOGUE of Coniferæ, Hardy Ornamental Trees and General Nursery Stock, may now be had on application. A personal inspection of their unrivalled stock is solicited.

The Nurseries are three minutes' walk from the Borrowash Station, on the Midland (Derby and Nottingham) Railway.

ELVASTON NURSERIES, BORROWASH, DERBY.

SIMPLY AN ANNOUNCEMENT.

H. CANNELL will again show similar magnificent stands of Blooms of ZONAL PELARGONIUMS on the occasion of the Meeting of the Floral Committee of the Royal Horticultural Society next TUESDAY, the 17th, at South Kensington, as those so highly commended at Birmingham by the whole Press.

Birmingham Daily Press, November 29, 1878.
"At the Birmingham Chrysanthemum Show, at the Town Hall to-day, the Judges awarded a special prize to Mr. H. Cannell, the well-known nurseryman of Swanley, near London, for a wonderful display of cut blooms of Zonal Pelargoniums, greatly admired."

Gardeners' Magazine, December 7, 1878.
"H. Cannell, Swanley, Kent, exhibited a wonderful display of cut blooms of zonal Pelargoniums, which were greatly admired, and to which a special prize was awarded. White and Salmon Vesuvius were particularly attractive. The size and richness of colour of the zonals had great attractiveness for the Birmingham people."

Gardeners' Chronicle, December 7, 1878.
"Mr. H. Cannell, Swanley, Kent, sent a large and valuable collection of cut zonal Pelargoniums that seemed to astonish the visitors by means of their great size and rich colouring."
The Home for Flowers, Swanley, Kent.



T. H. P. DENNIS & CO.,

MANSION HOUSE BUILDINGS,

QUEEN VICTORIA STREET, LONDON, E.C.,

CONSERVATORY AND GREENHOUSE BUILDERS,

AND

HOT-WATER ENGINEERS.

Every one possessing a Garden, and every Lover of the Country, should order

THE CHRISTMAS NUMBER

OF THE

GARDENER'S MAGAZINE.

It will contain a variety of Original and Suitable Papers, Two Sheets of Engravings, with Essays and Sketches on Subjects Pertaining to Rural Life and to Questions of Scientific Interest, with a few trifles intended solely to afford seasonable amusement.

In the List will be found—

THE TRUE STORY OF THE GLASTONBURY THORN,
LIFE IN OTHER WORLDS,
NOTICES OF EXTRAORDINARY NOVELTIES,

THE REAL WIZARD OF THE NORTH,
TOPIARY GARDENING,
WOODLAND TREES,

WINTER IN SWITZERLAND,
'THE HEART OF A FLINT,
A SELECTION OF DIALECT SONGS, &c.; and an

ILLUMINATED SHEET ALMANAC,

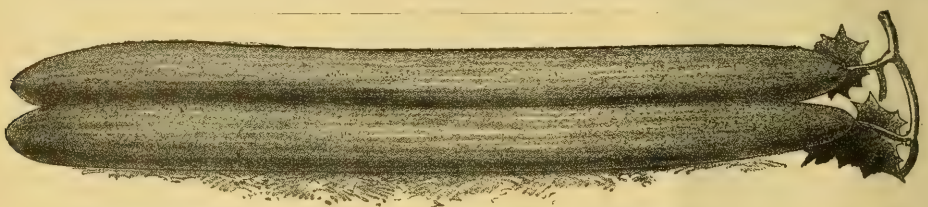
Suitable alike for the Library and the Counting-House.

READY DECEMBER 21, IN ILLUMINATED COVER, PRICE SIXPENCE.

Orders for Advertisements should be furnished before December 17, to W. H. & L. COLLINGRIDGE, *128 and 129, Aldersgate Street, London, E.C.*

LONDON: "THE GARDENER'S MAGAZINE" OFFICE, AVE MARIA LANE, E.C.

STERLING NOVELTIES THAT SHOULD BE IN EVERY CATALOGUE AND IN EVERY GARDEN.



CARTER'S SUPERB FRAME CUCUMBER "MODEL."

"Your 'Model' Cucumber is the model of what a Cucumber should be—handsome, productive, and of delicious flavour."—Mr. J. GOODACRE, *Head Gr. to the* Rt. Hon. Earl of Harrington.

"'Model' Cucumber is a splendid variety, long, handsome, and of a fine dark colour."—Mr. T. LOCKIE, *Head Gr. to the* Right Hon. Lord Otho Fitzgerald.

"'Model' is a large and handsome Cucumber."—Mr. J. WOODBRIDGE, *Head Gr. to* His Grace the Duke of Northumberland.

"'Model' is a very handsome Cucumber, of fine flavour, and very prolific."—Mr. G. JOHNSTON, *Head Gr. to the* Right Hon. the Earl of Strathmore.

"'Model' Cucumber is an excellent variety for summer use, and uniformly handsome."—Mr. J. BELL, *Head Gr. to* His Grace the Duke of Wellington.

Price, in sealed packets, 2s. 6d. per packet.

"PARAGON" CUCUMBER (Kelway).

A remarkably productive, handsome and very distinct Cucumber, with scarcely any neck, and averaging from 18 to 24 inches in length. It is an enormous cropper, producing fine fruit at nearly every joint.

"The last new Cucumber, named 'Paragon,' will be distributed next spring. I believe it eclipses all others raised by Kelway. It is the result of a cross between Kelway's 'Beaconsfield' and 'Tender and True.' The fruit is remarkably handsome, with hardly any neck, is almost spineless, and attains a length ranging from 18 to 24 inches. The plant is very productive producing fruit at almost every joint. As an exhibition Cucumber it is decidedly A 1. It is now bearing enormous crops, there being, at the present time, no less than 300 fruits upon the plants occupying a house 40 feet long, although they have not had any fire-heat whatever. Mr. Kelway considers the 'Paragon' equally well suited for furnishing winter as summer crops. It is certainly a handsome Cucumber, and must take high rank amongst exhibition varieties."—*Gardeners' Magazine.*

Price, in sealed packets, 3s. 6d. per packet.

"DELL'S NEW HYBRID" MELON.

The only Green-fleshed Melon awarded a First-class Certificate by the Royal Horticultural Society this year.

This delicious Melon is the result of a cross between "Colston Bassett" and "Victory of Bath," and is certainly the best green-fleshed Melon ever tasted. A large number of aspirants for honours have been submitted to the judgment of the Committee of the Royal Horticultural Society during the present year, but "Dell's Hybrid" was the ONLY GREEN-FLESHED variety pronounced worthy of a First-class Certificate.

Price, in sealed packets, containing Six Seeds, 2s. 6d. per packet.

PRIZES.—We offer Five Guineas in Prizes FOR THE FINEST FRUIT OF THIS SPLENDID MELON, *to be awarded at the Royal Horticultural Society's Meetings in* 1879. (*For particulars see Schedule.*)

"CARTER'S TELEPHONE" PEA.

Awarded a First-class Certificate by the Royal Horticultural Society, after a crucial trial in the Society's Gardens.

Selected from Culverwell's "Telegraph," from which it differs in the seeds, being wrinkled, whilst the quality is very superior. Like Culverwell's "Telegraph" it is an extraordinary cropper, bearing myriads of immense semi-double pods, full of very large Peas of most exquisite flavour. Highly recommended.

Price, in sealed packets, per pint, 2s. 6d.

For full description see "Gardeners' Chronicle" for December 7, p. 740.

THE QUEEN'S SEEDSMEN, *Carter's* HIGH HOLBORN, LONDON, W.C.

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9 inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 is now ready.

CRANSTON & CO.,
NURSERIES, KING'S ACRE, HEREFORD.

RICHARD SMITH & Co.
WORCESTER

FIFTY ACRES of FRUIT TREES.—Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and other Fruit Trees, as Standards, Dwarfs, Pyramids, Bushes, Cordon and trained trees in great variety, all full of vigour, and warranted true to name. Descriptive Price List, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatmeat under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., for a penny stamp.

TWELVE ACRES of ROSES.—Standard, Dwarf, and Climbing, all the popular sorts; also 80,000 choice Tea-scented and Noisette Roses in pots; extra strong Roses in pots for immediate forcing. See Descriptive Price List, free for a penny stamp.

GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease; Planting Canes, 3s. 6d. to 5s. each; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

WORCESTER PEARMAIN APPLE (awarded a First-class Certificate by the Royal Horticultural Society).—One of the handsomest and most useful Apples in cultivation. For full description see "Extract from the *Journal of Horticulture*," and RICHARD SMITH & Co.'s Fruit List, which may be had for a penny stamp. Coloured Plates, 6d. each. Maiden Trees, 1s. 6d. each; Bushes, 3s. each; Standards, Pyramids, and Dwarf-trained Trees, 3s. 6d. and 5s. each.

HARDY HERBACEOUS and ALPINE PLANTS, their scientific and English names, height, colour, time of flowering, and other useful information. Descriptive Price List for a penny stamp. Collection of 100 beautiful hardy varieties for Garden Beds, Borders, or Rockeries, for 30s.

LIST of all the EVERGREEN FIR TRIBE, suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country, and size there, situation, soil, and other information, with copious index of their synonyms. Free by post for six stamps.

LIST of STOVE and GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Ferns, &c., free for a penny stamp.

LIST of EVERGREEN and DECIDUOUS SHRUBS, RHODODENDRONS, STANDARD ORNAMENTAL TREES, CLIMBING and TWINING PLANTS, with their generic, specific, and English names, native country, height, time of flowering, colour, &c., and general remarks, free for a penny stamp.

ALL kinds of GARDEN SEEDS, of first quality, BULBS, MUSHROOM SPAWN, TOBACCO PAPER, ARCHANGEL MATS, and other GARDEN REQUISITES. See Lists, which may be had on application.

RICHARD SMITH & Co.
WORCESTER



WM. PAUL & SON,

(Successors to the late A. Paul & Son, Established 1806,)

ROSE GROWERS,

TREE, PLANT, BULB, AND SEED MERCHANTS.

WALTHAM CROSS, HERTS,

Adjoining the "Waltham" Station, Great Eastern Railway.

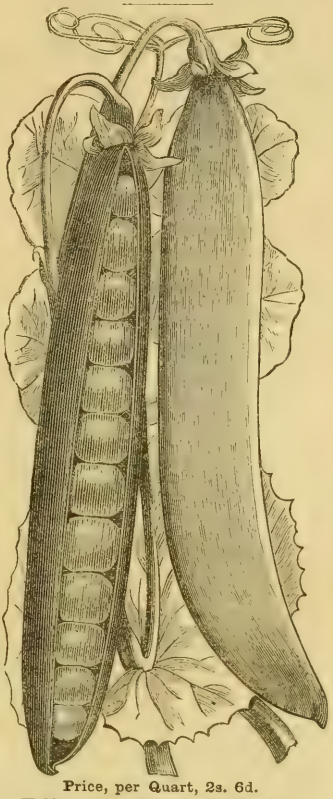
Inspection of Stock invited.

Priced Descriptive Catalogues free by post.

CHARLES SHARPE & Co.

SHARPE'S INVINCIBLE.

New Long-Podded Blue Marrow Pea.



Price, per Quart, 2s. 6d.
Half-pint Packets, free by Post, 1s.

The "INVINCIBLE" is a cross between *Veitch's Perfection* and *Essex Rival*, and has the advantage of being but little liable to the attack of mildew.

The plant is about 3 feet in height, of a robust branching habit; the pods are produced in pairs, and occasionally three together, from near the ground to the top of the stem—the rows having the appearance of being clothed with pods from top to bottom. The pods are closely packed with from ten to twelve large Peas, which, when cooked, are of exquisite flavour, and of a beautiful deep green colour.

As a main crop Pea, either for the Gentleman's Garden, or the Market Gardener, CHARLES SHARPE & Co. have no hesitation in saying that the "Invincible Pea" will be found superior to anything yet sent out.

For TESTIMONIALS *see "Gardeners' Chronicle" of Nov. 23, p. 671; Nov. 16, p. 644; and Dec. 7, p. 735.*

Trade Price on application.

SLEAFORD



SATURDAY, DECEMBER 14, 1878.

CHURCH DECORATION.

CHURCH decoration is a subject to be approached with some diffidence, but however opinions may vary with regard to it ecclesiastically, there are some points as to effect, expense, and safety on which all will agree.

As to the style, it seems best to consult the taste of the congregation; the object of the whole arrangement is presumably to give a dressed and cheerful appearance, such as may accord with the tone of feeling of some especial body of worshippers at some especial time, and amateur decorators or new-comers in a district would avoid many a difficulty by shaping their floral offerings accordingly. The congregation in some quiet country spot may be no whit behind the most fashionable one in real taste and sense of fitness, but they are different, and what is appropriate in one case may upset all ecclesiastical comfort in another.

In the general plan of decoration it often happens that arrangements suggested by the character of the surrounding country are very satisfactory to the congregation. Amongst the Ivy-clad woods of the West of England the long straight Ivy stems which may be stripped for yards in length from the young trees in Fir plantations make decorations without any labour but that of attaching them to recesses of the pillars, curves of the arches, edges of windows, and every place where a strip of green is available—as simple and natural as if the stems were self-attached to the stones of some abbey ruin. Cliffs also, and rocky ledges, with their fringes of wild flowers and Ferns, give good ideas for dressing cornices or capitals of pillars, and in this way rows of Primrose plants in blossom with Ferns hanging beneath have a particularly good effect; the Centranthus, either red or white, is also very available for masses to be placed at some height. Common Gorse mixed with Fern can hardly be surpassed for general effect, nor should common Heath, with its rich purple tints, manageable form, and fresh, healthy scent, be so much overlooked as it often is.

It is a great object to keep the colours in masses. However rare and beautiful the flowers used may be in themselves, it is only when they are of very large size that they can be well seen individually by any but those close to them, and for the general effect many of our more durable wild flowers may be utilised with great advantage, especially where there are not unlimited funds to be drawn on for decoration; and if the contributions from various sources could be sorted into various colours before the work of decoration began, rather than applied as separate mixed collections, the donations would be much more serviceable.

In ordinary decorative arrangement it saves much chance of failure in effect to place the material, whether flowers, plants, or any other natural growths, only in such positions as they might be seen in naturally, or according to some known method of arrangement; thus, woodwork or stonework may have plants running up it from below, falling down from above, or trailing horizontally along mouldings, or as if growing on cornices. We are accustomed to see cut flowers in vases or arranged in wreaths,

but if no known kind of growth or ostensible method of arrangement will account for a display of flowers in any particular spot, we may be pretty sure that they are better omitted. This is particularly to be considered in pulpit decoration: horizontal or vertical lines of foliage with one or two colours of flowers have a picturesque and true effect, but the appearance of all possible colours, with no ostensible method of fastening the component parts all over the flat panels and every available surface, is unsatisfactory both to the eye and mind.

Occasionally the effect of decoration, very good for the time of day or state of light it was arranged in, is entirely spoilt for other times by the consequences of changing light and shadow not having been considered, and the arrangement appearing as a dark mass; this especially is the case of chancel or east window decorations during the morning service. Generally speaking, the painted glass and the flowers between it and the observer are under exactly opposite conditions—the light that displays one conceals the beauties of the other; when the glass has lost its effect from the evening shadows the flowers within will appear and *vice versâ*, and it is sometimes no small disturbance to those who would gladly not be disturbed to conjecture what the singular forms can be which from a little want of thought are presented simply as forms to the congregation through half their attendance.

The members of the congregation, each fixed for a considerable time in one spot, see the decorations under very different circumstances, both mental and bodily, to those of the cheerful party of decorators full of plans and suggestions, and it would be well if now and then, when they had arranged all to their satisfaction, they would see whether they had not materially added inconvenience to the officiating minister, or something totally incongruous to his surroundings.

It may seem uncalled for to mention such obvious misarrangements, but still more attention is needed to the highly ornamental parts being kept from being apparent additions to the dress—this especially (to give a single instance) in the wreaths of Roses hung on the chancel eagle. They are beautiful in themselves, but most objectionable in such combination. The arrangement of a decoration laid flat all round the edge of the pulpit cannot fail to be singularly unpleasant to the fingers that perpetually have to be removed from its leaves and stems. One word also might be said for the safety of the congregation from petty annoyances and occasional danger. A bough falling on any one kneeling beneath is (from personal experience) startling, and might cause a deal of disturbance, therefore as far as possible it is well to avoid such arrangements, as either are (or suggest that they may be) dangerous or insecure. Greenhouse plants arranged on the top of capitals of pillars are very beautiful, but suggest pots; and amongst the variety of garden produce introduced into our churches at some thanksgiving services the Apples are an unfailing source of anxiety to the graver members of the congregation. Why the especial reminder of the Fall should be introduced at all is puzzling, but whether in piles like cannon balls, threatening to roll down every instant, or on boughs threatening to fall at the first draught, there seem always to be difficulties; and, if they must be there, it might be suggested that a stitch run right through Apples, Pears, or any similar solid fruit, so as to tie it firmly to its stem beyond possibility of misadventure, would be highly desirable.

Of the beauty of the feeling of decorating our churches with symbols of the earthly blessings for which we are offering our thanks there can be no doubt, but whilst in some cases the House of Prayer seems a little too much turned into a conservatory, in others it is rather too apt to be turned into the field. We need the corn ears to symbolise our bread, but we do not (to all minds at least) need to have the whole sheaves brought into church—stems, weeds, insects and all. A truly rural thanksgiving service is in most things beautiful, but the amount of farm produce, where the symbol of our daily bread is represented by a sheaf of which every bit of the history is known to the agricultural surrounders, and mentally commented on through the service, might with advantage be reduced so as to be suggestive of spiritual and earthly blessings rather than of agricultural comparison.

Symbolical forms made of flowers are dangerous ground to venture on, and the reverse—imitative representation of flowers or foliage in wool-work, paper, tinsel, beads, or any other way—should be totally inadmissible; but masses of foliage with any flowers that may be procurable, arranged simply and naturally so as to show their colours in all lights, will always be pleasing: and it may perhaps be of service to mention that if flowers are required to be laid for a few hours in some position where they cannot be supplied with water, they will keep their freshness if the tips of their stems have been placed for two or three hours previously in a mixture of about one part of vinegar to two of water. *O.*

New Garden Plants.

CYPRIPEDIUM LAWRENCEANUM, *n. sp.**

When, last autumn, a frequent visitor at the Veitchian establishment, I was very much attracted by a very free-growing unknown Cypripedium, having the leaves of Cypripedium Dayanum, though unusually large, but of a very different growth, since it was shooting above the soil, so that Mr. Harry Veitch in his last letter compared it to Oncidium flexuosum. When I left it began to show flower, and now, December 1, I have fresh specimens at hand which give evidence that we were altogether right when expecting a novelty. The leaves attain a foot in length, and have on their inner surface a dark green mosaic on a light green, nearly whitish ground. The flower is equal to those of Cypripedium barbatum majus. The upper sepal is very broad and round, much exceeding a halfcrown-piece, white, with thirteen dark purplish shining veins which run to the edge, and have usually a narrower and shorter one between them, which do not reach the border. The connate lateral sepals are exceedingly small, quite a caricature of the sepal one usually sees, white, with five dark purplish nerves. The petals are divaricate, narrow, green, dull purplish at the top, ciliate, and with the usual fleshy dark warts on the limb. The lip is as much developed as the upper sepal, very large, with the strong lateral horns of the shoe purplish-brown above, yellowish below, covered with very numerous warts internally. The staminode is a special ornament. It comes nearest to that of Cypripedium javanicum, but the posterior exterior border is simply split in the middle, so that the two segments are contiguous while they are separated by a wide sinus in C. javanicum. The five anterior teeth have the middle one very much developed. It is of a light yellowish-white waxy colour, with a purplish edge and some green reticulations. Cypripedium barbatum, venustum, purpuratum, have only three teeth at the same place.

The novelty is one of the numerous discoveries of Mr. F. W. Burbidge, who has come home quite lately as if to see his *protégé* flower. It is dedicated with many grateful expressions to Sir Trevor Lawrence, the ardent orchidist and possessor of an Orchid collection of exceptional richness and beauty. *H. G. Rchb. f.*

DENDROBIUM BIGIBBUM, *Lindl.*, SUPERBUM.

Lovely as is Dendrobium bigibbum, with its exceedingly ornamental Lælioid flower, yet the superb variety is grander, though very scarce. It is easily understood by its much larger flowers, larger and longer petals, the exceedingly rounded very dark almost blackish purplish side lobes of lip, and a longer spur. From an old memorandum in my herbarium I see that our lamented friend, Mr. John Gould Veitch, first discovered and introduced it to England. If I am not mistaken, it was originally not so much appreciated as now, since the typical D. bigibbum, as represented in Paxton's *Flower Garden*, was nearly lost sight of. I remember, however, the late Mr. S. Rucker had a plant of the Loddigesian stock; he presented me with some flowers, very inferior to the Veitchian variety, in 1865. It has generally been believed that Messrs. Loddiges were the first who introduced and flowered Dendrobium bigibbum in 1859. This is a great mistake: Dendrobium bigibbum flowered first at Kew as early as 1824 (a very good year for Orchidology, as it gave birth to at least two most energetic and enthusiastic orchidists), as may be ascertained in the botanic rooms of British Museum, where a beautiful drawing of Francis Bauer is preserved with the just given statement. It gives me pleasure to thank the authorities of that establishment for their constant zeal and perseverance in letting me see their invaluable treasures. Fresh materials of both varieties are at hand from my excellent correspondents, Messrs. Veitch. *H. G. Rchb. f.*

ORNITHOGALUM AURANTIACUM, *Baker, n. sp.**

This is a small new and very distinct species of Ornithogalum, just received at Kew in a living state from our excellent correspondent Mr. Harry Bolus, of Cape Town. It does not fall satisfactorily into any of the sections characterised in my monograph of the genus, as it has bright yellow flowers without any dorsal band to their segments, the veins being obscure and dispersed through the whole lamina. Doubtless it would be best to enlarge the definition of section Cathissa so as to include it. It is too tiny to have any general value as a garden plant.

Bulb ovoid, ½ inch in diameter, pale, with thin tunics. Leaves two, very slender, erect, subulate, cotemporary with the flowers, 1½—2 inches long. Scape very slender, glabrous, flexuose, 3—4 inches long. Flowers usually solitary in our half-dozen specimens, rarely two to a scape: pedicels ascending, ¼—½ inch long, almost hidden by the deltoid clasping scariose white auricled bract, which is about the same length as the pedicel. Perianth campanulate, bright orange-yellow, ⅜ inch long; segments oblong, ⅛—¼ inch broad, without any dorsal band. Stamens one-third shorter than the perianth; filaments all six linear-subulate; anthers minute, yellow, oblong. Pistil about as long as the stamens; ovary oblong; style very short; stigma capitate. *J. G. Baker.*

TILLANDSIA (ALLARDTIA) PAUCIFOLIA, *Baker, n. sp.*†

This is a tiny species of Tillandsia, now flowering in the Kew collection, of which we do not know the exact history. The descriptions of the species of the genus are scattered so widely, that it is very difficult to be certain whether any given plant is really new; but I have failed to identify it. It comes nearest the West Indian T. pruinosa, Sw., but here the lepidote scales that cover the leaves and bracts form only a thin adpressed silvery coating, and the spike is only half as broad as in that species, and contains much fewer flowers.

Whole plant not more than 4—5 inches high, the bracts and both sides of the leaves coated with adpressed silvery lepidote scales. Basal leaves five or six in a dense rosette, with large ventricose dilated bases about an inch in length and breadth, the squarrose lamina not more than 2—3 inches long, linear-subulate, tapering gradually from the base to the tip, channelled down the face. Stem very short, hidden by its two or three linear erect reduced leaves. Spike simple, erect, distichous, 3—4-flowered, 1½—2 inches long, ⅜—½ inch broad; bracts about an inch long, oblong-navicular, much imbricated. Flowers with a very short stout pedicel inside the bract; sepals lanceolate, naked, ¾ inch long. Petals violet, oblanceolate-unguiculate, half as long again as the petals. Stamens equalling the petals. Style just exserted.

Cypripedium Lawrenceanum, n. sp — Foliis Cypripedii Dayani, flore C. barbati; tepalis angustis porrectis, limbo energetice verrucosis ac ciliatis; staminodio magno C. javanici; st. rotundato, postice fisso, antice forcipato; dentibus externis porrectis, dentibus internis terms, dente medio valdiori; filamentis fertilibus æqualiter bidentatis. *H. G. Rchb. f.*

* *Ornithogalum aurantiacum*, Baker, n. sp.—Pro genere minimum, bulbo ovoideo pallido; foliis 2 syr anthis erectus teretibus subulatis scapo; brevioribus; scapo gracillimo flexuoso; 3—4 pollicari; floribus 1—2 aurantiacis, pedicellis flore paulo longioribus; bracteis deltoideis auriculatis; perianthii parvi campanulati segmentis oblongis dorso nullo modo vittatis; staminibus perianthio triente brevioribus, filamentis sub-conformibus linearisubulatis, antheris minutis oblongis; ovario oblongo stylo brevissimo.

† *Tillandsia* (*Allardia*) *paucifolia*. Baker, n. sp. — Pro genere parva: foliis caule bracteisque ubique t nuiter adpresse argenteo-lepidotis; foliis radicalibus 5—6 rosulatis basi insigniter ventricoso-dilatatis, lamina supra basin 2—3-pollicari squarrosa linear-subulata facie canaliculata; caule brevissimo foliis 2—4 linearibus reductis occulto; spicâ simplici densa erecta 3—4 flora; bracteis subpollic ribus oblongo-navicularibus valde imbricatis; calyce nudo bractea paulo breviori, sepalis lanceolatis; petalis oblanceolato-unguiculatis violaceis calyce sesqui longioribus; staminibus petalis æquilongis; stylo breviter exserto.

CURVILINEAR PLANT-HOUSES.

In fig. 124 we give an illustration of some glass structures built last year for George Orme, Esq., Manor House, Sutton, Surrey, by Mr. W. H. Lascelles, 121, Bunhill Row, E.C. The range shown consists of three wings, and is 20 feet wide, with a range of vineries in the rear, 84 feet long and 20 feet wide. The structure stands near to Mr. Orme's residence, and was designed in this form with the object of hiding from view the kitchen garden, which it does completely. The houses are built on the principle advocated by Mr. Lascelles—that is to say, of bent wood with straight glass, which is no more expensive than a plain straight roof. The design is effective, and in good taste in all respects, except the arched door. There is no example in ancient Gothic work of an arch supporting nothing. The arched door should properly have had a tympanum of some sort

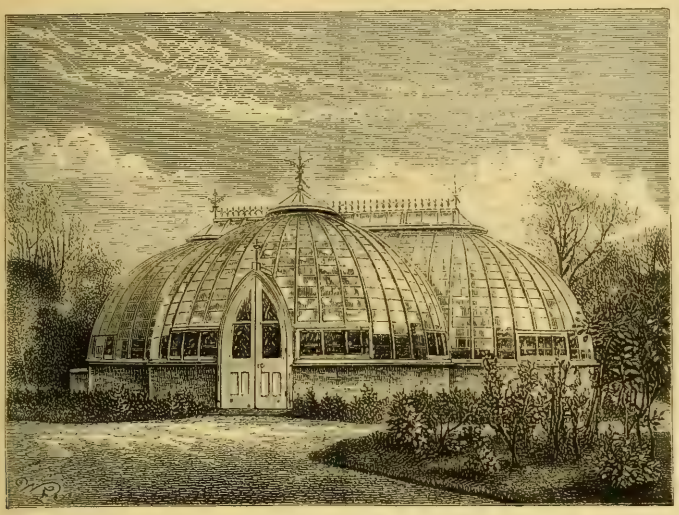


Fig. 124.—CURVILINEAR PLANT-HOUSES ERECTED BY MR. LASCELLES.

SPATHIPHYLLUM *v.* MASSOWIA.

In the present volume of the *Gardeners' Chronicle*, p. 244, is an editorial notice of "the history of Pothos cannæfolia," in which I am mentioned as having identified the plant described by M. André as Anthurium Dechardi with Spathiphyllum cannæfolium, Schott. This notice, having called forth a note from M. André on p. 345, and two from Professor Karl Koch on pp. 312 and 622, all denying the correctness of my identification, besides containing incorrect statements, and tending to create a considerable amount of confusion, which future workers at this group of plants may not have an opportunity of readily disentangling, I feel it incumbent on myself to state as clearly as the involved subject will permit the true bearings of the case, whilst all the plants spoken of are in cultivation.

Of the three notes the second one of Professor Koch at p. 622, "On the genus Massowia," is the most confused, and is consequently the most difficult to deal with. In that note the following three statements are embodied:—1st, That the genus Massowia, Koch, has the claim of priority over Spathiphyllum, Schott. 2d, That Anthurium Dechardi, André, is not specifically identical with Pothos cannæfolia, *Botanical Magazine*, t. 603. 3d, That Anthurium candidum, Hort. Bull, is the same as Spathiphyllum Gardneri. In all three statements Professor Koch is in my opinion mistaken, as I shall proceed to show.

First as to the claim of priority for Massowia over Spathiphyllum. The genus Spathiphyllum was established by Schott in the year 1832 (*Meletemata*, p. 22), and the two species there enumerated are S. lancæfolium, Sch. (Dracontium lancæfolium, Jacq., *Icon.*, t. 612), and S. sagittæfolium, Sch. (Pothos sagittæfolia, Rudge, *Pl. Guian.*, p. 24, t. 34). I cannot understand why Professor Koch should say this latter was "a previously undescribed plant," for there is a description and a good figure in the book quoted, published in 1805. But these two plants are types of two distinct genera, as all are now agreed, Schott himself being the first to recognise this, for in his *Aroideæ*, published in 1853, p. 3, we find he placed his S. sagittæfolium with some allied plants in his new genus Urospatha, retaining S. lancæfolium, together with Pothos cannæfolia, *Botanical Magazine*, t. 603 (S. cannæfolium, Sch.), and other allied plants in the genus Spathiphyllum. Here, then, we have evidence of what Schott's idea of a Spathiphyllum was, which of itself is surely sufficient, for Schott was a man who knew what he was about, and with the exception of making rather too many genera and a few specific errors has done his work thoroughly well. But to proceed. In 1852 Professor Koch (*Botanische Zeitung*, x., p. 277) founded his genus Massowia upon the Pothos cannæfolia (*Botanical Magazine*, t. 603), for which we find he now claims priority over Spathiphyllum, though I fail to see what Pothos cannæfolium has to do with the question, since it was not a plant Schott had originally included in his genus Spathiphyllum, and at the place quoted Professor Koch makes no mention of Spathiphyllum or the two plants originally placed in it by Schott, from which we might reasonably infer he then considered his Massowia cannæfolia was not congeneric with either of these plants, and indeed, from his statement there, it is evident he considered Massowia as distinct from every other Aroid in having a gamophyllous perianth. However, from his recent note (*Gardeners' Chronicle*, p. 622) we find he now regards Massowia cannæfolia and S. lancæfolium as congeneric, and in this he is correct, for there is a complete gradation between the gamophyllous perianth of the one and the polyphyllous perianth of the other; for instance, in S. Lechlerianum the perianth is polyphyllous, or slightly, or almost completely gamophyllous in different flowers from the same spadix, and other species vary in a similar manner. He also gives his reasons for claiming priority for Massowia in the following words:—"As it appeared to me that S. sagittæfolium agreed better with Schott's diagnosis of Spathiphyllum than S. lancæfolium, I founded in 1852 the genus Massowia." But if that was the case, how is it that, as already stated, he makes no mention of either of those plants when describing Massowia? On the contrary it is evident from the context that he did not regard either of those plants as congeneric with his Massowia. From the quotation just made it appears that Professor Koch's idea of the genera is:—

Massowia, Koch.—Syn. Spathiphyllum, Schott, in part, to include Pothos cannæfolia, *Bot. Mag.*, S. lancæfolium, Sch., and allies.

Spathiphyllum, Schott.—Syn. Urospatha, Schott, to include S. sagittæfolium, Schott, and allies.

This, however, is an incorrect reading of the case. Turning to Schott's original diagnosis of Spathiphyllum, and selecting the three most prominent characters, they are:—Stamens, 5 to 8; ovary 3-celled, stigma 3-lobed, all of which agree exactly with S. lancæfolium, but not with S. sagittæfolium, which has 4 (rarely 5—6) stamens, an incompletely 2-celled ovary, and an entire stigma. So that to place Pothos sagittæfolia, Rudge, as the type of the genus Spathiphyllum, and to turn Dracontium lancæfolium, Jacq., out of it, would be placing a plant which does not possess the described characters of the genus as the type of that genus, and turning out of it the plant that does possess them—an unjustifiable proceeding. Therefore as Dracontium lancæfolium, Jacq., does possess the characters assigned to Spathiphyllum, and Pothos sagittæfolia, Rudge, does not, Dracontium lancæfolium must stand as the type of the genus Spathiphyllum; and as Massowia cannæfolia, Koch, is congeneric with the last-named species, and was published twenty years afterwards, the genus Massowia can neither claim to have priority over Spathiphyllum nor to be kept up as a separate and distinct genus. The most that can be done for Massowia is to constitute it a section of Spathiphyllum characterised by all the flowers having a completely gamophyllous truncate perianth. This section would then include S. cannæfolium, Sch., S. Bonplandii, Sch. (this species I have not seen); S. commutatum, Sch.; and S. minahassæ, Teysm. and B.; this last species was also originally published as a distinct genus (Spathiphyllopsis, Teysm. and B., in *Pl. Nov. Hort. Bog.*, Feb. 1863, p. 2).

The second statement of Professor Koch's is, that Anthurium Dechardi, André, is a species distinct from Spathiphyllum cannæfolium, Sch.

I had not made the statement, embodied in the editorial note on p. 244, that these two plants are identical, without having taken a sufficient amount of trouble to be certain of it. When I first saw the figure of Anthurium Dechardi in May, 1877, I recognised it as being the old Spathiphyllum cannæfolium, but it was not until August of this year that I was able to make that recognition certain, when I examined a flowering plant of Anthurium Dechardi, which was received at Kew direct from M. Linden, July 16, 1877, and, as I had expected, I found it identical in all respects with the type specimen of the plant figured in the *Botanical Magazine*, t. 603, as Pothos cannæfolia (now Spathiphyllum cannæfolium), at present preserved in the Kew herbarium (this by the kindness of Professor Koch I have had an opportunity of comparing with his type specimen of Massowia cannæfolia, or M. cannæformis, as it is labelled in his herbarium, and find they exactly agree). However, since my identification has been questioned, I have taken further trouble to make it certain that I had not by chance got the wrong plant; but no! the plant received from M. Linden exactly agrees with the figure of Anthurium Dechardi in *L'Illustration Horticole*, xxiv., t. 269, and I have seen a large number of plants of it at Mr. Bull's establishment, some of which he obtained from M. Linden, and others he imported from Columbia, besides which he also has plants of Spathiphyllum cannæfolium imported from the West Indies: of all these I have examined living specimens, and find them identical with each other and with the type of S. cannæfolium. As to the remarks made in the note on p. 244 to the effect that the countries of A. Dechardi and S. cannæfolium are different, and that the spathes of the former are white on both sides, whilst in the latter they are green on the back, I answer that besides there being numerous other plants which we know to inhabit the West Indies and the mainland of South America, Mr. Bull has, as already stated, living plants from both places, and they are the same. As to the colour of the spathes most of

these at Mr. Bull's are green on the outside, and some plants will produce entirely white spathes and spathes that are green outside; I may also state S. blandum, Sch., will do the same thing. This may perhaps be the effect of climate. But certain it is that A. Dechardi is indisputably identical with S. cannæfolium. Respecting the plants of S. cannæfolium in the Jardin des Plantes, Paris, referred to by M. André, I have no knowledge; but I do know that in 1874 there was no plant of it at Kew, although there were several plants of S. blandum, Sch., wrongly labelled S. cannæfolium, and I think it was probably one of these which M. André states was received at Paris in 1871. I cannot but think M. André is mistaken when he says he "knew the old Spathiphyllum cannæfolium," for if he did, he would, or certainly should, have identified it with his Anthurium Dechardi. *N. E. Brown, Kew.*

(To be continued.)

THE BOSCOBEL OAK.

EVIDENCE as to identity is sometimes open to suspicion both in the case of trees and persons. At p. 385, 1876, you published an account of the Royal Oak in which I hazarded an opinion on the age of the tree, founded on its size and appearance, its comparison with other trees, and the character of the soil in which it is planted. Others have arrived at different conclusions from myself.

With your permission, and with the aid of *Boscobel* (a capital account of the Royal Oak, published this year, by Mr. de Bunsen, the Rector of Donington), I will call some witnesses to identity. King Charles II., in a narrative dictated to Mr. Pepys at Newmarket, twenty-nine years after his escape, says that he and Colonel Carlos, furnished with "bread, cheese, and small beer, and nothing else, got up into a great Oak that had been lopt some three or four years before, and being grown out again very thick and bushy, could not be seen through." If his Majesty meant that the tree had been hard pollarded, and if that had really been so, the present tree could not be the Royal Oak (see p. 501). Blunt says on this subject, "The Colonel made choice of a thick-leaved Oak." The Rev. George Plaxton, Rector of Donington from 1690 to 1703, says, in a paper drawn up in 1707, "The Royal Oak was a fair spread thriving tree; the boughs of it were all lined and covered with Ivy. Here, in the thick of these boughs, the King sat in the daytime with Colonel Carlos, and in the night lodged in Boscobel House." He then refers to various other "strangely mistaken" persons who had reported the tree "an old hollow Oak, whereas it was a gay and flourishing tree." This witness goes on to say, "The poor remains of the Royal Oak are now fenced in by a handsome brick wall, at the charge of Basil Fitz-Herbert, Esquire," with an inscription which he quotes; and he adds, "'Twas put up twenty or thirty years ago." Probably the Rector meant by "'Twas put up," that the inscription and wall were both put up "twenty or thirty years ago," or some time between the years 1677 and 1687.

The brick wall was removed in 1817, when the Royal Oak, having survived the loss of its lesser branches, was fenced in by Miss Frances Evans, the late owner of the property, with the iron palisade which still remains. Let us call Mr. Blunt again, the author of *Boscobel*, a work compiled in 1660, in the year of the Restoration. He says of the Royal Oak, in which he fervently believes, and which he speaks of as once "the palace of his sacred Majesty," that the numerous visitors had deprived it of all its young branches, "insomuch that Mr. Fitzherbert, the proprietor, has been forced, in a due season of the year, to crop part of it for its preservation, and has lately been at the charge to fence it about with a high pale." Mr. Blunt is wrong here; the pale was a wall.

In the first edition of *Silva* (1664), Evelyn does not mention the Royal Oak; in the next edition (1679) he says, "I am told" that the Royal Oak had been served like another Oak which he mentions, and of which he says, "the people never left hacking of the boughs and bark till they killed the tree." Dr. Charlett, head of the University College, Oxford, deposes, in a letter to Pepys in 1702, that he has just been to Boscobel, while engaged in a tour through several counties. "The trunk of the Royal Oak," he adds, "is now enclosed within a round wall, with an inscription."

Dr. Stukeley visited the tree in 1713, and his evidence is partly derived from hearsay. The King and Colonel Carlos, he was told, climbed into the tree by means of the he ro sid-lad ler, and the family reached them victuals with a nut-hook. He mentions the wall. "The Oak," he says, "is in the middle, almost cut away by travellers whose curiosity leads them to see it; close by its side grows a young thriving plant from one of its acorns."

The above evidence is conflicting. My own verdict would be, that the tree was a flourishing tree, and not a pollard, when Charles got into it; that it suffered the loss of many small branches before the wall was built, and that it afterwards recovered itself. It appears to me to have now reached the period of old age, and to be growing very slowly, if at all; and on this point I prefer the recollection of the Earl of Bradford, who has known the tree for half a century, and cannot detect much change in its appearance, to the measurements and observations of a correspondent of yours, who discovers a difficulty in getting food into the tree with a nut-hook (which never happened), and reports the height from the ground to the branches, without noticing that four lower branches have been lost.

The evidence is so confused and contradictory that I would rather rely on the reports from father to son which were handed down in Lord Bradford's family, for the assurance that this is the original tree from a period when a seedling could not have passed for its parent. It is only sixty-one years since 1817, when the palisade was put up, and many aged people now living in the neighbourhood were capable of seeing with their own eyes whether the present tree stood in the centre of the space, surrounded by the wall, or not. In reference to the age of the existing tree, Lord Bradford says, "I should myself estimate the tree at Boscobel to be 400 or 450 years old."

According to Mr. de Bunsen's statement, the present circumference, at 4 feet from the ground, is 12 feet 3 inches; and he quotes the measurement in 1857, on the authority of Mr. Barnett, at 11 feet 4 inches at the same height from the ground. Knowing the errors that sometimes occur in measurements, I still prefer Lord Bradford's memory to this evidence. Lord Bradford has known the tree for half a century, and says that "it looks now very much as it did then." If the tree has really grown larger, the expansion is due perhaps to internal decay and the filling up with young wood. It often happens that aged trees increase in their circumference when tottering to their fall. The largest tree in Bagot Park, the Squitch Oak, which once contained 1012 cubic feet of timber, and was valued at £240 12*s.*, had a circumference in 1823 of 21 feet 9 inches, and in 1876, of 23 feet 2 inches (at 5 feet from the ground). The Beggars' Oak had increased from 20 feet to 23 feet 2 inches (p. 453, vol. vi., 1876). I endeavoured to explain the process of this senile expansion in an account of the Cressage Oak (June 20, 1877). When a new growth of wood takes place within the hollow of an old tree, its girth increases, and the bark is stretched by the pressure from within. The Royal Oak has the appearance of a tree that has done growing. Everybody recognises this appearance of finished growth in a little old man, but comparatively few persons can detect it in a tree. I do not think the Royal Oak has much more power of growth; and if the circumference of the trunk has really increased 11 inches in the past eleven years, that may have arisen from the same cause as in the case of the aged Oaks in Bagot Park.

As to Dr. Stukeley's "young thriving plant" growing near its parent, it is hardly likely that a seedling would survive the grazing of Farmer Penderel's pigs and cattle from Hobbal Grange, and of Farmer Francis Yates' cattle of "The Wood," and of all the live stock from the half-dozen little homesteads near. These plants, therefore, must have sprung up after the building of the wall, and that would make the present tree about 200 years old. Can any of your correspondents point to an Oak so large, and yet so young, growing in an uncongenial soil?

The road from "fertile Donington" to the Royal Oak, if you will allow me to quote my letter of 1876, runs through farms set thick with hedges. "There is a gradual ascent for half-a-mile to Boscobel House, where the clay is capped by a drift of gravel, and the soil is better suited to the Elm than to the Oak. The tree has a full head. There are three withered branches under the crown, and the stump of a branch a little lower, and nine leading and forked branches in the head, crooked by the effects of a rather ungenial soil. The statement that this tree is a seedling of the Royal Oak is absurd; it is at least twice as old as any such seedling, and must, therefore, be the original tree, unless the wall which was intended to be built round it was built round the wrong tree, which is a most improbable alternative. Near the tree are some old Thorns, and some English Elms, on congenial soil, several centuries old, and with a girth in one instance of 12 feet at 4 feet from the ground."

It seems to me that what is needed in this inquiry is evidence of the usual size of Oaks of 200 years old, growing on soil similar to that at Boscobel.

Mr. Breese, of the Petworth Gardens, informs me that the dimensions of the Cecil Oak in Petworth Park are:—Circumference of trunk at 4 feet from the ground, 16 feet 3 inches; length of trunk from ground to crown, 13 feet; height of tree, 52 feet; spread of branches, 95 feet in diameter. The Cecil Oak is about 250 years old, and is now past its best. The trunk appears sound, but many of the large limbs are fast going to decay. Mr. Breese says, it has lost some large limbs during the past ten years. The soil is a rich loam, 18 inches deep, resting on a bed of stony yellow clay. *H. E.*

HARDY STONECROPS: SEDUMS.

(*Continued from p. 717*)

III. ANNUAL OR BIENNIAL.

* Stamens, 10—12.

† Leaves flat, tufted on the barren shoots.

47. S. SEMPERVIVOIDES, Fischer, in Marschal Bieberstein, Flora Tauric. Caucas. Suppl., p. 213.

Pubescent, 4—8 inches high. Habit of Sempervivum tectorum.

Rosette of 40—50 obovate wedge-shaped leaves, about 1 inch by ¾ inch. Leaves on the flowering stem clasping, greenish red, oblong-acute.

Inflorescence a many-flowered panicled cyme, 2—4 inches in diameter; peduncles pilose, ultimate pedicels about the length of the flowers.

Sepals deltoid, acute, pilose.

Petals ¼ inch, lanceolate acute, bright red, twice the length of the sepals.

Stamens equalling the petals.

Carpels 5.—Fl. July.

Syn. S. sempervivum, Ledeb. in Spreng. Syst. ii., 434; DC. Prod. iii., 404; Boissier, Fl. Orientalis, ii., 786.

Asia Minor, Mountains of Caucasus, &c.

A remarkably handsome species, like a Sempervivum, with deep red flowers. It is as yet scarcely known in gardens, but will become a favourite when it is better known. In some gardens Cotyledon Pestalozzæ, Boissier, is grown for this species; see Mast. in *Gard. Chron.* 1877, viii., p. 456, fig. 89.

48. S. CEPÆA, Linn. Sp. Plant. 617; DC. Prod. iii., 404.

Glabrous. Stems tufted, simple or loosely branched, 10—12 inches.

Leaves tufted ½—¾ inch by ¼ inch, obovate spatulate, narrowed to a stalk. Stem leaves opposite, whorled or scattered, narrower than those at the base.

Inflorescence a loose many-flowered panicled cyme; branches spreading, purple spotted, often with glandular hairs; ultimate pedicels longer than the flowers.

Buds ovoid, elongate. Flowers ¼—½ inch in diameter.

Calyx tube very short; sepals lanceolate.

Petals twice the length of the sepals, lanceolate acuminate, white, with a pinkish mid-nerve, often with a few pinkish spots.

Stamens nearly as long as the petals. Anthers purplish.

Carpels glabrous, oblong, ventricose, ending abruptly in filiform styles.

Scales oblong, emarginate.—July.

Baker, in Saund. Refugium, iv., t. 243.

Syn. S. gibbosiles, Allioni; S. spatulatum, Waldst. and Kit. Hung., t. 104; S. strictum, C. Koch; S. tetraphyllum, Sibthorp, Fl. Græc. v., p. 36, t. 448 (*fide* Boissier, *l.c.*); Anacampseros Cepæa, Haworth, Synops. (1812), p. 114.

Western and Southern Europe, Danubian provinces.

A weedy species, cultivated in this country as long ago as 1610. Mr. Saunders remarks that self-sown seedlings come up freely.

49. S. ALSINIFOLIUM, Allioni, Flor. Pedem., t. 22, f. 2; DC. Prod. iii., 404.

Glandular, pubescent. Stems erect, 3—4 inches, forming a loosely branching weak plant.

Leaves on the barren shoots tufted, ½—¾ inch by ¼ inch, orbicular-spatulate, tapering to a stalk.

Inflorescence a lax panicled cyme with a few leafy bracts. Flowers ¼ inch in diameter, white.

Flower-buds sub-globose.

Sepals linear, oblong acute, pink-spotted.

Petals twice the length of the sepals, oblong obovate, sharply acuminate, keeled.

Stamens white or pink. Anthers short, oblong.

Carpels erect, somewhat compressed, ending abruptly in an erect subulate style. Scales truncate, pinkish.—Fl. July.

Piedmont.

Of no value as a decorative plant.

49A. S. STELLATUM, Linn. Sp. 617; DC. Prod. iii., 404.

Glabrous. Stems erect, 3—4 inches, branched at the base.

Leaves on the barren shoots in rosettes, suborbicular crenate stem leaves opposite or alternate, stalked, ¾—½ inch, obovate crenate.

Inflorescence lax, few-flowered, flowers subsessile.

Sepals lanceolate.

Petals reddish, lanceolate, scarcely exceeding the calyx.

Carpels spreading, ¼ inch; styles short.—Fl. July.

Sibthorp, Fl. Græc., t. 446.

Syn. S. deltoideum, Tenore, ex DC. *l.c.*

South Europe, Greece.

I have not seen this species in cultivation, though it is recorded so far back as 1640, and is to be found in Haworth and the *Hortus Kewensis*.

†† Leaves more or less cylindrical, not flat.

50. S. CÆRULEUM, Linn. Mantissa, p. 241; DC. Prod. iii., p. 404.

Glabrous, or pilose in the inflorescence. Stems 2—3 inches high, branched from the base.

Leaves tufted, ¼ inch, oblong obtuse, pale green spotted with red.

Inflorescence a lax many-flowered cyme, 1 inch in diameter, with recurved branches.

Flower-buds oblong obtuse. Flowers 5—7-merous, ¼ inch in diameter.

Sepals oblong obtuse, half the length of the petals.

Petals oblong obtuse, pale blue.

Filaments whitish; anthers oblong, subglobose, reddish brown.

Carpels white, erect, hairy on the inner surface, gradually tapering to an erect style. Scales emarginate—Fl. July.

Syn. S. azureum, Vahl. Symbol. 2, p. 51; Desfont. Fl. Atlant. i., 362, not of Royle.

Mediterranean region.

A charming little species, its small pale blue star-like flowers being very attractive. It seems to be rare in cultivation. Our description was taken from a plant at Kew.

The following species, named in some catalogues, I have not seen in cultivation, and as they are of little importance from a gardener's point of view I pass them over with the mere mention and reference :—

50 A. *S. annuum*, Linn. Sp. 620; DC. Prod. iii. 409; Flor. Dan. t. 59; Boissier, Fl. Orient. ii., 792.—Flowers yellow—Syn. S. saxatile, DC., *fide* Boiss.; Flor. Græca, t. 450.—Alpine and Northern Europe.

50 B. *S. atratum*, Linn. Sp. 1674; DC. Prod. iii., 405; Jacq. Austr., t. 8; Boiss. Fl. Orient. ii., 792; DC. Pl. Grasses, t. 120.—Flowers whitish.—Alpine Europe.

50 C. *S. pallidum*, Marsch. Bieb. Fl. Taur. Caucas. i., 353; Boiss. Fl. Orient. ii., 790.—Syn. S. Urvillei, DC. Prod. iii., 408.—Apparently the same as S. hispanicum, but with 5-merous flowers.

50 D. *S. villosum*, Linn. Sp. 768; DC. Prod. iii., 405; Engl. Bot., t. 394; DC. Pl. Grasses, t. 70; Hook. Stud. Flora, p. 143.—Glandular, pubescent, flowers white, or pink.—Alpine and Northern Europe. Mountains of England and Scotland. Grows in bogs and damp peaty soil.

Of the following I have only seen incomplete specimens, too incomplete to establish its identity :—

50 E. *S. Wightmannianum*, or *S. Whitmanni* of gardens.—Annual, 3—4 inches. Stem branching, glandular. Leaves crowded, alternate, linear, club-shaped, greenish, studded with crystalline pimples. Cymes many-flowered. Sepals deltoid, lanceolate. Petals apparently pinkish, lanceolate.

** Stamens 5.

Under this last head may be mentioned a few inconspicuous annual species of considerable interest as furnishing a link between the genera Crassula and Sedum. In the fact that they have only five stamens (alternating with the petals) they are identical with Crassula, but the petals are separate, not connected at the base. They constitute, with a few others not known to be in cultivation, the section Pro-Crassula of Grisebach. As they are not of much interest to the gardener, a full description is not given, but the references will indicate where it is to be found.

51. *S. cæspitosum*, DC. Prod. iii., 405; Baker in Saund. Refug. v., t. 295.—Crassula cæspitosa, Cav. Ic., t. 69, f. 2; C. Magnolii, DC. Fl. Fr. v., 522.—Flowers white.—Mediterranean, Crimea.

52. *S. rubens*, Linn. Sp. Pl., p. 619; DC. Prod. iii., 405; Plantes Grasses, t. 55; Baker in Saund. Refug., t. 242.—Crassula rubens, Linn.; DC. Plantes Grasses, t. 55. Aithales rubens, Webb, Phyt. Can. i., p. 178.—Flowers white or pink.—South Europe, Asia Minor, Canaries.

53. *S. andegavense*, DC. Prod. iii., 406.—Crassula andegavensis, DC. Fl. de Fr. v., 522. C. globulifolia, Moris, Stirp. Sard., fasc. 1, p. 20.—Corsica, France.

With this I bring to a close these descriptive notes on the hardy species of Sedum. Completeness, from a botanical point of view, has not been aimed at, but mention, more or less detailed, has been made of all the species known to be in cultivation as hardy plants—omitting those grown in the greenhouse. The descriptions have been drawn up almost entirely from living specimens in the garden at Kew, or in my own collection; books and herbaria having been made use of simply to check the descriptions and supply references to plates. Of those species marked with a letter as well as a number I have seen no fresh specimen. For the opportunity of examining and studying the Kew plants, my thanks are specially due to the officers of that establishment, who have granted me every facility for the purpose. I have also to record my thanks to the Rev. H. G. Ellacombe, to Mr. Geo. Maw, to Mr. Joshua of Cirencester, to Messrs. E. G. Henderson of the Pine-apple Nurseries, Parker of Tooting, and Ware of Tottenham, who have kindly furnished me with specimens and notes. My obligations to Mr. Baker have already been noted, but they are deep enough to justify repetition. In the following number an index of the species will be given. *Maxwell T. Masters.*

OSMUNDA REGALIS AT CAMSTRADDAN.*

OSMUNDA REGALIS is justly a favourite with all lovers of plants. It is one of those plants which adapt themselves to a great variety of circumstances æsthetically considered. I have seen it in the fernery amid the richness and profusion of Australia and New Zealand—under the verandah of the well-to-do merchant, vying with rustic columns and trailing Clematis—at the door-chink of the cotter among Chinese Roses and pendent Fuchsias; and in all cases it seemed adjusted to, and in perfect harmony with, its circumstances. At Camstraddan, growing in a bog, and submerged for several months every year in water, it rises in spring from its watery lair and aspires in many cases to a height of over 6 feet, and continues green and beautiful long after the autumn rains have caused Loch Lomond to rise and surround it to a depth of 2 or 3 feet.

Those who cultivate this plant, and who know the small quantity of water required to grow it successfully, will be astonished to see it in this watery habitat assuming dimensions that actually bid defiance to any specimen of cultivation I have ever seen. Here one finds it with a stem (composed of the bases of decayed fronds) 3 or 4 feet high and from 4 to 8 inches in diameter. Some of these stems lie prostrate on the ground in curious disorder, while others lean their formless masses against a coppice stock. The fronds, as already stated, reach in many cases to a height of 6 or 7 feet, and are often upwards of 3 feet across at the longest pinnæ. The fact is here worthy of notice—the best fronds are never formed on the largest stems; on the contrary, when the stem has attained to large dimensions, the fronds are then proportionately diminished in size. Most of you will have observed this same characteristic in the case of another fine Fern, a native of America. I refer to Struthiopteris pennsylvanica, in which you find exemplified that strange law of Nature, namely, that the very energy of life is a condition of death. Is there no explanation of this apparent paradox of Nature?

There appear, indeed, to be several causes operating to produce this phenomenon, three of which may be noticed. The first may be called morphological, and consists of a marked constriction of the stem of this Fern at the point of its junction with the root. When the plant grows high and is shaken by winds this constriction is seen to mark a weak point in the stem, and the fibro-vascular tissue concerned in conveying the fluids must get ruptured by the swinging to-and-fro of the stem, causing a diminution of the ascending materials, and a corresponding diminution of the plant's food. The second may be regarded as a physical cause, and consists in decay taking place at the constricted part, Ferns having no proper bark to prevent the lodgment of water. The third may be reckoned physiological, and is found in the fact that, as Ferns do not grow circumferentially, no new channels for conveying the fluids are ever added to the stem; the result being that, as the stem increases in height, the existing channels become inadequate to maintain the plant in its wonted luxuriance, the fronds therefore annually diminish in size, and ultimately cease to appear on large stems.

I have gathered Osmunda regalis in several localities in Dumbartonshire, in Glen Lòin at the head of Loch Long, and near Upper Inverglass on Loch Lomond side, but nowhere have I found it in such abundance and in such fine condition as at Camstraddan. Why is this? and has Nature been unusually kind in this case? are questions which, in our attempt to reply, must lead to a few sentences on Camstraddan and Loch Lomond.

The lands of Camstraddan were owned for a period of 431 years by a family named Colquhoun. In the year 1826, Robert Colquhoun, sixteenth owner of Camstraddan, sold them to Sir James Colquhoun, tenth baronet of Luss, and they have since formed part of the Luss property. The original site of the tower of Camstraddan is a subject upon which contradictory opinions have been expressed. If we may credit Camden and the Imperial Gazetteers, the tower and orchard were situated where Loch Lomond now spreads its ample waters. A collection of stones, seen when the loch is low, in the bog of Camstraddan, is said by these authorities to be the remains of the mansion. This view suggests one of two things—either the loch has risen, or the alleged site of this old mansion has been depressed. By the kindness of William Colquhoun, Esq., Rossdal, I have been favoured with a perusal of a work by Mr. W. Fraser (Edinburgh, 1869), on the "Chiefs of Colquhoun." The author states that the stones in the bog, said to be the remains of Camstraddan tower, exhibit on examination no traces of masonry, and seems to think that they, at best, but served to mark a shallow. Meanwhile I am more desirous of obtaining proof of the apparent rise of the loch than to find the exact site of this old tower; but should any member present wish to have some credible information in regard to it, I may state that in the year 1684 the then proprietor entered into a contract with one Macauslane, a Dumbarton mason, to add three storeys to the original building; for which work Macauslane was to receive so much money, and so much butter and cheese!

This inquiry into the supposed rising of the loch is fruitless enough so far, and, what is worse, I know of no book or record that gives the slightest aid in the matter for the last two centuries. And as the subject is difficult of proof in a satisfactory manner, we may leave Macauslane to chew his butter and cheese and mix his mortar, while we fall back on such rough-and-ready indications of proof as appearances suggest.

Well, suppose it is midsummer, and that you are standing or walking on the shore in the neighbourhood of this bog in which Osmunda regalis grows. There is stretched before you, if you turn your back upon the loch, what is called a hag of coppice. This coppice, like Osmunda regalis, is of Nature's planting. Roughly speaking it is composed of Oak, Ash, Birch, Alder, and Willow. Other ligneous plants, such as Viburnum Opulus and Myrica Gale, are also prevalent. A little inland from the summer shore, these species are found in mixed fashion; but nearer the water a kind of definite order prevails; it is somewhat like this :—Nearest the water you find Myrica Gale. A little further off it you find a few species of dwarf Willows (Salix) mixed with Myrica Gale and Alder (Alnus glutinosa). Still further from this shore you find, in addition to all the above, a few specimens of Ash and Goat Willow (Fraxinus excelsior and Salix caprea). At a still more remote distance from the water you find Ash, Birch, Alder, Oak, Guelder Rose, and Honeysuckle (Fraxinus excelsior, Betula alba, Alnus glutinosa, Quercus pedunculata, Viburnum Opulus, and Lonicera Periclymenum). This order means that Nature, whether as landscape gardener or forester, plants species on soils and situations adapted to their growth; or rather, however profusely she may plant, she grows only those species for which the soil and situation are predisposed,

* Read at the November meeting of the Scottish Horticultural Society.

Perhaps it means a little more than this. The Osmunda regalis is not found where Myrica is rampant, neither where Willows and Alder abound. It follows hard in the retreat to the high ground of the Oak and Guelder Rose. Where you find it nearer the loch than these it is usually clinging to a coppice stock on a slightly raised site. Remains of it are found in abundance between the Oak zone and low-water, proving clearly, to my mind at least, that this Fern is retreating from the water. And still the loch may not be rising generally. The water may be advancing, this Fern may be retiring, and both phenomena may be accounted for by a depression of the land at this particular place. To prove satisfactorily that a loch like Loch Lomond is rising generally must be a work of many years' careful observation.

While Loch Lomond has many tributaries, it has but one outlet—the River Leven, which commences at Balloch and ends at the Clyde, in the neighbourhood of Dumbarton. This Leven is a navigable river, and used to be the highway of craft called scows, luggers, and gobbarts, which were carried down by the current and hauled up by horses. This traffic has of late years ceased to a large extent, and one result is, that the bed of the river at its high end has got silted up. This silting, which is common at the outlets of many lochs, was formerly prevented by frequent disturbance from traffic; in which case the silt was stirred and ultimately carried down the river. This would seem to indicate that the low-water of Loch Lomond may now be higher than formerly. And if the low-water be higher, then it follows that an average amount of rainfall within the area of the loch's sources would cause a corresponding increase in the depth at high-water. It is possible, however, to infer too much from a special rise of the loch. Such a rise only proves that a specially heavy rainfall has occurred within the range of its tributary district in a specially short time.

Sheep-farmers in the west of Scotland seem to have caught the contagious spirit of the nineteenth century, and draining of hills is very common. One result of this enterprise is, that where such drains empty themselves into the tributaries of the loch, the banks of these rivers are torn by the force of the current. This lets loose a vast quantity of earth and *débris*, which, after settling at the bottom of the loch, must tend to raise the water and cause it to encroach on the land.

Further than this it is difficult to go at present. Though I cannot produce absolute proof that this loch is rising generally, I am nevertheless profoundly suspicious that it is so rising, and that by-and-bye the place which knew the Royal Fern shall know it no more.

I was told some time ago that a plan to drain a considerable portion of Loch Lomond, by embanking between the islands that stud the loch betwixt Bandrie and Balmaha, was put into the hands of the trustees of the late Sir James Colquhoun, for their consideration. No doubt the plan would be feasible, and would hold out, among other things, a few hundred acres of additional land to the trustees. I know not exactly how these gentlemen thought concerning the general plan, but I think the schemers would be answered by them in a way corresponding to that adopted by the first Napoléon when his infidel *savans* had proved to their own satisfaction that there was no God:—"Very ingenious, sirs—very ingenious; but who made those things up there?" Or it may have been after the manner of the old Scotch wife, who, on being vulgarly saluted one day by a cockatoo, turned her eyes in the direction the salutation came from and exclaimed, "Guid keep me, but the impudence o' some folk nowadays is past a' bearin'."

If in all this there is one solitary lesson for the practical horticulturist it seems to be this—plant your Osmunda regalis on a wet site, in the margin of a pond if you like. See that it has plenty of peat and mud-silt to feed upon, and rival vegetation to shade it from the sun's rays. Do this, and have no fear of results. *James Gordon, Forester, Luss Estates, Dumbartonshire.*

TRADE MEMORANDUM.

THE necessity for caution in accepting references without due enquiry is instanced by a case now before us, in which a firm in a North of England shipping port appear to be in the habit of giving references to well-known firms without their sanction, and which they would in some instances feel it their duty to decline. If traders would only take the pains to consult the so-called referees, they would often be saved the vexation of making bad debts or giving long credit.

PLANT PORTRAITS.

AMORPHOPHALLUS (?) LACOURII, Lind. et And., *Illustration Horticole*, t. 316.—The leaves only of this new Aroid from Cochin China are described, so that its generic position remains doubtful. The petioles are transversely mottled with yellow markings, the leaves apparently pedatisect, the ultimate segments lanceolate, yellow spotted. Introduced by M. Linden.

ANEMONE NEMOROSA VAR. ROBINSONIANA, *Gartenflora*, t. 945.—A form of the Wood Anemone, with pale blue flowers like A. apennina.

ASPLENIUM PALEACEUM, R. Br., *Illustration Horticole, t.* 315.—Fronds pinnately divided with a hairy rachis, pinnules obliquely ovate, serrated, auricled at the base. Tropical Australia.

AZALEA MOLLIS, *Illustration Horticole*, t. 317.—Two varieties are figured—1, aurea floribunda, pale yellow; 2, Prince Troubetzkoi, reddish orange.

CINERARIAS, DOUBLE, *Florist*, t. 475.—These are the finest double Cinerarias we have seen. They were raised by Messrs. Dicksons of Edinburgh. The flower-heads are in each case large and globular: 1, Pink Perfection, is pale pinkish rose; 2, Queen of Violets, is a rich deep purple; 3, The Prince, is a deep magenta-rose.

CRINUM MACOWANI, Baker, in *Gardeners' Chronicle*, 1878, p. 298; *Botanical Magazine*, t. 6381.—A fine Crinum, with large rose-tinted flowers on very long stalks enclosed within very large spathes. Natal. Flowered at Kew.

DELARBREA (?) SPECTABILIS, Lind. et André, *Illustration Horticole*, t. 314.—A handsome Araliad with spotted stem, unequally pinnate leaves, the pinnæ lobed and serrate. Native of New Caledonia.

DENDROBIUM BRYMERIANUM, Rchb. f., in *Gardeners' Chronicle*, 1875, part 2, p. 323.—A Dendrobe with large orange flowers and a hairy lip, deeply fringed with tortuous ciliate laciniæ. Burma. Hort. Veitch.

DIETERIA CORONOPIFOLIA, Nutt., *Gartenflora*, t. 947.—A handsome blue-flowered Aster-like Composite, with irregularly pinnatisect leaves. Hardy perennial. Native of Missouri.

FRITILLARIA HOOKERI, Baker, *Botanical Magazine*, t. 6385.—A species like Fritillaria macrophylla (*i.e.*, Lilium Thomsonianum), intermediate between Lilies and Fritillarias, but nearer the latter. Introduced from Sikkim by Mr. Elwes. The leaves are lanceolate. The bell-shaped flowers are of a lilac colour, arranged in racemes; the perianth segments have a pit at their base like a Fritillary. Fl. Summer.

IXORA SPLENDENS, *Florist*, t. 474.—A gorgeous variety, raised by Messrs. E. Cole & Sons. The leaves are oblong-obovate, the flowers of the richest carmine-scarlet, grouped in dense globular heads.

LILIUM AURATUM, Lindl.; Elwes, *Mon. Lil.*, part 5.—This noble Lily, which was first described in these columns in 1862, p. 644, is now so well known that no further detail need be here given. The variety figured is not the finest we have seen.

LILIUM CANADENSE, Linn.; Elwes, *Mon. Lil.*, part 5.—A species with verticillate leaves, flowers in umbels, campanulate, orange-coloured and spotted, the colours varying in different varieties. The manner in which the thick stolons, with their investing scales, gradually pass into bulbs, is very significant.

LILIUM CORDIFOLIUM, Thunb.; Elwes, *Mon. Lil.*, part 5.—A noble and very peculiar Lily, with large heart-shaped leaves and terminal spikes of large, white, somewhat two-lipped flowers; the stamens and style bend so as to present a convex surface towards the upper part of the flower and to bring the anthers and stigma in a position to face the blotches on the three lower segments—an adaptation connected with the visits of insects to the flower, the insects being attracted by the honey and perfume, and so guided by the spots that they must needs come in contact with the anthers and with the stigma. Native of China and Japan. See *Gard. Chron.* 1877, p. 305, fig. 6.

LILIUM ELEGANS, Thunb.; Elwes, *Mon. Lil.*, part 5.—This is the species usually called Thunbergianum. It is very like L. bulbiferum without the bulbils. It has many varieties.

LILIUM SPECIOSUM, Thunb.; Elwes, *Mon. Lil.*, part 5.—The well-known and very beautiful Lily, sometimes called in gardens L. lancifolium. It is usually stated to be a native of Japan, but was introduced into those islands from Corea. It is also a native of China.

LILIUM WALLICHIANUM, Schultes, fil; Elwes, *Mon. Lil.*, part 5.—A species with scattered, linear, lanceolate leaves, and solitary, trumpet-shaped, white flowers of large size. Native of subtemperate Himalaya from Kumaon to Nepal.

LILIUM WASHINGTONIANUM, Kellog; Elwes, *Mon. Lil.*, part 5.—A very remarkable and handsome Lily, figured by us in 1871, p. 709. The bulb is very curious, being more like a rhizome with long, erect, fleshy scales. The leaves are verticillate, and the numerous bell-shaped pink or white flowers borne in a dense pyramidal raceme. The specimen figured was an extraordinarily fine one, grown by Mr. Bateman in a London garden at South Kensington. The plant is a native of California.

MAXILLARIA GRANDIFLORA, *Floral Magazine*, t. 322.—A handsome species, in the way of Lycaste, with large whitish flowers, the relatively small lip edged with purple. Native of Peru. Cool Orchid treatment.

NEW PICOTEES, *Floral Magazine*, t. 324.—1, Alice, golden-yellow ground, petals edged and striped with scarlet; 2, Lord Beaconsfield, buff ground, heavily edged with red; 3, Henry Tait, ground bright yellow, heavily edged with scarlet. Three fine varieties, raised and sent out by Mr. Turner.

ODONTOGLOSSUM CERVANTESII MAJUS, *Illustration Horticole*, t. 313.—A large variety of a well-known plant.

PEAR, DOYENNÉ D'ALENÇON, *Bulletin d'Arboriculture*, August, 1878.—Sometimes called the new Doyenné d'Hiver. Fruit ovoid, irregular, eye small, in a shallow basin, skin rugose, reddish-yellow spotted with brown and grey. Flesh white, juicy, sweet, aromatic. December—March.

PEACH, LIEFMAN'S, *Bulletin d'Arboriculture*, July, 1878.—A middle-sized fruit, flattened at the top, pale amber-coloured streaked with rose. Flesh white, sugary, vinous, perfumed. August.

ROSE HARRISON WEIR, *Floral Magazine*, t. 321.—A fine English-raised Rose, raised and sent out by Mr. Turner, and said to have been a cross between Xavier Olibo and Charles Lefebvre; the foliage resembles the latter, the flowers those of the former variety, but are not quite so dark.

ROSA POMPON DE BOURGOYNE, ROSA PARVULA, ROSA PAQUERETTE, *Journal des Roses*, September, 1878.—Three charming small and double-flowered varieties. The first is the Centifolia pomponia of Lindley, with rose-coloured flowers; the second has flowers not larger than a sixpence, very double, and of a blush tint; the third—the Daisy Rose—is a seedling from the Japanese P. polyantha. All three are delightful.

RUBUS NUBIGENUS VAR. MACROCARPUS, H. B. K., *Illustration Horticole*, t. 312.—According to the figure a magnificent Bramble or Raspberry with pink flowers and red fruits 2 inches long and nearly as much wide. Flavour said to be agreeable, but lacking aroma. This fine plant was well known to botanists, but it remained for M. André to introduce it from Bogota to M. Linden's nursery. M. André recommends its culture in the south and west of France. It would be a grand plant for the hybridisers.

RUELLIA ACUTANGULA, Nees; *Botanical Magazine*, t. 6382.—A Brazilian shrub, introduced by Mr. Bull, with elliptic acuminate leaves and terminal forked cymes of orange-scarlet flowers. A very handsome stove plant. Fl. May.

LIGUSTRUM SINENSE LATIFOLIUM ROBUSTUM.

THIS is a variety of the Chinese Privet, of much more robust growth than the ordinary form of the species in general cultivation. This robust growth is its distinguishing characteristic. The leaves on the vigorous young shoots are twice the size of those of the ordinary kind, and the plant is of a remarkably free-flowering habit. Amongst that class of evergreens of which L. sinense may be taken as an illustration, this new or newish variety must be regarded as a fine acquisition, as indeed our illustration (fig. 125) sufficiently shows.

We saw it a few weeks since in the nursery of Mr. A. Waterer, at Knap Hill, Surrey, and were particularly pleased with its bold and striking aspect, its smooth, clean-looking, ample leaves, and its fine paniculate inflorescence. The flowers are white, as in the type. We understand that Mr. Waterer obtained it from the Continent. *T. M.*



FIG. 125.—LIGUSTRUM SINENSE LATIFOLIUM ROBUSTUM.

Notices of Books.

Six Months in Ascension: *an Unscientific Account of a Scientific Expedition.* By Mrs. Gill. Murray. 8vo, pp. 285.

In 1877 the "opposition" of Mars offered the most favourable opportunity of observing the solar parallax, and of determining the distance of the sun from the earth. Mr. Gill, with the aid of the Royal Astronomical Society, and with instruments of precision lent by Lord Lindsay, betook himself in that year to the island of Ascension with a view of determining the problem. The results of various observers place the distance between the two bodies at between 92,000,000 and 93,000,000 of miles. Lest any should feel surprised at so large a variation in the estimates, we are told that "if any one desires to form an adequate idea of the difficulties of measuring the sun's distance to 1,000,000 of miles, let him try to measure the thickness of a florin piece, looked at, edge on, a mile off." The astronomer was fortunately accompanied by his wife, and the present work is the record of their joint experience in this remote islet. An introduction by Mr. Gill states with reasonable clearness the object of the journey, so far as observations, measurements, and computations go, and then we plunge into the narrative—we might almost call it the log of the expedition—written by Mrs. Gill. When one reads of an oceanic islet 800 miles distant from the nearest land, and that land an islet not much bigger than itself (St. Helena), and further read what a mere heap of cinder and dust it is, one might wonder what a lady could have to tell of a six months' sojourn therein. Surely the record would be one of discomfort and *ennui*. No such thing. Mrs. Gill was intensely interested in her husband's work, and naturally she was intensely interested in him. The consequence was that privations and discomforts were made light of, while the lady's good sense and tact seem to have served her in good stead, by enabling her to make the best of the few advantages before her. In any case, she has given us a lively, animated account of the voyage, of the establishment of the observatory, the character of the assistants told off to assist her husband, of the fears and hopes attendant upon the observations, and last, not least, of the natural phenomena of the island. On the way out the astronomer and his wife touched at St. Helena, and a chapter is devoted to the beauties of that island—beauties so great as to make one wish that the six months' sojourn had been in that island, and not in Ascension; however, we have already a good monograph on the island of St. Helena, while far less is known concerning Ascension. This latter islet has, indeed, a special interest for us. For some ten years the former Editor of this journal was regularly consulted by the Admiralty as to the best means of bringing this cinder-heap, or portions of it, under cultivation. Dr. Lindley, aided by the reports of the several Commandants of the island, drew up several reports on the means to be adopted to increase the fertility of the island, and despatched several gardeners, by whose exertions much was done to enhance the productiveness of the island. The reports of Mr. Peter Wallace, who for some years acted as gardener and bailiff on the "Green Mountain," are full of interest, and it is a matter of regret that Mrs. Gill should not have been aware of the difficulties that have been overcome. The island, in fact, is for the greater part of its extent a heap of cinder and lava, but near the centre of the island rises the "Green Mountain," a mass of trachyte nearly 3000 feet high, on the summit and upper part of which a loamy and fertile soil is found over a considerable area. Here what cultivation is possible is carried out, here rise the springs which furnish the somewhat scanty and precarious supply of water for the naval station at "Garrison," some 6 or 7 miles distant. How things may be now at the garden, Mrs. Gill does not tell us, but in former years no slight inconvenience was caused by the jealousy of naval and marine officers respectively, and by the disinclination of both to work comfortably with a civilian gardener. Putting aside these difficulties the climate of Green Mountain seems to be not unfavourable on the whole for cultural purposes, the great drawback being the heavy gales which sweep over the island and occasional spells of drought. Nevertheless vegetables, such as Cabbages, Leeks, French Beans, Pumpkins, Sweet Potatos, and the like grow well; while Pinasters serve to afford shelter, and Eucalypti and other trees condense the moisture of the atmosphere. A few head of cattle and numerous goats pick up a subsistence on the Purslane which covers the lava at the upper part of the mountain. Pine-apple plantations were also established in Mr. Wallace's time, though whether they are continued now Mrs. Gill does not say. Probably she would have done so were they still in existence, for she comments on the fact that while turtle is abundant and cheap, vegetables are very dear, and milk and water are scarce and dear articles. Soon after landing Mrs. Gill set out to buy and lay in provisions. But this was by no means so simple a process as she had expected.

"No butcher, no dairy, no greengrocer, no fishmonger—only this wretched canteen, more full of flies than of anything else. I got quite tired and hot with the frequent 'No, madam, we don't keep it,' or 'Very sorry, but we are just sold out.' . . . I then turned to the open door with 'Island Bakery' written over it, where a pallid baker stood at the threshold wiping the perspiration from his forehead. Evidently he made his bread by the sweat of his brow. 'Can I have some bread?' I asked boldly, thinking there could be no difficulty here. 'All served out for the night, ma'am.' 'Oh, dear! and when do you bake more?' "The day after to-morrow," and my heart was sinking, when the good-natured baker added, 'but I can make you a loaf now if you like.' Then I revived. Now about milk, which David and I were wont to consider a necessary of life. I was told a mule brings that down every morning from Green Mountain, *when there is any*. A bell rings at 7 o'clock, and every one runs for a 'gill,' except when there are many sick in hospital—then they get it all. This was lively! And vegetables? 'There are only Sweet Potatos to be had, and none will be served out till next Friday.' Then came the most important question of all—'Where shall I find the butcher?' 'Oh,' said Hill, with a grin, 'there ain't any butcher.' One of the Marines kills sheep twice a-week, and on Saturday a bullock, which is rationed out, so much to each man, and our rations are very small just now, as the sheep and bullocks are starving for want of food and water. Hardly any are killed *that have not fainted first*.' I thought that I should faint too; and I could only gasp despairingly, 'But surely there's plenty of fish?' 'Generally, ma'am; but not when the rollers are in.' Utter collapse. . . . We were indeed in a new country, and one that taught us, with many other things, the fallacy of the belief that gold commands everything. Not even a Rothschild could buy a juicy leg of mutton here, nor enjoy the luxury of a fresh salad with his cheese. That mutton!—shall I ever forget it? Our first *gigot*, of hock-bottle shape, would have made an English butcher faint, and ought to have been sent to the British Museum, there to consort with time-toughened mummies and testify to future generations the high state of training attained by Ascension sheep in 1877. Poor sheep! they were almost starving; and so were the miserable gaunt-looking bullocks that we sometime saw prowling around the house at night, having wandered over 5 miles of terrible road from Green Mountain in search of food and water. I could not bear to see them in such distress, and yet we could not relieve them, being ourselves limited to one gallon of water a day for all purposes, and our whole allowance would have been but a drop on the tongues of these poor animals. . . . . Verily all one's preconceived ideas of the relative values of things were here turned upside down. Water carefully measured and treasured, Potatos *4d.* a lb., occasional Cabbages from St. Helena knocked down by auction at 1*s.* 6*d.* each, milk priceless, and turtle soup for nothing."

It would be unfair to quote Mrs. Gill's account of her husband's proceedings on the eventful day, the hopes and fears, the dread of intruding clouds or obscuring fog, the ultimate triumph. It is told simply and delightfully, and makes the reader sympathise with the zealous astronomer and his courageous wife.

After their wearisome journeys over the rough lava, the mishaps they met with, and the real hard work of the observatory, the explorers amply earned a holiday, and they naturally spent it in exploring the island, turning their first attention to Green Mountain and its environment of extinct craters.

Mrs. Gill makes no pretence to be a botanist, or she might have told of the Ferns and Brambles on the mountain peak, interspersed with Buddleia madagascariensis, white Mulberry, Furze, Melia Azederach, the "Pride of India," Wattles, and Casuarinas. In the ravines Banana plantations are very productive in good seasons. The average annual amount of produce in Mr. Wallace's time was 120,000 lb. of vegetables and 280,000 lb. of fodder, consisting of the haulm of the Sweet Potato, Maize, green Oats, and Guinea-grass. The value of trees for shelter may easily be estimated in such a situation. The first gardener sent out, Mr. Wren, was fully aware of this, and planted with much success. Mr. Wallace followed the same plan, and notes how the moist vapour coming into contact with the relatively cool leaves of the trees becomes condensed, so that under large smooth-leaved trees the "condensation is often like a heavy shower of rain." How important this is where every drop of water is of consequence is obvious. The trees and shrubs most efficient in this way Mr. Wallace reported to be Laurel, Holly, various species of Acacia, Ficus, Eucalyptus, and Pinus. The rainy season appears to be from September to December, and again in April and May, but the total rainfall is capricious and at best very small for a tropical island.

The reports of Mr. Wallace show that there is abundance of fertile soil on various parts of the Green Mountains which only needs means and labour bestowed on it to become very productive. The opening of the Suez Canal, however, has diverted much of the traffic, so that fewer ships than formerly call for provisions, and the island therefore is of such comparatively little use in time of peace, that it is questionable whether any further steps will be taken to develope what resources it has. Mrs. Gill's book gives but little indication of any extension of cultivation, and her visit appears to have been paid after a season of unusual drought.

It is interesting to compare her account of Green Mountain with that of Mr. Wallace.

"Unlike that of most mountainous countries, cultivation on Ascension commences at the top, but unfortunately it ends there. In ordinary times an oasis of 4000 acres decks the mountain with a green cap, but in this season of drought the cap had shrunk to a mere shred, and we were very near the top indeed before our eyes were refreshed by a glimpse of real verdure. Stunted Aloes [Agaves probably] and Prickly Pears appeared at intervals; that was all. But the delightfully cold wind, now rushing down upon us, banished all feeling of disappointment, and at last I was stirred into enthusiasm at the sight of a little family of Ferns, hiding coyly from the sun under a wild Olive tree. After this things continued to improve, and for some yards, under the barracks, the native rock covered itself with a robe of faded green and put forth trees, under the shade of which we reached the top. . . . Near the top of the mountain are the farmyard and a small barrack for twelve or fourteen men, who attend to the cattle, the water supply, the garden, &c. Here we found Hill, who had preceded us with the luggage, and with him a sergeant of Marines, who, taking our pony by the bridle, led her forward through a stone archway, surmounted by a very rusty bell, into a really pretty garden. I could hardly contain my delight, and yet it was no gorgeous vision that burst upon me; only seven or eight large shady trees, dotted here and there along one side of the path, and beyond these, and under their shade, about half an acre of garden-ground, broken up into plots of young Turnip, Parsnip, Parsley, and other vegetables. A single Cocoanut tree and a clump of Banana with tattered yellow leaves grew against the end of a long, low cottage, which stood here empty for our use. On the side facing the east a narrow projection was built on, and in the angle thus formed there were—Oh, joy of joys!—a few yards of fresh green grass."

We have quoted at such length that we cannot cite, as we should like to do, the account of "Wide-awake Fair," as the periodical assemblage of myriads of sooty terns (Sterna fuliginosa) is called, nor the graphic account of a visit to Boatswain-bird Island, contributed by Mr. Gill. This island is a mere mass of rock rising some 300 feet out of the water, its whole surface covered with sea-birds in countless thousands. We shall indeed have failed if we have not conveyed to the reader the impression that this is a very freshly-written book, and one that redounds as much to the credit of its writer as the astronomical work which originated it does to her husband.

PUBLICATIONS RECEIVED.—The Gardener.—All the Year Round.—Sempervirens.—Grevillea.—Der Deutsche Garten.—Gartenflora.—American Agriculturist.—Die Zersetzungsercheinungen des Holzes der Nadelholz bäume und der Eiche von Dr. Robert Hartig (devoted to the investigation of the effects of fungi upon Conifers and Oaks: twenty-one beautiful plates).—Familiar Wild Flowers.—Deutsche Garten Zeitung.—Botanische Zeitung.—Revue de l'Horticulture Belge.—Science Gossip.—Journal of Forestry.—Westnik.—Revue Horticole.—Relazione sulla Cultura de. Cotoni in Italia, per Agostino Todaro.—La Semaine Française.—Bulletin de la Société Linnéene de Paris.—Bulletin, de la Fédération des Sociétés d'Horticulture de Belgique.—Systematische Verzeichniss der in den Gärten d. K. Preuss. Forst Akademie zu Munden.—Vick's Illustrated Monthly Magazine.

Garden Operations.

KITCHEN GARDEN.

The importance of having every description of work which can properly be performed at this season of the year advanced as much as possible is a fact which is well known to practical men, and which cannot be too strongly impressed on the minds of others connected with this important department. As seasonable opportunities occur they should be taken advantage of, to accelerate the work in hand which is most suitable for the occasion. Whenever frost prevails let the wheeling out of manure and other composts be effected, and under such circumstances let it be spread out at once; by so doing many enemies will be fully exposed to its effects, and be thereby destroyed entirely. The beds of Asparagus should claim early attention in this way, and a good covering of manure of the best description should be applied, from 3 to 4 inches in thickness. A sprinkling of salt will also be beneficial; great care should, however, be exercised in applying this, as too much of it will be most injurious—a very thin sprinkling will therefore be ample. At a convenient time the manure on these beds should be turned in to just above the crowns of the roots, and the alleys between the beds should also be forked over and left in as rough a manner as possible, in order that the soil may be well pulverised and made friable for surfacing the beds if required next spring. In like manner should all other vacant spaces of ground be left for the same purpose, no matter whether the soil be stiff or light; in both cases the process is highly beneficial, and therefore commendable. A foretaste of wintry weather, of sufficient force to necessitate vigilance in regard to tender subjects, has already come, and as such weather may at almost any time be expected to prevail in still greater force it will be wise to see that the means which are to be employed to prevent its effects from being detrimental are prepared and at hand for any emergency. Look over the breadths of Cauliflower or Broccoli which may be coming in now, and lift all such as are fit, and store them away in a place where they will be safe from the effects of frost. See likewise that the winter supplies of Lettuce and Curled Endive are commensurate with the requirements, and if not an additional supply of these should be housed without further delay. It will also be advisable to protect with straw or litter a portion of the crop of Celery, so that the daily supply of this edible can be lifted as required. The rest of this important crop should also be fully soiled up as a means of protection. During inclement weather, if fine overhead, let the annual supply of Horse Radish be trenched out and laid in in the place appointed from where it can be taken as wanted: we use the border at the back of a south wall for it. In the process of removal let the ground be perfectly freed of all the small pieces, afterwards it should have a good dressing of manure and be retrenched; then all those pieces which have been selected for planting again should be let into the ground with a long dibber, made specially for the purpose, about 3 feet long, and the soil be placed closely round them in rows 2 feet apart, and from 6 inches to 12 inches from plant to plant. The pieces which we select for this purpose are those which are clean and long, and these are inserted in their entirety. Another autumn's experience has served still farther to illustrate the excellence of the hardy varieties of autumn and early winter kinds of Cauliflowers which we now possess, in the way of Veitch's Autumn Giant and Protecting, both of which have been very fine and plentiful. We have this season been favoured by Messrs. Dickson, of Manchester, with another kind belonging to this class, named Eclipse, which, as far as our experience goes, is a most desirable kind also, and is similar in character to the Autumn Giant and the strain which we had exceptionally true. Past trials which have been made with these kinds of Cauliflower indicate that the plants require to be quickly grown to insure the highest degree of excellence, and therefore they require, like spring Cauliflower plants, to have highly enriched soil, and situations which are naturally somewhat moist. Although it will be necessary during very severe weather, such as now (December 10) prevails, to well cover up Parsley, Lettuce, Endive and Radishes, in frames, they should be opened whenever circumstances will admit, and so also should Cauliflower plants under hand-lights or frames. *G. T. Miles, Wycombe Abbey Gardens.*

HARDY FRUIT GARDEN.

What with trenching, border making, and the adding of fresh soil to all trees with a view to their renovation and the planting of young ones, the past month to fruit growers has been an exceedingly busy one, but with the greater part of this heavy labour now over, the next thing of importance is the pruning, an operation that should always be taken in hand as early as possible, for until it is carried through most other garden work must of necessity remain in abeyance, and to have to be doing it later on when the weather is bad causes much discomfort to those engaged at it. I know that many object to pruning such things as Gooseberries and Currants at this season on account of the havoc birds make of the buds, and particularly is this the case near towns and farm buildings, but as they are generally more destructive in the spring when the bushes are just starting, I never could see much advantage in leaving them to be nibbled at then, and taking the chance of a crop. Instead of doing this it will be found far better to prune at once and syringe the branches with lime-wash and soot, mixed to about the consistency of thin paint, with which any handy man may coat over a great number of bushes in a day. Not only will a dressing of this kind effectually ward off birds, but it destroys all moss and lichen with which the bark may be affected, and thus greatly improves the health of the trees or bushes it may be used on. For years past we have made a practice of applying it about every alternate season on our pyramidal Pears, Apples, and Plums, and always with the most satisfactory results, as it at once checks all tendency to scale, American blight, and other evils already enumerated. The way to prepare it is to get a large tub and fresh lumps of lime with enough soot to colour it when slaked, and use it fresh, as it adheres better then, and is more pungent and effectual in killing any conferva. Before squirting it on, however, it is necessary to stir up and strain the liquid through a very fine sieve in order that it may pass readily through the tube of a syringe, from whence it can be distributed by a dexterous use of the finger to any position required. A still day when the atmosphere is not over dry is the best time to apply it, and to make sure that the coating is sufficient for the purpose desired it is as well to give the trees a second turn at the end of a few days or so, or if not then, sometime again just as the buds are beginning to burst. This will render all safe from the various kinds of feathered depredators. In regard to pruning, the extraordinary development of fruit-buds there is this season affords a capital opportunity for thinning out and shortening back any spurs that may be projecting far from the walls, which, if done on all favourable occasions, such as the present, may soon be got nearer home without the loss of a crop, and the trees not only greatly improved in appearance, but in health and vigour likewise, as gnarled spurs having contracted bark do not admit of a free circulation of sap. It is surprising the hard knifing old Pears will stand in this way, and how regularly they break again if the roots are in anything like proper order; but Apricots, Plums, and Cherries are not quite so free, although all of these may with safety be cut back to a single eye or bud, which will keep the spur alive and assist it to become fruitful again. Excepting with the more experienced cultivators, the practice on receiving trees from the nurseries is to reduce the tops considerably, but a greater mistake than this could not possibly be perpetrated, for if planted with the branches almost entire, and these properly laid in and trained, they would cover more than double the space the first year than they otherwise would, and bear in less than half the time, as they become much quicker established. The more top and leafage a tree is allowed to carry, the more root will it make, and the less chance is there of its producing strong gross shoots, but cut it back, and its growth and strength are concentrated in a few buds that start away rampant in the spring. Some Peaches and Nectarines we had home last autumn and treated in the way I now advocate, cover over 60 square feet of a wall, and will in another year fill their allotted space, as I never shorten under any circumstances till they have done this, unless it may be any of the extreme tips that are not quite ripe, or are bruised through packing or carriage. Healthy young trees, such as are generally supplied, will, if planted early, always break back, and afford plenty of shoots to choose from without having the tops reduced, and I am sure that those who may feel disposed to give this system a trial will never resort to the old practice again. *J. Sheppard.*

FRUIT HOUSES.

The Cherry House.—In the Calendar for this department for the week ending October 19 we recommended that the requisite attention for the purpose of clearing and eradicating all insect pests which may be found in or about this house should be carried into effect prior to forcing operations being resumed. These are most vital matters in connection with forcing operations generally, and no structure which is used for such a purpose should be allowed to escape this ordeal at least once in every year. Presuming, therefore, that this matter has already been accomplished here forcing operations in the earliest division should be proceeded with in a gentle manner at once. Let 40° be the standard at night and 50° in the daytime by artificial means, but to raise the temperature higher than this fire-heat need not be used for the present. If, however, the house rises by natural agencies to 58° give a little air at this point, and take it off before it falls below the same degree. Under such conditions the house will keep moderately moist without very frequent syringings. These should nevertheless be given occasionally whenever the surface of the borders or trees become dry. If not already attended to the mulchings should be applied over the whole surface of the borders, about 3 inches thick, giving those trees which require nourishment the best manure, and others which may be vigorous or gross in habit such material as will merely tend to prevent rapid evaporation and keep the borders uniformly moist. *G. T. Miles, Wycombe Abbey.*

Vines.—Judging from the questions that sometimes appear in the columns of the *Gardeners' Chronicle* some doubt exists as to the best time to cut Grapes for keeping up to the end of May. Muscats and other thin-skinned kinds for use through January may be cut early in December, but Lady Downe's, Gros Colman, Gros Guillaume, and the latest keeping white varieties, which do not attain their full flavour and quality before Christmas, should remain on the Vines until the first week in January, when their removal to a properly arranged Grape-room will insure their keeping fresh and plump over a period of four months without shrivelling or any appreciable loss of flavour. My remarks in a former Calendar having been followed the bottles will be filled and ready for the reception of the stalks, which should be cut off down to the pruning-bud in order that they may have a good hold of the water and admit of the bunch hanging clear and free of the bottle. In their removal the berries should not be rubbed or disturbed, neither should any of the points or laterals be removed from the wood beyond the bunch, as every cut forms a channel for the escape of moisture into the atmosphere of the room. A steady temperature of 50° or 56°, with openings in the roof or ceiling, arranged for the escape of moisture without producing a draught, will be found quite high enough, and the room that requires least fire-heat for dispersing stagnant moisture will be the best for late keeping purposes. The bunches will require looking over once or twice a week for decaying berries; but if properly ripened the loss, owing to the even state of he temperature, will be less than if the bunches were left hanging on the Vines till March. It is perhaps hardly necessary for me to say the Vines should be pruned immediately, in order that they may have a good three months' rest by free exposure on all reasonable occasions, and if they can be spared the injurious influence of damp produced by plants, particularly bedding rubbish, a few degrees of dry frost will do them no harm. Unfortunately, in many places Vines do not receive good treatment after the crop is gathered, and they naturally resent it by producing indifferent crops of imperfectly-coloured Grapes that shrink and shrivel when the leaves fall, if they have not previously fallen victims to insects and mildew. I have again fruited Golden Queen in my early and succession-houses. The Vine is a strong growing variety, the berries have a thick leathery skin, do not put on the fine golden colour I expected under the treatment it received, and the flavour is not quite satisfactory with me. Mrs. Pearson is the exact counterpart of Dr. Hogg in appearance and flavour, less rich in Muscat aroma than the old White Frontignan, and, so far as my experience goes, inferior to the fine seedling raised and frequently shown by Mr. Douglas, of Loxford Hall. *W. Coleman.*

Cucumbers.—Since my last paper was written the weather has been very severe. We have had sharp frosts for the most part, by day as well as night, with little or no sunshine, and when the sun does shine forth to warm the earth which is mocked by frosty winds, it renders the weather very unfavourable for this and other forcing departments, and also render sharp firing, day and night, absolutely necessary in order to keep up anything like a growing temperature. This, even in places where the heating surface is liberally supplied, will be found difficult to do in consequence of the adverse nature of the weather. But more especially must it be found difficult—almost impossible, without having recourse to other resources—to maintain a growing temperature in structures, whether pits, lean-to's, or span-roofed houses it matters not, where the radiating surface is inadequate to supply and maintain a given amount of heat; and from such houses, imperfectly and inadequately heated, if a supply of winter Cucumbers are expected, occasional disappointment may also be expected. In such cases, however, we can only reiterate the remarks made in last Calendar, on the use of protecting material. Pay particular attention to the thinning of the fruit so soon as they have set, and the removing forthwith of male blossoms and any injured leaves, and let all shoots be tied down to the trellis as they require it. Very little of the shoots will require being stopped now, excepting on vigorous growing plants. Our object will be to encourage a free growth. Guard well against mildew and red-spider, also canker, and should they appear apply the usual remedies, and see that the plants suffer not for want of, or from too much, water at the roots. Atmospheric moisture must be sparingly applied during the present state of the weather, but avoid an arid atmosphere. *H. D. Ward, Longford Castle.*

THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 14, 1878.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Dec. 17	Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.
WEDNESDAY,	Dec 18	Sale of Trees and Shrubs, Bulbs, Azaleas, Camellias, &c., at Stevens' Rooms. Meeting of the Linnean Society, at 8 P.M.
THURSDAY,	Dec. 19	Sale of Choice Bulbs, Roots, &c., at Stevens' Rooms. Clearance Sale at Videon's Nursery, Bromley-by-Bow Station, by Protheroe & Morris.
FRIDAY,	Dec. 20	Sale of Stock at Holmes' Nursery, West Ham, by Protheroe & Morris.
SATURDAY,	Dec. 21	Sale of Hardy Plants, Bulbs, Roses, &c., at Stevens' Rooms.

OUR readers will not have forgotten the CULFORD VINE SPORT, playfully called by some the Culford "apparition," and they will not think it inappropriate if we refer to it again at this season when ghost stories are rife. We need not go into detail as to the history of this now famous sport. Those who wish to recall all the particulars of this erratic bud may find a summary of them in our number for August 18, 1877, and will find a description of the appearances presented by the Vine drawn up by ourselves, after careful comparison with other Vines of Trebbiano and of Golden Champion, in the number for September 1, 1877. It may suffice to say that a stock of West's St. Peter's was grafted with Black Alicante, and on the branches of this again were inarched three distinct varieties, viz., Mrs. Pince's Black Muscat, Trebbiano, and Golden Champion. In course of time the rod bearing the Golden Champion was cut away, leaving a rod of Trebbiano and one of Mrs. Pince. On the Trebbiano rod was produced, in 1874, a bunch "so wonderfully like," to use Mr. GRIEVE's words, "the fruit of the well-known Golden Champion that no one who saw, handled, and tasted it could perceive the least difference between the two." In 1875 and 1876 no bunches were produced from the spur, but in 1877 the same Trebbiano rod produced, in addition to bunches of the normal character, three bunches, which are fully described in our number for Sept. 1, 1877, one of which was, in the opinion of all who saw it, indistinguishable from Golden Champion, while the other two were more or less intermediate in character. The drawings of these, made by ourselves, are before us as we write. Doubts were raised in various quarters as to the correctness of these statements. It was stated, and is still stated, that experienced judges have been on other occasions mistaken in their identification of varieties of Grapes—and that they were mistaken in the case of the Culford sport. This may have been so, but it is for those who assert it to prove it. The evidence, however, at present is all one way. Those who did see and those who not only saw but carefully examined and compared the sport, came to the same conclusion as Mr. GRIEVE, and found the sport and Golden Champion to be at least as like as two Peas. Those who did not see it discredit the testimony of those who did. Of course if those who saw, or thought they did, Golden Champion growing as above detailed can be proved to have been either incompetent, or untrustworthy, their evidence goes for nothing. But this is not so. No one has impeached the veracity or the competence of the witnesses. We are bound then to accept the direct testimony of faithful witnesses in preference to the inference of honest doubters, the more so as there is nothing inherently impossible in the matter. Other cases of similar nature have happened, as is well known to those who have devoted their attention to questions of bud variation. To put the matter to a test, however, as far as could be done, Mr. GRIEVE furnished Mr. W. THOMSON of the Clovenford Vineyard with eyes from a shoot which came from the same spur as that which bore the sport in the previous years, and not an eye from the "very shoot," as Mr. THOMSON states below. These eyes were struck, and have now borne fruit which is not distinguishable from Trebbiano. We give Mr. THOMSON's own words :—

"Some two years ago a controversy arose on this subject, as many of the readers of the *Gardeners' Chronicle* will no doubt remember. Mr. GRIEVE and others, including Mr. FISH, believed that a Vine of Trebbiano, on which at one time there had been a graft of Golden Champion, produced a bunch of Golden Champion after that Vine had been cut off from the Trebbiano. I was one of many that doubted this, and tried to account for their being deceived, quoting parallel cases of unintentional mistakes of the same character.

"To satisfy me that I was wrong and the advocates of 'the sport' right, Mr. GRIEVE, with his usual courtesy, sent me an eye of the very shoot the supposed Golden Champion grew upon, so that I might grow and fruit it, and be not faithless but believing. I grafted it on a Muscat Vine, and this year I had six large bunches on the rod it formed, but, as you will see by the one I send with this communication, it is not Golden Champion, but, as I think, Trebbiano. Many gardeners who have seen the Vine and fruit this season thought it Raisin de Calabre, but others agreed with me that it is Trebbiano. Trebbiano has this much in common with Golden Champion that if it is subject to an irrational mode of treatment its skin gives way, and it gets spotted and rots. This may have been the experience some of the advocates of 'the sport' had of Golden Champion, and they concluded rather hastily that as the bunch on the Trebbiano rotted also it must be Golden Champion. *Wm. Thomson, Tweed Vineyard, Dec.* 3. P.S. I send a sample of the Grape produced from the Vine sent me by Mr. GRIEVE.'

The bunch, or rather portions of a bunch, received from Mr. THOMSON, bear out his statements. We agree with him that in all probability the bunch is that of Trebbiano—it is assuredly not Golden Champion ; but one very competent authority, who knew nothing of the history of the specimen submitted to him by us, thought it might be White Tokay. Let us, however, take it for granted that it was Trebbiano. Is not this exactly what might be expected of an eye produced from the same spur, but not from the same shoot, which produced the sport?

Mr. GRIEVE informs us that the eyes that he took from the shoot which produced the bunch died. But even supposing they had lived—suppose eyes taken from the very sport—is it certain they would have reproduced the sport? The probability undoubtedly is that they would have done so, as cuttings usually reproduce the form from which they are taken, but it is not absolutely certain that they would do so in all cases, and in the instance of variegated Pelargoniums we know they do not do so. If we may be excused an Hibernicism, we retain our faith in the reality of the Culford apparition, and look forward to the next season with interest, to see whether after a year's rest it will, as it has done before, again startle the eyes of the beholder.

As germane to the subject now under discussion we may call attention to the remarkable case of bud-variation in Lilium speciosum recorded in our last issue ; but still more to the point is the case of the Preston Hall sport, mentioned in our columns on September 14 of the present year, p. 342, in which buds of the White Sweetwater were inserted on to the Black Hamburgh. Of two bunches resulting from this union one was a Sweetwater, the other is described (for we have not seen it ourselves) as exactly like the Sweetwater, but with the colour of the Black Hamburgh.

Neither of these two cases furnish an exact parallel to the Culford sport, but they afford good illustrations of what people with little reverence and less accuracy call a "freak of Nature." From such so-called freaks the Culford sport only differs in degree, and it is itself outdone in eccentricity by the now well-known Cytisus Adami.

—— RIVER SCENERY.— In May last (p. 629) we gave a view in the grounds at Corby Castle, the ancestral home of one branch of the great HOWARD family, and now the residence of one of the most worthy bearers of the name, PHILIP HENRY HOWARD, Esq. Corby Castle is situated on a rising eminence flanking the river Eden at Wetheral, about four miles south of Carlisle, on the North-Eastern Railway, and at a point where rock and tree and fast-flowing water combine to make one of the loveliest scenes imaginable, but of which our illustration (fig. 126) gives only a glimpse. The combination of such elements could hardly fail to be beautiful, and it affords a lesson that landscape gardeners might profit by. The colour of the white-barked Birches, and their graceful forms, present a striking contrast to the rugged rocks ; while the forms of the latter, where subjected to the rush and swirl of the stream, convey some notion of the irresistible force of rapidly moving water.

—— LÆLIA ANCEPS ALBA.—One of the most charming of new Orchids is now flowering, under this name, in Mr. BULL's collection at Chelsea. Its peculiar characteristic is the purity of its white flowers, which equal those of a Phalænopsis, and whose texture may be compared to that of Lapageria alba ; except the dash of yellow on the disk of the lip it has not line a or dash of colour, but stands out in spotless purity. It has ovate, ribbed pseudobulbs, shorter and paler than those of the type. The single oblong leaf is thick and firm in texture, and the flowers are large for this species and remarkably spread out, measuring across the expanded petals 4 inches, and from tip to tip of the sepals 5 inches, the sepals being linear lance-shaped, the petals broader, and the lip with an oblong undulated front lobe, all the parts except the disk being of a brilliant opaque white, forming a very handsome flower—one indeed which will bear comparison for beauty with any other Orchid known. And then it is a cool Orchid. It comes from Mexico, where it is very rare, from a locality upwards of 8000 feet above the sea, where the cold is intense, and where it freezes every night—in the cool season we presume—so that icicles 2 to 3 feet long are found hanging from the neighbouring Pine trees. The plant grows mostly on precipitous rocks, rarely on trees. It must be seen to be appreciated, there is something so captivating in its dazzling whiteness.

—— "LA SEMAINE FRANCAISE."—This is a new venture, promoted, we believe, by the proprietor of the *Garden*. It is a journal in French published in London, and wholly from the point of view of the English reader. Many desiring to read French journals find difficulties in their way, owing to the generally monotonous character of each journal, however ably written. It is also quite impossible to obtain in any one, or even in several journals, any idea of the ability and variety of current literature in Paris. These drawbacks, we are told, *La Semaine Française* aims to remove. The opinions of the best French writers on the political, social, and other important topics of the day can hardly fail to interest those accustomed to look at questions from an insular point of view. The time that witnesses the brilliant recovery of France and the good feeling existing between England and France, appears peculiarly fitted for making more accessible to English-speaking people the every-day thoughts of a great and friendly nation, distinguished in many ways, but in none more than in the clear expression of clear thought. Paper and print are all that could be desired.

—— BUDS ON ROOTS.—*Der Deutsche Garten* records an instance of a monocotyledonous plant throwing shoots from the roots. It was an old, starved plant of Dracæna umbraculifera. The stem had been entirely used up for propagating, that is to say, down close to the ground. Subsequently a number of shoots appeared, not only from the base of the stem, the stock, but also from true roots, as was ascertained by a careful examination.

—— GARDEN PESTS.—We have often heard gardeners complain of their inability to destroy such pests as slugs, worms, mice, &c. Several writers have proposed remedies, but none seem to have succeeded to the perfect satisfaction of those interested. We cannot do better than give the way they get rid of such things in France in one place that we know of—that is, at Ferrières. For the last four years they have had in the kitchen garden a pair of storks, male and female, and also another pair in their enclosed nursery ground, where Conifers, Roses, Strawberries, and such-like, are grown. These birds have been found most useful, destroying such pests as toads, frogs, adders, slugs, worms, mice, moles, snails, spiders, flies, &c. They walk about in the garden from morning till night, doing their work ;

they spoil nothing, touching nothing whatever, either fruit, vegetable or flower. It is very interesting to watch them when the men are digging or planting. They remain with them, clearing carefully the soil of worms, and when they see a man taking a spade they have the instinct of dogs and follow him. They give them as food ox's hearts and livers.

—— Cimicifuga racemosa (see p. 557).—Some time since we gave a woodcut of the stem and seed-vessels of a plant under the above name. We have been reminded that the plant represented was C. americana and not C. racemosa. We were led into error by a misplaced tally, and did not verify the plant as we should have done. Readers will kindly make the necessary correction.

—— The Crown or Mummy Pea.—This interesting old acquaintance, the Crown or Mummy Pea, which is also known under the names of Bunch Pea, Cluster Pea, Royal Belshazzar, Pois Couronné, Pois Ture, Pois Paquet, and Grimstone's Egyptian Pea, is coming to the fore again, as an enterprising seedsman is putting it forward as a "remarkable Pea," and has "a somewhat strange history as to its origin." We are told, as before, that it is "said to have been taken from the hands of a mummy—hence its name." The person who is now sending it out states that it grows upwards of 11 feet in height, and the seed should be planted 6 inches apart each way. It is offered at something like 10*s.* per quart. We gave an illustration of this Pea in our volume for 1873, p. 44.

—— The Pampas Grass.—There are now to be seen at Messs. Hooper & Co.'s, Covent Garden Market, some magnificent plumes of Gynerium argenteum, just received from Western Canada, of such great size, density, and exquisite soft silvery whiteness as to surprise any one accustomed to the medium-sized and dark plumes grown in this country. It is presumed that these splendid panicles are received here just as they are grown in their native country, though their virgin whiteness would suggest that they had been bleached in some way previous to being packed for transit across the ocean. Mr. C. A. Hooper is of opinion that they have not been put through any cleansing process. They must have been packed in the most careful manner, as they are as fresh-looking and whole as if just cut from the plant. There are many decorative purposes peculiar to the Christmas season to which these fine plumes could be put, and their cost is not so high as might have been expected, seeing they have come from a far distant country.

—— Scuticaria Steelii.—A well-grown plant of this beautiful Orchid is now in flower in the collection of E. Wright, Esq., Gravelly Hill, Birmingham. Its yellowish buff flowers, spotted with crimson, are deliciously scented. Mr. Hodge, the gardener in charge, has been very successful in the culture of this plant, having flowered it twice in one year.

—— A German View of English Gardening.—There is a German "chiel amang us takin' notes," wherewith he presumes to instruct and perhaps amuse his countrymen at home, through the medium of the *Deutsche Gärtner-Zeitung*, on the merits and demerits of English gardening. On the whole he seems to be actuated by a spirit of impartiality, though his generalisations in many instances betray a deplorable lack of knowledge. Now, we hold that a person settling down in a foreign country and enjoying its advantages should be careful, while adhering to the truth, not to make too much of its shortcomings, and above all to avoid anything approaching misrepresentation, even in articles which few Englishmen are likely to read. Moreover, our friend is not content with even this rather wide subject; he digresses on our bad cooking and strong stomachs, on the papistical tendency of our clergy, on the unsocialistic condition of society, on the anti-Russian policy, on the relative inferiority of English garden labourers, on the weeds in Mr. Blank's nursery, and on almost every conceivable topic. If wisdom and truth pervaded this gossip, or tittle-tattle, as



Fig. 126.—River scenery: view on the Eden above Wetheral Bridge.

he justly designates it, and the editors of our youthful contemporary think it suitable for their readers, well and good. But in many respects it is calculated to convey false impressions. We do not propose going out of our way to refute statements respecting subjects which do not come within our scope, but we may briefly examine one or two affecting the gardening interests. Like too many other persons, the author of this gossip seems to think that what he likes and has been accustomed to, must of necessity be best. He says: "No wonder that not half so many vegetables are eaten here; they do not know how to prepare them. Moreover, the English method of cooking vegetables is very simple; almost everything is boiled in slightly salted water, the water is then poured or pressed off, and the vegetables thus served up." No doubt the all-in-one-pot system of cooking still prevails to a great extent among the labouring class, and nicely cooked vegetables are not to be had in the ordinary eating-houses; but generally speaking vegetables are sent to table in a form suitable to eat with the meat served with them. Provided the vegetables are properly cooked, the less there is added to them before serving the better, if they are to be eaten with rich succulent meat, gravy, and seasoning, according to individual taste. Asparagus, we are told, comes chiefly from Paris. "*Knollensellerie* is another vegetable unknown in England, whereas Celeriac, that is, Celery with long leaves and no bulbs, is found in every garden." We always thought Celeriac and *Knollensellerie* were the same thing. Mistleto, we are informed on the same authority, is no longer abundant in England, and is cultivated with great care. We fancy the careful cultivation of this parasite is in its infancy, and it is to be hoped that it will remain so, though some nurserymen are offering young Apple trees with Mistleto on them. As to its scarcity in England, we would recommend our gossiper to go into Shropshire or Herefordshire. We have said enough to show the danger of generalising on insufficient data, and we leave Mr. BLANK to meditate on the notoriety of his weeds.

—— TERRESTRIAL ORCHIDS.—Some years ago (*Gardeners' Chronicle*, 1872, p. 605) we gave an illustration of a pot of Ophrys tenthredinifera, together with some notes on the system pursued by Mr. NEEDLE, then gardener to the Comte DE PARIS, at Twickenham, and a very successful grower of terrestrial European Orchids. The Berlin *Monatsschrift* for October has an interesting article on the same subject, illustrated by a coloured figure of a plant of Ophrys arachnitiformis, a hybrid between O. aranifera and O. fucifera, as well as single flowers of the parent and other species. For some years, it appears, Mr. LANCHE, curator of the Royal Garden of Instruction at Sans-Souci, near Berlin, has bestowed considerable attention on this interesting class of plants, and has now a very rich collection of them, belonging to the genera Orchis, Ophrys, Cephalanthera, Cypripedium (including Asiatic and American hardy species), Epipactis, Gymnadenia, &c. The compost used by Mr. LANCHE consists of a mixture of peat and leaf-mould and a little loam, with a little chalk rubbish for the chalk-loving species; manure of any sort is injurious to them. To cultivate them in the open ground, a shady spot is selected and the earth taken out to a certain depth and replaced by a suitable compost, resting upon a layer, 4 to 5 inches thick, of broken bricks and mortar. In Germany it is necessary to protect them from the sun. Generally speaking these terrestrial Orchids form only one tuber annually in a wild state, but Mr. LANCHE found that cutting down the flower-stem as soon as the flowers were over causes the formation of several tubers which can subsequently be parted. Propagation from seed is difficult, but Mr. LANCHE has succeeded in raising numbers of Orchis mascula and maculata in this way. The seed was sown as soon as ripe on the bed amongst the parent plants, and slightly covered with crumbled Sphagnum, and the following year he had a quantity of young plants.

—— JAPANESE PRODUCTS AT THE PARIS EXHIBITION.—The rapid strides in civilisation made by Japan of late years, which has often been a subject of comment and surprise, was very fully illustrated in the recent Exhibition at Paris. The Japanese Court in that huge fair will long remain impressed on the memory of every visitor for its splendid collection of china, bronzes, and other artistic productions, as well as for the fine series of natural products. Notably amongst those belonging to the vegetable kingdom was a set of ninety slabs of wood such as are used for constructive purposes in Japan; a good proportion of these were the produce of coniferous trees, the Oaks being represented by seven species. Amongst vegetables, besides those of the genus Brassica, and others that are well known to us here, occur such plants as Lappa major, known as Gobo; Colocasia antiquorum, which is known in a number of varieties, and the stems of which are eaten; the Koniakea (Conophallus Ronjak), from which a starch is prepared; the tubercles of the Rashu (Polygonum multiflorum); the roots of the Kuwai (Sagittaria sagittifolia, var. edulis); the tubers of Lilium tigrinum; Stachys Sieboldii; roots and stems of Chrysanthemum coronarium; the young leaves as well as the stems of Kochia scoparia, and many other interesting plants. Amongst spices and condiments we find such things as the seeds of the Hemp (Cannabis sativa), of the Restic (Papaver somniferum), of the Sansho (Xanthoxylum piperitum); and amongst edible fruits the most remarkable are the Kemponushi (Hovenia dulcis), the Tochi (Æsculus turbinata), and the Shii (Quercus cuspidata). The most important Japanese dye-plant seems to be the native Indigo (Polygonum tinctorium). As is well known, the young tender shoots of Bamboo are eaten in countries where the plants are abundant, and the Japanese exhibited a large number of bottles filled with these dainty morsels, as well as a variety of edible seaweeds. Judging from the educational appliances exhibited by Japan, the method of teaching in Japanese schools must be in many cases superior to our own. Object lessons seem to be thoroughly understood by the people; thus, in a series of mounted specimens for teaching botany, we were much struck by their completeness; beside the plant itself—or flower of the plant, as the case may be—was mounted the seeds, fruit, fibre, or other part of the plant of economic value, so that the product must necessarily be associated with the plant in the mind of the pupil.

—— MASDEVALLIA TOVARENSIS.—There is now flowering in Baron ROTHSCHILD'S garden, at Ferrières, France, a fine plant of this beautiful Orchid, with 137 flowers borne on forty-five spikes, many of which bear four fully developed flowers.

—— ORCHIDS AT KEW.—The following species are in bloom in the Orchid-house:—

Masdevallia polysticta, a small-flowered species, with white cup, long tailed sepals, finely spotted
,, gibberosa, with tubercled flower-stem; curious
,, ignea
Cypripedium insigne
,, barbatum
,, × Sedeni
,, × Harrisianum
,, venustum
Calanthe vestita
Eulophia macrostachya, greenish spicate flowers
Epidendrum cochleatum
Epidendrum difforme, green flowers; curious
,, paniculatum
,, ibaguense
,, diffusum
Lælia autumnalis
Liparis longipes
Odontoglossum Alexandræ
,, tigrinum
,, crispum
,, Pescatorei
,, bictonense
Oncidium excavatum
,, aureum
,, ornithorhynchum
Sophronites grandiflora
Sarcanthus laxus

—— EAST KENT NATURAL HISTORY SOCIETY.—The twentieth report of this Society has lately been issued, and contains, in addition to the usual business notices, an excellent account of the formation of flints, by Mr. DOWKER, who leans to the view that the production of this mineral is due to chemical change, and not of necessity to the action of sponges.

—— WEST OF ENGLAND PANSY SOCIETY.—We understand that a society with the above title has been formed to encourage the cultivation of Pansies, and that its exhibitions will be held in alternate years at each of the principal towns in the West of England. The exhibition for 1879 will be held at Exeter on June 5, in connection with the Horticultural Society. Captain C. HALFORD THOMPSON (late R.A.), 9, Colleton Crescent, Exeter, is the Hon. Sec.

—— CACTUSES.—One of the nicest gardens near Paris is that at Poissy, on the river Seine, belonging to M. LORENZO COURANT, a real amateur of plants, who has been very successful in the hyridising of Cactuses and Gladioli. His place is on the site of an old Commanderie des Templiers, destroyed under PHILIPPE LE BEL, and made by him into an abbey. In the garden are still to be seen the remains of the "oubliettes," or dungeons, which seem in olden times to have been indispensable in any large place, whether a castle, prison, or even a monastery. With this exception there is very little left of the old buildings. Attached to the house is a conservatory of good size, with some good specimens of Tree Ferns, Palms, Adiantums, &c. The conservatory unfortunately is completely bare of climbing plants or hanging baskets, so that it looks a little bare. Facing the conservatory is a good sized "jardin Anglais," with some fine trees, an Abies Pinsapo 18 metres high, a Cedar of Lebanon, only thirty-five years old, planted by the proprietor himself. This tree is of a very large size, and looks a great deal older. There is a good collection of Conifers, all in good health. From this we pass into the kitchen and flower garden, where are the houses. Here are several large beds of splendid Gladioli: most of them very good. Fine bushes of Tritoma Uvaria, ten to fifteen fine plants of Bambusa aurea, some good tuberous Begonias, a collection of Vines, comprising forty varieties, several houses containing Camellias, Azaleas, &c.; and last a lean-to house, with a collection of about a hundred Cactuses. They are planted out in this house and trained against the wall; they seemed very vigorous, and we were told they bloomed very freely. M. COURANT began by crossing speciosissimus grandiflorus with Hookerii, and kept on crossing the offspring from these. The flowers are most magnificent, and of a very large size. The following are the best amongst the lot:—

Amabilis perfecta, good shaped flower, flesh-pink, with the interior of the corolla cherry-coloured.
Aurantiaca superba, very brilliant, dark orange.
Aurore boreale, brilliant yellow sepals, corolla cherry coloured.
Boule de Feu, globular-shaped flower, yellow sepals, violet corolla.
Marguerite Bock, very dark pearly lilac.
Claire Courant, flesh-coloured.
Courantii, pure white, outside petals of lemon-yellow.
Eblouissant, very fine, purple-tinted violet.
Ganymede, open flower, pinkish pearly lilac; corolla of a brilliant cherry colour.
Hannah Wilson, perfect flower, pearly light lilac.
Madame Lemarchand, velvety pink; corolla white.
Rosea splendidissima, velvety pink; corolla white.
Miss Richardson, perfect shape, bright lilac.
Alice Rosciand, red-orange.
Jules Simon, dark orange, edged with velvety-purple lilac.
Madame Simon, middle-sized flower, light carmine-lake, inside of corolla white.
Triomphe de Poissy, tips of petals bright orange, edged with violet, pearly white.
Thiers, middle-sized flower of perfect shape, numerous, petals red-orange, edged with dark violet.
Madame Courant, large flower, velvety pink.

These are really worth growing, and M. COURANT offers cuttings to any one who may wish them. They are grafted very easily, and have been grown in several places in France with success.

—— VIOLENT SNOWSTORM AT VIENNA.—Early last month, as reported in the *Neue Freie Presse*, Vienna was visited by an exceedingly violent snowstorm, such as is rarely experienced, and as the trees were still in full foliage the damage caused was very great. Entire plantations were completely destroyed, hundreds of large trees crippled, many a centenarian giant tree lost its head, and in some places groups of trees were swept down. Any one with a little love for Nature, even if not exactly sentimental, could not view unmoved the destruction in the parks and avenues—so concludes the report.

—— REANA LUXURIANS, of which we have made note several times, is now in flower at Kew. It was brought to notice as a valuable forage plant, though it appears to be such only in warm countries; it was tried in the most favourable parts of France, but disappointed the expectations of its advocates. In one of our notes we mentioned a report of its flourishing at different altitudes in the Isle of Bourbon, where it is considered a valuable acquisition. A curious change of habit is brought about by its culture under glass; out-of-doors in the garden of Mr. JOAD at Wimbledon we found it forming an immense and spreading tuft, just as would be appreciated in a forage grass; but in the Victoria House at Kew, where it has flourished luxuriantly, straight canes were formed from the first, without any tendency to form a tuft. These have reached a height in some cases of about 13 feet. The specimen in Mr. JOAD'S garden h d rather a yellowish colour, evidently as if not quite at home, while its

stove culture at Kew appears to suit it exactly. It is a native of Guatemala, and is known as Teosinté; there it is said to be perennial, forming immense tufts, which are regularly cut, and the cattle fed upon it fatten rapidly. The habit of the plants now referred to is much that of Maize, and the similarity of appearance is also great. The panicle is tall and lax, with short branches, and the somewhat attractive appearance it has is due to the long purple stigmas, which droop together in tassels. According to Dr ASCHERSON, who wrote a paper on the genus Euchlæna, the name Reana should fall before it. A figure will be published in the *Botanical Magazine*.

—— THE WINTER. — It is not often that we are disposed to place much faith on weather predictions, so many circumstances being likely to upset the calculations of the weather-wise; nevertheless, we have felt it only prudent to warn gardeners, and to induce them to take the necessary precautions against a severe winter. With reference to the statement of Mr. BRUMHAM in our last issue, M. NAUDIN writes to us from Antibes to the effect that M. RENOU, one of the most eminent of French meteorologists, hazarded a similar prediction as to the coming winter, on the same considerations as those relied on by Mr. BRUMHAM. M. NAUDIN also inclines to the same opinion, from the fact that winter has set in very early in the South of France. On October 31 the thermometer at Antibes registered 3° C. = 26°.6 F., a degree of cold which occurs ordinarily only in December. Cabbages in the kitchen garden even were frozen. From that time till now the weather has been bad—windy, rainy, and very cold. The hills in the neighbourhood of Cannes and Nice have been covered with snow. Some plants from Kordofan and Darfour were entirely destroyed by the frost in the end of October, while Mesembryanthemums, Aloes, and Stapelias are quite unhurt, in spite of their succulent consistence. At Cannes itself the cold has been much less severe.

—— POTATOS.—Some time since we were asked to give our opinion as to the merits of two Potatos—International Kidney and Victoria. The Potatos were divided into three lots, and cooked by different cooks for two different family parties under different numbers. Upon comparing notes the verdict was found to be unanimous that International was a close, waxy, or tallowy Potato, with a sweetish, earthy, unpleasant flavour; and that Victoria was a mealy Potato of mild agreeable flavour. The samples were furnished by Messrs. DOUGLAS and TURNER, and the trial was made under numbers, so that those who pronounced on their respective merits were not aware of the names of the Potatos till after they had given their opinion.

—— ROGERIA GRATISSIMA.—This old-fashioned fragrant greenhouse shrub is not so frequently seen as it deserves to be. Last summer, when visiting the establishment of Messrs. J. BACKHOUSE & SON, York, we were much struck with a specimen planted out in the corner of a cool-house in a sort of square-built tank, which was filled nearly to the top with a compost of peat, loam, and sand. It was a remarkably fine healthy specimen, from 4 to 5 feet high, and full of flowers and flower-buds, which continued for many months. There were also a considerable number of young plants standing near, some of which were only from 4 to 6 inches high and were flowering freely, proving that young plants, as well as old ones, yield to the agreeable propensity of flowering freely; so that we have not to wait for years until the plants become large before the eye is gladdened by its lovely and delicate blossoms. We can hardly imagine any one who has really a love for flowers experiencing any disappointment with this shrub. It is an evergreen, with opposite, broadly ovate, dark green leaves. The flowers are of a delicate pink in colour, agreeably fragrant, arranged in a kind of umbelliferous cluster.

—— INTERNATIONAL POTATO EXHIBITION.—At the International Potato Exhibition, held at the Crystal Palace in September last, about thirty new varieties of Potatos were brought forward by exhibitors, who were anxious to obtain for them critical consideration. It was found to be impossible to deal fairly with so many in the brief space of time then at command, and hence there were no certificates awarded. The committee charged with the task of inquiring into the merits of new varieties have now made their final selection, and have, as we learn, awarded First-class Certificates to two varieties. It must be understood, however, that a very considerable proportion of the varieties brought under their notice were of superior merit, and may hereafter obtain the same distinction as is now conferred on the kinds which, for the present, they consider the best. It is not alone sufficient that a new variety should look well on the exhibition table, and be well spoken of as grown in the locality in which it originated. It should, in the opinion of the committee, be characterised by general usefulness, which includes adaptation to a variety of soils, constancy in respect of form and colour, high productiveness, comparative immunity from disease, and first-rate table quality. The Radstock Beauty is a coloured round, inclining to pebble shape, even and somewhat angular, rarely attaining to large size; the skin tawny-white, smooth, and silky. The eyes are few, but conspicuous, the side eyes being of a rosy purple colour, with arched brows of the same tint distinctly defined; the eyes of the crown or nose end clustered in a patch of a somewhat darker shade, giving to a good sample an extremely pleasing appearance. The growth is moderate, the produce mostly of smallish size, plentiful, and clean; the flesh fine in texture, mealy, dry, and delicately flavoured. First-class Certificate. The Woodstock Kidney is a white kidney, of oblong shape, extremely even and smooth, the skin tawny-white, silky; the eyes few and inconspicuous, set level with the general surface in a small cluster of dots at the crown or nose end. So regular in form is this variety that a fair sample may be likened to a model turned in a lathe. The growth is moderate and compact, the tubers are plentifully produced, and mostly of middling size, and are in the very least degree affected by disease. The flesh is yellowish, fine in texture, and of the most delicate flavour. This is, all points considered, one of the finest varieties hitherto submitted to the International Committee. First-class Certificate.

—— ROYAL HORTICULTURAL SOCIETY.—At the meeting of the Fruit and Floral Committees on Tuesday next Messrs. CHARLES LEE & SON will exhibit a very interesting collection of hardy evergreen and variegated-leaved plants; Mr. GILBERT, Burghley, will again exhibit his new double Primulas; and Mr. GARDINER will send a large collection of Apples from Eatington Park.

—— ORCHIDS IN FLOWER AT THE VICTORIA AND PARADISE NURSERIES.—Mr. B. S. WILLIAMS has a splendid show of Orchids in flower just now. The Calanthes are especially fine, numbering some 150 spikes of Calanthe Veitchii and 165 of C. vestita varieties, besides several plants of Sophronites grandiflora; also the free-flowering Dendrobium superbiens and Goldiei, which has been flowering in this nursery ever since this time last year.

—— THE WEATHER.—The report for the week ending December 9, issued by the Meteorological Office, states that the weather was dull and unsettled, with frequent hail and snow in the east, north, and south-west of the kingdom. Temperature very much below the mean in all districts, the deficit ranging from 6° to 9°; the maxima frequently below 40° at the inland, northern, and eastern stations, and many hard night-frosts recorded. Lowest shade temperatures registered were those at Glenalmond, Rothamsted, and Parsonstown on the 4th, and Armagh on the 9th, on each of which occasions the thermometer fell to 20°; the lowest grass readings were those at Prestwich and London on the 9th, where 14° and 15° were recorded respectively. Rainfall more than the mean in "England, N.E.," and about the average in "Scotland, E.," but several tenths less in other districts. Very heavy snow in "England, N.E." on the 8th and 9th. Wind, N. (N.W. to N.E.), light or moderate in force generally, but strong in the west on the 7th and 8th, and reaching strength of hard gale at Scilly.—A Birmingham correspondent, writing on the 10th, reports 14° of frost, and the weather very severe; and from Norfolk we learn that there was 18° of frost the same morning.—Mr. CAIE, writing from Inverary Castle on the 8th inst., says:—"We are surrounded with snow, and the thermometer this morning registered 8° of frost."—"On the morning of the 10th," writes Mr. D. C. POWELL, from the gardens, Powderham Castle, near Exeter, "the thermometer registered 18° of frost; this morning, the 11th, it registered 19°; and this evening, at 5 o'clock, the time of writing, it stands at 21°. Prior to the increased frost of the morning of the 10th, on Monday we had a fall of snow about 1½ inch in depth. The wind, being N. and N.E., there is every appearance of a continuance at present. The barometer fell very much until the snow came, since it has gradually risen."

CONCERNING ABUTILONS.

MR. BARRON is to be complimented on the excellent trial of Abutilons he carried out at the Chiswick Gardens of the Royal Horticultural Society during the past summer. The types and varieties have so increased of late that there was much necessity for gathering them together and grouping them, as Mr. Barron will no doubt group them when his official report is made public.

An examination of the collection admitted of these Abutilons being popularly grouped under a few typal headings, which though not presumed to be botanically correct, may yet assist gardeners in realising something of their individual characteristics.

The old type—striatum—is distanced by the large and bold Duc de Malakoff, which is very fine for bedding, subtropical work, and conservatory decoration. The well-known variegated form Thompsoni appears to be a variegated form of striatum, but another variegated variety, under the name of niveum marmoratum, is quite distinct from Thompsoni; the leaves are more woolly, and indeed it is a better form of variegation, and worthy of notice on that score. As far as can be learned its origin is unknown.

Striatum roseflorum and its allies, and the yellow-flowered Lemoinei, may be said to be capable of grouping as long-petalled varieties, being in this respect distinct from Darwinii and its allies, the blooms of which are much shorter in the petals. Roseflorum is now a well-known variety, introduced by Mr. B. S. Williams, and has salmon-rose coloured flowers. It is a very free blooming form, well adapted for conservatory decoration. A variety named roseflorum floribundum differs perhaps less in being more free of bloom, but more distinct in colour, having less of salmon and more of pink in the petals. It is a good variety for growing in pots, and would probably make a good market plant. Le Grelot is paler still in colour, but very pretty, a taller grower, and not so branching in habit as roseflorum. A very distinct and thoroughly good variety is found in Louis Marignac, much paler in colour, quite a pale pink, with a little salmon in it, large flowered, very pretty and bright; this is to be recommended for planting out in conservatories. Le Progrès is something of a misnomer, as it is difficult to separate it from roseflorum. Anna Crozy is very like Louis Marignac, but with large bold leaves like Darwinii tesselatum and Greu; it does not, however, seem to be free-blooming. Lilacea alba and Simon Delaux are much like the foregoing, but a little larger in the size of the flowers. The three last might be put under the head of lilac-flowered varieties, having pale margins, bright in colour on the inside of the flowers, but paler on the exterior.

The brightest yellow-flowered Abutilon is Reine d'Or, of a bright yellow colour. Lemoinei has flowers of a finer shape, which also expand better, and it is freer of bloom; and will be best liked for these good qualities, notwithstanding its paler hue of colour. Reine d'Or is intermediate in colour between the two, and that is perhaps all that can be said about it.

The Darwinii group is a very valuable and interesting one, comprising several forms of great value as decorative agents. The group may be said to possess two main advantages—the petals are stouter, and the blossoms expand better. The flowers are all shorter in the petals than those of the roseflorum type, but by reason of their greater expansion they are more imposing in appearance. Darwinii has lively salmon-orange flowers, freely produced. Darwinii tesselatum is the same, with a fine variegated foliage—the best variegated Abutilon in cultivation, Darwinii compactum, is a fine variety, with very pretty salmon-pink flowers, well adapted for cultivation in pots. Darwinii robustum has more rose on the interior of the flowers; Darwinii grandiflorum has flowers with a lively orange interior; and grandiflorum majus does not appear to differ from it. The finest variety of the Darwinii section is Louis Van Houtte, having large and finely expanded pale purple flowers, the foliage and habit of growth being the same as Darwinii, robust, and very free. Alphonse Karr is a pale salmon-flowered variety of poor quality. Prince of Orange is like Darwinii in foliage, but is like roseflorum in flower; it is very free and pretty. Comtesse de Medici Spada also comes into this type; it has large bold leaves and pale salmon flowers.

Beranger is a variety so distinct in foliage and flower that it makes a separate position for itself; the flowers are yellow, with distinct red stripes, and are

beautifully marked. It is a very showy and attractive variety, well adapted for conservatory decoration. Souvenir de McMahon has an individuality of its own also; being characterised by a shrubby growth, and fine bold thick leaves; the flowers large, of a dull pale salmon exterior, orange on the inside.

Boule de Neige is as yet the only white Abutilon, and as it will require a thoroughly good one to beat it, it is likely to hold its own for some time to come. Its wonderful freedom of bloom is its chief characteristic, and it is very valuable for cutting from in autumn and winter. A variety named Mongolfier has many white flowers with dark lines, but it is scarcely a "desirable acquisition," being so poor in colour.

Lastly come the types megapotamicum and vexillarium; the flowers of these differ in that vexillarium has the redder tube and brighter yellow corolla, that of megapotamicum being decidedly paler in colour. This, and its varieties, variegatum and striatum, have a very erect habit of growth and very large foliage, and are utterly unlike others in habit; they bear pale yellow flowers with red reticulations well displayed.

A. vexillarium and its variegated form have a pendulous habit of growth, and taking advantage of this Mr. Barron has worked the variegated variety in the form of standards, which is an admirable type of greenhouse plant. It does well worked on one of the strong-growing types, and loses nothing of its charming variegation by being so grown.

Those who are in the habit of attending horticultural shows during the last half of August and the month of September, have not failed to note that in the case of collections of flowering plants there is too often an absence of good fresh specimens, and a preponderance of plants that have been a good deal hawked about during the summer. It would be well if exhibitors would take some of these Abutilons in hand, and grow them into good show specimens. They are well adapted for the purpose, and Boule de Neige especially makes a capital exhibition plant, and good examples of it have been met with during the past summer. The Abutilons would come in with large-flowered Lantanas, such as the dark crimson-flowered Le Grenadier, Erythrina Crista-galli, Plumbago capensis, &c., and make up bold and showy groups in the exhibition tent.

Some of the newer Abutilons are certain to become popular plants. As one looked upon the capital examples so nicely grown by Mr. Barron, the question arose in the mind—

> "Could elegance and grace
> Be clothed in forms more beautifully fair?"

and the answer that met the question was—that rarely has so much beauty and usefulness been found in combination in a group of comparatively easily cultivated plants. *R. D.*

Home Correspondence.

Golden Queen Grape.—This, like most of the new Grapes that have been sent out after having been proved worthy of introduction by the raisers, has done well in some gardens, and in others it has disappointed the hopes of the sanguine purchaser. When this Vine first produced fruit under the care of the late Mr. J. R. Pearson, of Chilwell, it was thought by many good judges to be quite an advance upon any other white Grape in quality and appearance, with the exception of Muscat of Alexandria. The first time Mr. Pearson exhibited it before the Royal Horticultural Society's Fruit Committee it was awarded a First-class Certificate. I saw it on that occasion, and there was no disputing the fact that it was a distinct Grape, and a first-class acquisition as exhibited. Now we hear from some quarters that it still maintains its character, from others that it has been a failure. It is well that we should know how it has done in every case. In the case of some of the recently introduced Grapes, when a gardener frankly wrote that he had failed there were others not slow to hint that it was through want of skill on his part. That it might be so in some cases is no proof that want of skill was always the reason. It was Mr. Pearson, I think, who once said in a case of this kind that "a gardener might very well miss his way in the culture of a new Grape, and not be exactly a fool." After these preliminary observations I would like to register my own experience. I had a good plant as soon as it was sent out, and had it inarched as soon as it was possible to do so on the Black Hamburgh. It grew exceedingly well, and fruited for the first time in 1877. I had a few good bunches, and hoped to show at the Crystal Palace, but the fruit showed traces of a brownish appearance under the skin, and although it was fairly good I would not exhibit it. This year the two rods made splendid growth, producing over a dozen fine bunches; all went well until after the stoning period: again I had great hope of exhibiting at South Kensington, but was again woefully disappointed. As soon as the fruits began to colour the strange disease again appeared, and made steady progress, until the whole lot of fruit is now worthless. Now, it would scarcely be fair to blame the cultivator for this, as it is certainly a constitutional defect. In one house Royal Vineyard, Waltham Cross, and Snow's Muscat, all rather difficult Grapes to finish well, show no trace of the disease, and it grows on the same Vine as Waltham Cross. Royal Vineyard is on one side, and Snow's Muscat on the other. I send a bunch for your inspection, and would be glad if you will investigate it. You will see that the fruit is quite worthless, and I have not yet cut a bunch for use. *J. Douglas, Loxford Hall, Ilford, E.* [After a long and careful microscopical examination of the diseased bunch, we find not a trace of fungus spawn even in the most diseased Grapes, and we can come to no other conclusion, after reading the preceding observations, than that the disease is constitutional. The spotting and subsequent decay evidently arise from some evil pre-existent to the formation of the fruit. We have had no wood to examine [It is all that could be desired], nor, indeed, such strong main stems of the diseased bunches as in the case reported in our journal of November 23, p. 600, but we have seen enough to believe that early signs of the mischief must have been discernible. At the base of the bunch we find not only that the cuticle is discoloured and its component cells gorged with brown matter, but the pith itself has become of a deep brown. We find in the earliest spots on the berries the component cells in a similar condition, sometimes an individual cell, from which the mischief spreads to the neighbouring cells, sometimes a group of diseased cells, as also the accompanying spiral tissue. In this case there are scattered globular crystals, apparently of oxalate of lime; in the advanced state of decay the walls of the cells are much decomposed, and abundant ninepin-shaped crystals replace the globular. Of course the above observations require confirmation, and especially scientific reports of cases where the peculiar variety has exhibited no similar conditions. It is, however, certain that peculiar varieties have an especial tendency to spotting, though in a far less degree than the present. No new variety should ever be sent out till it has been thoroughly tested: like poetry, it should be withheld for at least seven years, and there would then be less chance of disappointment. It is notorious that varieties of great promise have on further trial been ruthlessly destroyed by the raiser, and no thought of any present recompense should induce the sending out of a variety which, to say the least, it at present doubtful. *M. J. B.*]

Bottom-Heat for Pot Vines. — I observe an article on pot Vines by Mr. Douglas in the *Gardeners' Chronicle* for November 30, which is both seasonable and interesting. In reviewing the position that pot Vines take in gardens where early Grapes are required, I see Mr. Douglas refers to another practice which is losing favour every year, namely, the covering of Vine borders with hotbeds for the purpose of promoting vigorous root-action. I have discontinued the practice myself, on the ground that it was impracticable to keep up anything approaching a uniform temperature for any length of time, and also because my own observation leads me to think that the principle is wrong as well as the practice. I will just give one instance of how people may be deceived even in what is tolerably popular practice; not that I wish to represent the case as being sufficiently strong evidence to condemn the use of such material generally. A neighbour of mine, who is not only a skilled cultivator, but also a successful exhibitor, decided on renewing some of his Vine borders, and in order to do so it was determined to begin with one of the inside borders first. The work was set about in the most careful manner, every known precaution being taken to conduct the operation in such a way that the principal roots would be preserved and a new border made (and drained if necessary) to lay them into. The vinery was built on arches, and the roots had free scope both outside and in; it appears, however, they chose to ramble outside at their own pleasure in preference to being nursed and coddled with tepid water and hotbeds, for not a single root was there in the whole inside border. The Vines are old, and had been in an unsatisfactory state before the present gardener took charge of them a few years ago; since then they have improved so much that they have produced excellent crops of Grapes, and grand bunches for exhibition occasionally. Much of the success was ascribed to the care that was taken with the inside border, and the result is, I think, to say the least of it, suggestive and significant. The outside border was protected in winter with dry eaves and shutters, and received copious supplies of liquid manure several times during the season; this, with improved atmospheric conditions, was therefore the true secret of success. But setting aside this question for the present, it is worthy of remark that Mr. Douglas recommends a bottom-heat of 85° to start pot Vines in. For why? Does a Vine grown under natural conditions start with a root temperature so much in excess of its branches? No. But I suppose I may anticipate the answer. Pot Vines are grown for a purpose, and are then thrown away. Just so; but that is no reason why we should violate the laws of Nature. We turn the seasons right round, and that is violation enough; but I submit that a bottom-heat of 85° will start root growth before Nature requires, and is therefore unnecessary. I have discontinued the practice of plunging pot Vines in bottom-heat to start them in also, and let Nature take its course. Any one accustomed to forcing can tell when the stored-up sap in a Vine is becoming exhausted, and if root-action is found to be deficient then is the proper time to give assistance in the shape of a mild bottom-heat. It may be contended that the object is to gain time; I meet that objection by suggesting that the Vines be got in readiness for starting a fortnight or a month earlier. Mr. Douglas says —and I quite agree with him—that the incipient bunch of Grapes must be formed at the axil of each leaf before the Vine is started, and it is no less a fact that the stored-up sap which Nature has provided herself with is intended to cherish and develope that incipient bunch in its earlier stages, and not to make roots which, as yet, have nothing to support. *Wm. Hinds, Otterspool.*

Callicarpa purpurea.—This is an excellent plant for the decoration of a stove or warm greenhouse during the winter months. In the Botanic Gardens, Birmingmam, it is grown in quantities, which Mr. Latham, the curator, intends to increase, and he is certainly right, for the graceful habit of the plant with its bright clusters of purple berries, as seen with him, render it very attractive, and as it is so easy to grow, it is certainly worthy the attention of those in search of a good distinct decorative plant at this season of the year. *A. D.*

Pawlownia imperialis.—My Paulownia imperialis has now an abundance of the buds (little hard round knobs) for the flowers of next spring. It is a tree one so seldom sees that I know not if this is general. *William Wickham, Binstead-Wyck, Alton, December 7.* [The tree rarely flowers in this country, but the buds are often produced. EDS.]

Poinsettia pulcherrima.—In Messrs. J. Standish & Co.'s nursery at Ascot may be seen just now a sight not soon forgotten of Poinsettia pulcherrima. I did not stop to count them, but their numbers are given, and all grown in 48-sized pots. The plants vary in height, from 12 to 18 inches. I have seldom seen the foliage so good, while the heads are simply grand, measuring from 12 to 15 inches across. This establishment is famed for its winter decorative plants, such as Azaleas, Bouvardias, Camellias, Carnations, Erica hyemalis, Epacris, Lily of the Valley, Roses, and numerous other useful plants, which are in splendid health and perfect order. They reflect much credit on Mr. Johnson, the manager. *T. Lambert, Tetworth Park, Sunninghill, December 10.*

Keeping Grapes.—Your correspondent, "M. M. P.," wishes to have the opinion of some of your readers regarding the best time to cut Grapes for keeping. I think his own plan, which he describes so well at p. 731, the right one. I think it is an understood fact now with all those who practise the cut system, that it is much better to cut the Grapes immediately they are ripe, than after they have hung on Vines till they are half shrivelled. I don't think any of the leaves should be stripped above the bunch when cut, that is, if the wood is at all of practical length. There is little difficulty in keeping all the varieties "M. M. P." mentions fresh and plump up to the end of April, with the exception of Black Hamburghs, which I am rather inclined to doubt; I must say I would like to see a plump bunch of Hamburghs, cut on Nov. 12, at the end of April. "M. M. P." seems to be rather sorry that white Lady Downe's is so little known. My experience of it is, that it is quite sufficiently known, and not to be compared with black Lady Downe's. *Borderer.*

A Question about Pine-apples. — In your remarks on the Lord Carington Pine at 692, you say the crown is somewhat exaggerated, meaning that it is shown larger in proportion to the size of the fruit than what it really was. This leads me to ask which Pine-apple produces the smallest crown? [The size of the crown generally is pretty much a matter of cultivation], and which variety is the most suitable to grow in a small establishment, say in a

place where the facilities for Pine growing are inadequate, the pits used for them having been built for Cucumber growing, and are narrow besides being somewhat difficult to heat well? Pines are much esteemed by my employer, who prefers growing them if we can only produce a dozen fruits in the year. The variety we grow I think must be the Black Antigua. The fruit is large, oval in shape, with large and prominent pips. The flesh when ripe is pale yellow, and as many as six gills are produced under the fruit, which has an objectionably large crown. The fruit with us takes from six to seven months to ripen from the time of showing. I think for our purpose there must be other varieties preferable, if I knew which they were. We should like a small crown—or at least my employer would—and one that would not require a great amount of heat, for I think if we had more heat the variety we grow would ripen quicker than it does. Perhaps some of your numerous correspondents will kindly reply to my enquiries. *T. H.*

Maréchal Niel Rose in the Border Counties.—On reading "M. D.'s" account of the above in last week's issue I was very much surprised. I have had a good deal of experience with this Rose as well as others, and I quite agree with "M. D." as to Maréchal Niel's growing qualities; I never had any difficulty with that—I have known it to make shoots in one year 20 feet long, but I am sorry to say I can't agree with him as to its flowering ones, I am speaking of it as an outside Rose in Berwickshire—"M. D." wrote of it as such in the neighbouring county, *i.e.*, Roxburgh. Any flowers I have seen of it outside were mere apologies for what they ought to be. I have grown it under glass to perfection, and when it is so I should say there is no Rose that can compare with it. I have also grown it outside budded on all kinds of stocks, as well as on its own roots, and my experience of it as an outdoor Rose for flowering is that it is not worth growing (of course this does not refer to southern counties, for I know it does well South). Had "M. D." said Gloire de Dijon was a great favourite amongst the farmers, instead of Maréchal Niel I should not have been at all surprised, for in this county so it is; but I find Maréchal Niel is very little known. Has "M. D." not made a mistake and given the wrong name to the Rose he saw? *Borderer, Dec.* 10. ["M. D." assured us of the correctness of his statements. EDS.]

The Late Liverpool Chrysanthemum Show.—As the senior judge at the late exhibition, allow me to say in the first place I did not know one exhibitor, and entered the hall to give, in the words of the worthy secretary, "a fair field and no favour." I have been a judge of the Chrysanthemum for the last thirty years in the neighbourhood of London, and am pleased to say I have never met with such a nefarious attempt to defraud, and was therefore taken off my guard. I never expected to find in Liverpool such an accomplished rogue amongst Chrysanthemum growers or I would have used the only means to detect such a fraud, by uncupping every bloom—a course very seldom adopted. I know there are plenty of people wise after the event, and I must say it appears very strange these worthies did not discover the fraud till the blooms became affected by the heat. As it is, I can only say I am very sorry such a charming pursuit should be marred by such a mean-spirited rascal, and trust there are not more in the North like the delinquent, or the Southerners will be very chary in accepting invitations to their floral exhibitions. *J. Dale, F.R.H.S., Middle Temple.* [We have received a further communication from Mr. Ollerhead, containing further details of the transaction, but on the principle that "the least said the soonest mended," we think that it is not advisable to continue the discussion. The shameful fraud was found out, duly reprobated, and there is an end of it. Next year no doubt some precautions will be taken to prevent so painful an occurrence happening again. EDS.]

Weather v. Protection.—That predictions as to the weather, like most other prophecies made now-a-days, are completely valueless time has proved again and again, but almanac-makers do the thing in such a vague way, that whatever occurs can be twisted to suit, and then pointed to a year after. I have heard many remark when they see Hollies, Thorns and other trees laden with their rich coral berries, that we shall have a hard winter, forgetful of the fact or not knowing that the previous spring and summer before that had all to do with putting them there by being favourable to setting the crop and ripening the wood. That severe frosts do visit this country at something like regularly recurring intervals is proved by the dates given by a correspondent last week, and as Mr. Baines under the above heading in his remarks wisely points out, it is best to be prepared with protecting material, as much loss may be averted with very little trouble. I well remember the havoc that was wrought amongst evergreens in 1860—61, when even common Laurel were sadly browned, and many killed, while the more tender Laurustinus, Sweet Bay, Arbutus, Phillyrea, and such-like, were mostly destroyed. Evergreen Oaks, too, showed the scathing effects of the cold for years after in their shabby foliage and starved-looking condition, as did many other things that struggled partially through, the sap-vessels of which had no doubt been ruptured, or the bark and wood otherwise injured so much that Nature could not quickly right matters again. Although not pretending to quickly right matters again. Although not pretending to make any forecast of the weather, there are signs that the winter will not be a mild one, as early snowstorms and cold have come like messengers to warn us to be prepared for what is likely to follow. It must either be very cold in Norway, or the fieldfares are short of food there, as at least a month back flocks of them visited us and began to make a sharp onslaught on the Hollies that abound there, and which are just now exceedingly ornamental in their Christmas attire. Although it would be impossible, in the event of a severe frost occurring, to do much to protect evergreens, some help may be afforded by a few leaves pushed around their collars, and kept there by means of branches laid on or stuck in the ground, to prevent them blowing away. It is surprising what an amount of frost plants will stand when so favoured, and what slight shelter sometimes saves their lives; and knowing this, we generally make sure with our Pampas-grasses, New Zealand Flax, Chamærops Fortunei, Bamboos, Gunnera, Dracæna australis, and such-like, by giving them a coat for the winter. Where the sight of dead leaves, litter or bracken, is objectionable, they can easily be hidden by some evergreen branches, which may be renewed when they get sere and shabby. For bulbous and herbaceous plants there is no better non-conductor than a handful or two of cocoa-nut fibre, unless it be to mulch the ground with partly decomposed leaf-soil, Nature's covering, a few inches of which will keep out a deal of frost, and be valuable as a dressing for digging in in the spring. Under such protection, if in light and dry soil, Gladiolus and many other things of a like nature are perfectly safe. *J. S.*

A Fine Old Pear Tree.—I think we have as fine an old tree in this parish of Leek, Wootton, as that described by the Forres correspondent of the *Journal of Forestry* noticed by you at p. 563, the writer of which is curious to know if it is not the largest and most prolific in Great Britain. I sent you notice of one from T. C. Crich, Chad Derby Nursery, in 1877, that was blown down in the orchard of Mr. Robert Hay, of Crich, Ambergate. Mr. Hay believes its age to be considerably over 300 years, as they have proof that in 1750 it was a much larger tree than in 1800. Up to the time of the storm that laid this monarch of the orchards low it used to be most prolific. It had two trunks dividing about 3 feet from the ground-line, the measurements of which were—circumference at base, 95 feet 6 inches; at 3 feet, 11 feet; at largest trunk, 6 feet above-ground, 6 feet 6 inches; at smaller trunk, 6 feet above-ground, 5 feet 6 inches; at largest bough, 4 feet 6 inches; next largest, 4 feet; height from ground, 45 feet: that is the largest I have yet met with. The one here is 3 feet 4 inches in circumference at 6 feet from the ground-line, which it carries upwards for at least 20 feet; spread of branches, 65 feet; height, about 60 feet. It is growing in the orchard of Mr. John Ragsdale, of the "Anchor Inn," a well-known house frequented by travellers from Warwick to the ruins of Kenilworth Castle; and most pleased is he to show it to any one, especially if, as it was this year, loaded with over 12 bushels of fine fruit. *Joseph Murdoch, Wooton, Warwick.*

Folklore.—The folklore noticed by Mrs. Watney in your last number—that it is a very bad omen to bring Hawthorn blossoms into a dwelling-house—is a survival of a much older and very curious superstition which connected the smell of the Hawthorn with the plague. *William Wickham, Binsted-Wyck, Alton.*

Potato Exhibiting.—Potato exhibitors have had to hear from time to time some harsh and untruthful things said of them, and probably they are far from being perfect, or much better than their fellows. Of one thing, however, they can feel proud—no such *fiasco* as that reported recently by Mr. Ollerhead as having been found out at the Liverpool Chrysanthemum show is possible with Potatos, and therefore there can be no element of suspicion attached to their *bona fides*. Potatos cannot be made up *à la* Chrysanthemum; they cannot be dressed as are Carnations; they cannot be decorated with smart paper habiliments or bedizened flashy paraphernalia; the tubers can be shown to the full gaze of the spectators in all their naked beauty or deformity, and thus cheating and trickery are impossible. In these respects Potato exhibiting opens no door to dishonesty, and men who exhibit have no reason to charge upon it any departures from the highest principles of morality. Now and again instances have been known where Potato exhibitors have oiled their tubers to preserve, as they say, the colour [Is not this "trickery?"], but the result has invariably been disastrous, as such is at once detected, and produces disqualification. One such case was seen at the recent International Potato show, and only one, and it simply evoked the laughter and contempt of all other exhibitors. A good deal of nonsense has occasionally been written about Potato polishing, but polishing of Potatos is simply impossible. Nature as seen in good cultivation is the only polisher, and no human effort can do what Nature has left undone. The more perfect the tubers when lifted the less need of cleansing, while excessive scrubbing simply tends to destroy the natural brightness and polish of the skin, and deteriorates the tubers so operated upon. No two growers have during the past season shown Potatos more largely or more successfully than Messrs. McKinlay and Pink, and yet these growers simply remove the soil from their tubers as lightly as possible. There is no roguish road to success in Potato exhibiting. *A. D.*

The Weather Question.—It has been well said of a prophet that we cannot refute him, but we may refuse to believe in him. In relation to the interesting topic, the coming winter, it is difficult to do either, as when we are assured by figures and references that a hard winter is inevitable we cannot assert that it is false, neither can we refuse to believe it. We have simply to hope that such may not be true, because a hard winter of the type usually termed severe, always brings in its train not only much suffering and want, both of which evils we have enough of already, but it also brings to our gardens, to our semi-hardy trees and plants, so many deaths and disasters that we may well shrink from wishing for a hard winter, even though it may be productive, as some writers assume, of death and destruction to the insects. It may well be asked what constitutes, in the prophet's mind, a severe winter. Just as one swallow does not make a summer, so also does not one sharp frost make a severe winter. We have had occasionally during the past quarter of a century some very sharp frosts, but these have usually been limited to about one or two in each so-called severe winters, whilst a long spell of severe cold has been rare, and few comparatively young men can look back upon a winter within their knowledge in which the severe weather has exceeded a couple of weeks at a stretch, although there may have been during the same season other disconnected periods of frost, but not exceptionally severe. It can hardly be correct to class frost that ranges from 10° to 15° as severe. It is not at all beyond the average cold and frost that generally supervened in the winters of our boyish days, but if we compare such degrees of frost with the limited amount that has manifested itself during the past few winters it will be classed as severe. In reality we have had no very severe frost since 1860, when on the Christmas morning perhaps the most severe and certainly the most destructive frost of the past twenty-five years visited us. It was not only intense but remarkably hoar, and perhaps to the fact that it was so is largely due the great damage done to hardy shrubs, for then huge Bays, Laurustinus, and many other fine plants were killed to the ground, as though they had been Fuchsias or Pelargoniums. Probably also some of the mischief was due to preceding moist seasons, that had promoted an exceptionally rank and immature growth; in any case the severity was not of long duration, as in a week or two the snow and frost vanished before one of those warm currents of air that seem at such times as though originating from some huge subterranean furnace. In taking a careful survey of the weather aspects it is necessary to take account not merely of the assumed recurrence of cycles of cold, but also of that which is not essentially or in any way perhaps associated with cycles—that is, the undoubted gradual but exact change of temperature that has manifested itself during the past twenty years. Take, for instance, the fact that for the past three winters there has not been in the locality of London enough frost to render skating or sliding possible, and we are at once met by a fact of the first importance. It does not follow that we may not have winters now wherein ice and skating shall be abundant enough, but there is the fact we have pointed out, and believe that it is a fact almost unique in weather annals. There is also the undoubted fact that even winters of ordinary severity—that is, enough of frost to make certain garden operations uncomfortable for a week or two—have of late become rarer than usual, whilst as a necessary corollary mild winters have become more than usually frequent, and it is when we remember these facts and consider them that we are tempted to doubt whether the cold cycles so ably quoted have still reference, and some will perhaps think that they have gone the way of earthquakes, skies of blood, fearful comets, and other terrors that used in times gone by to visit this kingdom. Whilst this question is under discussion it is pleasant to turn with interest and profit to the records

of the weather that marked the years of a century since, as given by that acute observer of the weather and its changes, Gilbert White. In his interesting *Natural History of Selborne* he gives a summary of weather that marked the years from 1768 to 1792—a period of twenty-five years; and although during that time no special reference is made to any extraordinary frost, yet frost and snow repeatedly marked all the winters, and is frequently spoken of as hard and severe. We fail to find throughout that summary one single winter in which there was not hard frost. This analys is of theweather of a hundred years since, shows plainly enough that winters now are not what they were then; and the fact that our average winter temperature is higher, points forcibly to the conclusion that, should any cold cycle visit us, it will be moderate in its force, just in proportion as the average winter has proved to be milder also. But there is another aspect of the weather that can hardly fail to have considerable influence upon the subject under discussion. Not only does White show that hard frost was the common feature of winters of a hundred years since, but also there was a much greater amount of average moisture than now affects our seasons. Rain, snow, fog, showers, constantly alternate, and the record is as diverse as possible from a record of the weather of the present age. The record of the year 1778 is a very fair average description of the moisture prevalent then. "To the 13th January, frost, with a little snow; to 24th, rain; to the 30th, hard frost; to the 23d February, dark, harsh, foggy weather, with rain; to the end of the month hard frost with snow; to the end of the first fortnight of March, dark harsh weather; from the 1st to the end of the first fortnight of April, spring weather; to the end of the month, snow and ice; to the 11th June cool, with heavy showers; to the 10th of July hot, sultry, parching weather; to the end of the month, heavy showers; to the end of September, dry, warm weather; to the end of the year, wet, with considerable intervals of sunshine." This description, imperfect as it is, of the weather of that time shows that the brave days of old were very nasty ones, and not quite so pleasant as are the days in which we now live. To give more point to the moisture aspect of the question, however, White adds a rainfall table for the years beginning 1782 and ending 1792—a period of eleven years, the rainfall in each being thus, as measured at Selborne:—50.26, 33.71, 33.80, 31.55, 34.70, 36.24, 22.50, 42, 32.27, 44.93, 48.56. This gives for the eleven years an annual average of about 37 inches, but as I have no rainfall record of recent years to refer to I am unable to say how it compares with those given by White. What is marked is that only one month of all the years shows no rainfall whatever—a fact that evidences the humid nature of the atmosphere in his time. If therefore our rainfall is less now and our air drier—if our vast systems of drainage and sewage have assisted to change the climate to some extent—and if a lessened number of trees and woods have also affected the rain average, whilst season after season tends to show that the average cold is not so intense as it was, and that frost is rarer—do not all these things in combination lead to the conclusion that cold cycles and severe winters may now be regarded, if not as apocryphal, at least as doubtful and open to question? *A. D.* [We shall see. EDS.]

Odontoglossum Warscewiczii.—I have heard this rare plant spoken of as a mere botanical curiosity, but such is fortunately by no means the case. It has just flowered here for the second time, and proved itself to be a gem among autumn-flowering Orchids, quite a fit companion to the chaste Masdevallia tovarensis, or even the rare Lælia anceps Dawsoni. It much resembles in growth a weak O. vexillarium, throwing its slender spikes well up among the foliage, and each spike bearing from two to five flowers, which in size and form are very like those of O. Phalænopsis. In colour they come nearest to O. Roezlii, being pure white, with the exception of a golden crest and a slight central shading of dull rose. The lip is not so full as in the species last-named, for instead of sweeping gracefully round it shows a rather large gap in its lower outline in the shape of an inverted V, which bilobes the lower portion of the lip. Odontoglossum Warscewiczii succeeds very well under the same treatment as is accorded to the three species named above, which I find do well in the coolest house from April to October, and pass the winter very satisfactorily in a temperature ranging from 50° to 60°. Their worst enemy is the yellow thrips, and great indeed is the evil which these little pests are able to inflict on the subject of this note. I know of no Orchid they so speedily and lastingly disfigure. I have often thought their bite to this plant must be virulent, for in no other way can I account for the ink-like stains which appear after their working. The thrips chief feeding ground is the tender blade of the leaf, from which they can be easily sponged; their home is the small cavity formed by the base of the leaf clasping the bulb. When there no ordinary fumigation or cleaning will destroy them; in such a case I have found it an excellent plan to wedge open the upper contracted part of the leaf with a flattened brush end such as is used in cleaning plants, and then pour down into the axil a mouthful of tobacco-smoke, which will either kill the thrips outright or bring them to the surface, where they can be easily dealt with. This Odontoglossum is worth taking care of, for it is not only rare but very expensive, and is likely to remain so as, according to Professor]Reichenbach's description in these columns, Odontoglossum Warscewiczii is rare in its native habitat, and extremely difficult to import alive. *Joseph C. Spyers, Burford Lodge, Dorking.*

What is a Pompon Chrysanthemum?—The disqualification of an exhibitor at one of our local exhibitions has induced me to ask this question. The class was for six varieties of Pompon Chrysanthemums, and the exhibitor was disqualified for showing Julia Lagravère as one of the six. It of course became a vexed question with the exhibitor, who had carried his plants some miles to the place of exhibition, and I determined, while Chrysanthemum lore was still green in the minds of the public, to ask some of your correspondents' opinion on the subject. I am fully aware of the fact of its being at all times classed with the large-flowering section in trade catalogues and other lists, and can also quite understand the justness of the adjudication on this head, as the judges were simply following a well-worn track, but I quite fail to see how it can be (looking at it in a plain matter-of-fact sort of way) classed with any other than the Pompon section. I have grown and taken a deep interest in this class of plants for some years, and have never failed to include this variety among my collection, on account of its rich colour; but from its habit, foliage, and size of blooms, I signally fail in being able to class it with the large-flowering section, notwithstanding that I have on several occasions grown it as a standard, and thinned the buds to a minimum in order to test its capabilities of producing large blooms, or blooms that would in any way grace a stand of reflexed flowers: and have never succeeded in securing blooms much larger than a Cedo Nulli grown in the same way, and certainly never larger than Mdlle. Marthe, a generally recognised Pompon, and one frequently seen in prize collections on the exhibition table. *J. W. Silver, Knowle Hall Gardens, December 9.*
[The Pompons are the varieties bred from the little Chusan Daisy, introduced by Mr. Fortune, and are distinguished by a dwarf close habit and rosette-like flowers. In process of time they have become crossed with the larger sorts, so that there exists a set of intermediate varieties which, like the semi-nosegay Pelargoniums, will gradually become indefinable. But certainly Julia Lagravère is not a Pompon. It has possibly sprung from some of the old tasselled varieties, as they were called. Chevalier Domage is of exactly the same type. EDS.]

Capsicums.—Like others of your correspondents, I have found the Prince and Princess of Wales Capsicums among the most useful decorative plants we grow for embellishing warm houses at this season, or as ornaments for the dinner-table—a purpose for which they are specially adapted. A large one used as a centre with two smaller sized Solanums with their red berries has a fine effect, the rich yellow of the one with the bright warm colour of the others showing up in most pleasing contrast. Unfortunately the Capsicums will not endure a lower temperature than 55° without the leaves becoming shabby, or they would be more valuable, as they would be available for use in the greenhouse or conservatory, where they would be a great help. In such structures, however, they soon become defoliated, but in mild stove heat, elevated above the heads of other plants, their drooping pods have a very cheerful appearance when seen in contrast with Dracænas and such-like plants. C. Yellow Gem is not so good as either of the two others above-named, although, if there be any difference, it fruits more freely, and is therefore worth growing on that account. The trio are of very easy culture, and do best raised from seed sown every year about the middle of March, and if nursed on for a time they may be plunged in any cold frame after the middle of May, where if closed early during the summer afternoons, they are just at home and set their flowers with much freedom. They all look best grown as standards with stems from 1 foot to 18 inches high, in which form they show off their pods to great advantage. I have tried cuttings, but they never succeed so well or make such fine-shaped plants as seedlings, and being more weakly in their habit are always more liable to insect attacks. Greenfly and red-spider are their two great enemies, the former of which cripples them when small and tender if not stopped by timely fumigation, and the latter assails them if allowed to get dry at the root or if the air around them is not kept sufficiently moist by heavy syringings overhead before closing the lights. Six-inch pots are quite large enough to grow them in for table work, as they do not require much root-room if well fed with liquid manure towards the autumn. *J. S.*

Foreign Correspondence.

HAY, MURRUMBIDGEE.—I write from a far inland little township of New South Wales, after my return from the Lachlan River, where I wished particularly at this spring season to trace the minute annuals geographically, and where also I desired to examine the vegetation of the extensive "Saltbush plains," which spread from some portions of the Murrumbidgee to the Lachlan River. Several species of Salsolaceæ sustain horses and cattle, and particularly sheep, even when in seasons of drought other herbage as well as grasses may fail. Thus Chenopodium nitrariaceum, Atriplex nummularium, and various others are valued by pastoral settlers; but the two species which for hundreds of square miles, and sometimes almost exclusively, occupy the enormous subsaline plains (which are often not bounded by any river at the horizon), are two dwarf species, namely, Atriplex vesicularia and A. halimoides, the former usually prevailing over the other, though both are most gregarious. Both are seldom over 2 feet high, resist the worst of droughts, and when eaten down by stock readily spring again. These two Atriplices deserve to be tried in other countries for pastoral purposes, especially on saline depressions, such as occur in the south-west of France, where also Phormium tenax might be cultivated to advantage.

I have been able to obtain also many notes on southern plants, now for the first time shown to grow as far north as the Lachlan River. A few novelties were noted, but not many. *Ferd. von Mueller.*

MELBOURNE: *Oct.* 11.—I have already written to you from the Murrumbidgee River about the extraordinary frequency of two of the dwarf saltbushes from the Murrumbidgee to the Lachlan River, and beyond. The traveller may pass over plains unbroken as far as the eye reaches, and these almost exclusively occupied by Atriplex vesicaria and A. halimoides. Both bushes are nutritious to sheep, and will sustain also horses and cattle, especially in seasons of drought. I was told that the heat has exceptionally there culminated in 175° Fahr. in the sun, and 125° in the shade. This frightful heat, which drives birds into the buildings of the settlers, does not shrivel the Salsolaceæ, nor the foliage of the Eucalyptus rostrata and some others; and there are besides numerous other plants which will bear this intense temperature, which far exceeds that given by Sachs as the limit of heat which a general vegetation will endure. I had an opportunity when on the Lachlan to trace a great many of the southern species so far northerly, whilst again a few tropical plants were found nearly as far south as the Murrumbidgee: for instance, Apophyllum anomalum, Goodenia cycloptera occurred in extraordinary abundance, Clianthus Dampieri grows here, not on sand, but on a firm loamy ground; it is a glorious object, visible at long distances. Some of the plains were quite white with Helipterum floribundum, of which stock are very fond; other vast tracts have a violet tinge from the flowers of Swainsona procumbens. I found on the Lachlan River also the curious Geococcus pusillus, which, like Cardamine chenopodifolia, buries its pods in the soil for maturation. Senecio platylepis, previously known only from one spot, occurs on the Lachlan and Murrumbidgee Rivers millionfold. *Ferd. von Mueller.*

STOCKHOLM.—THE ORNÄS BIRCH.—Under the signature "E. L." a correspondent has written to the Swedish *Gardeners' Journal* as follows:—Having towards the close of August had occasion to be at Falun I was enabled to visit Lilla Ornäs also, about 1¼ mile (Swedish) from Falun, for the purpose of examining the Birch tree growing there, which is known by the name of the place. This tree may be looked upon as one of the most singular in existence, since no other variety, as far as I can recollect, springs accidentally from a seed, and it has, by some botanists at all events, been deemed to be a distinct species.

The Ornäs Birch, known also as the Gustaf Vasa Birch, but improperly so, as the Birch in question certainly did not exist at Ornäs in the time of Gustaf Vasa, but is unquestionably younger, is called in a botanical work by Blom Betula dalecarlica, that name having been given it also by Linnæus (the younger?). Wahlenberg (*Flor. Suec.*) also mentions

this tree as a distinct species under the name of Betula laciniata, and Borkhousin speaks of it as Betula palmata. More recent botanists have classed the Ornäs Birch, which it properly is, as a variety of the weeping or variegated Birch, and call it Betula verrucosa dalecarlica.

The Birch in question grows at Lilla Ornäs, not far from the dwelling-house at that spot, is a tall, vigorous tree, still in its prime, and may be about 70 feet high. It was probably transplanted to where it now grows when young, and it stands in a row with Oaks and other trees. Its age is somewhat doubtful, but it can hardly exceed 150 years. The tree is described by Blom in the *Proceedings of the Royal Veterinary Academy* for the year 1876 from the accounts given of it by various botanists, but as we have not the volume at hand we cannot say whether any statement is contained in it as to the size and age of the tree at that time. It is said that when Lilla Ornäs was in the possession of the family of Hjort, of Ornäs, a member of that family noticed the tree in the woods, and transplanted it to where it now stands.

The Ornäs Birch is remarkable in this respect, that the leaves are almost cleft-divided (*pardelade*) into lanceolate acute (*lång spetsad*) lobes (*flikar*), and differ essentially in these respects in form from the leaf of the common Birch. *E. J.* [We presume the variety is that called by Regel, in *DC. Prod.* xvi., part ii., p. 164, Betula alba var. dalecarlica, and described as having pinnatifid, laciniate leaves, with the segments toothed and drawn out into long points. EDS.].

FLORISTS' FLOWERS

SEASONABLE NOTES: AURICULAS.—The plants are now at rest, and the attention they require is limited to removing dead and decaying leaves, admitting as much air as it is possible to do. Whenever the weather is favourable the lights should be removed altogether. In the neighbourhood of London and other large towns the thick fogs continued for two or three days in succession prove very injurious. In some cases it is better to keep the lights quite close. Fumigate with tobacco-smoke until there is not any trace of greenfly; if that troublesome pest is quite destroyed this month there will be no further trouble with it until the flowering period is over. Seedling pots must be watched. From now until March young plants continue to appear aboveground; the soil, therefore, must not at any time be allowed to become dusty dry. The more quiet the plants can be kept at this season the better. Trusses continue to form in mild weather, and for this reason it cannot be safe to allow the soil of such pots to become so dry that root-action ceases. If trusses form deep in the heart of the plant, and the incipient buds can just be seen, depend upon it if circumstances are favourable that will be an early and good truss. Trusses that are so far advanced that the stems can be seen should have the flower-buds pinched off.

CARNATIONS AND PICOTEES.—Like the Auricula these are injured by a close damp atmosphere, and the same precautions as to airing must be taken. The position of the plants in the frames is another matter requiring some thought. Place the plunging material into the frame so that it forms a sloping surface, and all the plants must be about the same distance from the glass. They probably keep in the best condition through the winter if the pots are about 1 foot from it. Occasionally look over the plants, and remove the dead leaves: a pair of sharp-pointed scissors is most useful for this purpose. When water is required it should be applied with a small pot, and without wetting the leaves. During this month every trace of greenfly must be removed by fumigating.

POLYANTHUSES.—Some persons do not pot up their plants from the open ground until this month. It is much too late, and they do not become sufficiently established to produce large well-marked flowers. In the North of England and Scotland the end of July or the beginning of August is considered the best time. About Manchester and in all the Midland Counties potting should certainly be done by August. About London, from the beginning to the middle of September is the best time. The trusses are formed much in the same way as those of the Auricula, but the Polyanthus does not seem to take such a long season of rest. The insect pests, too, are best destroyed this month by tobacco-smoke. Thrips and red-spider will not live in the cold weather.

HOLLYHOCKS.—The same instructions as to airing the frames holds good for these; also as to the removal of decaying leaves. If they are planted out in the frame it is a good plan to just stir up the surface soil if it is wet. The soil should be fairly moist underneath but dry on the surface. If the plants in pots have been placed in a greenhouse or on shelves in any spare house near the glass, care must be taken just to keep the roots moist. Seedlings planted out in the autumn to flower next year must have the surface soil stirred with the Dutch hoe, and if the weather is mild slugs will feed upon the leaves if they are not destroyed. Old plants of named sorts require the same treatment.

PANSIES AND PINKS. — The surface soil of the beds should be stirred with a small hoe or other iron appliance; weeds must be destroyed. If any of the leaves are eaten and the depredators cannot be discovered, watch at night with a lamp; the leather-coated grub and slugs both feed upon the plants, and they do so at night. Rabbits are also very fond of Pinks and other allied plants. Pansies in pots are quite at rest, but as they are wanted to flower early, the frame should be placed in a sunny part of the garden, and they should also be fumigated, if greenfly is present.

PHLOXES AND PENTSTEMONS. — If these are planted out in the open ground they will require but little attention. In mild weather the plants continue to make growth. The shoots at the base of the plants are now forming on Phloxes, and a warning note must again be sounded to watch for slugs, as they eat the tender growths quite off. The surface of the ground must be stirred when necessary; or if the roots have become exposed to the frost, a surface-dressing of rich soil will be highly beneficial. When severe frosts set in, mulch all such plants with dry frame manure, or the clearings-out of old Mushroom-beds.

PYRETHRUMS.—These may be allowed to remain in the ground all the winter, and it is very desirable to mulch the surface of the ground. If there is not sufficient stock, and increase is necessary, the plants may be taken up and divided, potting each portion into a 4-inch or 5-inch pot. If there is not convenience to pot them, the dividing of the plants should be delayed until spring.

DAHLIAS.—The roots of these will have been stored away, but they must not be quite neglected. The stems are rather succulent, and hold much moisture. If this has not been quite dried up the stem may become mouldy, and this spreading down to the crowns will destroy the incipient buds. See that the roots are not injured by being placed too close to hotwater pipes.

TULIPS.—If these are not yet planted out, the operation should be performed without delay, choosing a dry day for the purpose. Some of the best Northern growers do not care to plant out until December, as the rainfall in November sometimes injures the bulbs. A good time to begin to plant is when the bulbs swell at the base, showing that the roots are forming. It is very undesirable that the ground should have a soaking of rain as soon as the roots are put out; therefore, consult the weather-glass before planting. *J. Douglas.*

The Villa Garden.

GREENHOUSE WORK IN WINTER.—Happy is that Villa gardener who has a greenhouse which can be heated when required to resist the influences of damp and cold, and keep at bay all destroying conditions that would harm his plants. If the fallen snow has left the heavens all coldly clear, and the icy hand of the stern frost is tightening its grip on the fettered earth, he is superior to his garden-loving neighbour who has only his unwarmed structure, and by means of contrivances can manage to mitigate something of the effects of frost if he cannot altogether hold them at bay; though he too, as was shown last week, is not altogether deprived of intercourse with floral visitants that bear witness during the dreary parenthesis of winter to the sure coming of the time when spring will unlock the imprisoned flowers to paint the laughing soil.

AZALEAS AND CAMELLIAS.—In the warm greenhouse Azaleas and Camellias will be foremost in imparting a floral warmth to its appearance. There is the very useful Azalea amœna, with some of its improved varieties, which is now in nice bloom, effective in bouquets, and useful for a buttonhole, either by itself or in combination with other flowers. There are early flowering Azaleas also that come in at Christmas and soon after, and if these have been kept in heat to drive them on into flower, they, when removed to the colder atmosphere of the flowering house should not be exposed to cold draughts, but for a fortnight or so kept where they will be close and warm. While they occupy this intermediate position the plants should be tied out as required and the pots cleaned, so that when they are placed in a more exposed position amid the flowering plants they may be seen to the best advantage.

Who does not love a Camellia? What Villa gardener can be insensible to the seductive influences of a beautiful bloom of C. imbricata alba. The solidity of such a bloom seems to chime in with the season of the year when there is little of flower in our plant-houses. Camellias in bloom should be carefully guarded from drip during rainy weather, and should also be afforded a free supply of air on all favourable occasions, using a little fire-heat whenever necessary to keep out damp, and maintain a genial temperature, for the plants are as impatient of a close damp atmosphere, as they are of a close hot one. It is to the latter cause, no doubt, that should be attributed many of the losses amateur cultivators of plants sustain in consequence of their Camellia buds dropping.

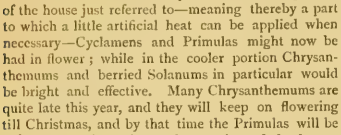
What is known as the scale is a garden pest apt to infest Camellia plants, and the Villa gardener should have his plants well cleansed from it, if it should unfortunately exist, before the buds are so far advanced as to be liable to be injured by the cleansing operation. Here it may be remarked that Camellia plants are subject to the attacks of the scale insects, both brown and white, the latter being much the worst to deal with, for if allowed to go on unchecked it soon increases to a serious extent on both wood and leaves. The white scale appears to be much more tenacious of life than the brown one, and in order to dislodge it a more thorough remedy is required. An ordinary toothbrush and a sponge and some warm soapy-water will, however, get rid of it by repeated applications. Perhaps Villa gardeners are as a rule scarcely alive enough to the importance of cleansing the branches and thick leaves of such things as Camellias a few times during the year. It does the plants good, it keeps the parts clean, and these acts of cleansing tend materially to keep objectionable insects from infesting them.

Let us get back to the subject of Azaleas again for the sake of touching on a subject of some moment, that is, the matter of watering. At this season of the year the plants require comparatively little water; but it is necessary to remember that the keener the frost the more fire-heat has to be applied, and this produces a drying atmosphere which tells upon the plants. It is well to look over the plants twice a week for the sake of examining them, so that none may be neglected, and when a plant is found to be dry it should be watered thoroughly. Remember that the roots of the Azalea form themselves into a dense ball-like mass, into which water penetrates but slowly. When this mass of roots becomes dry it contracts and is drawn away from the sides of the pot, and the water that is poured on to the surface of the soil in the usual manner runs down the sides of the pot between it and the ball of roots, which it does not penetrate at all. In this way amateur gardeners lose many plants, and wonder at the cause of the decay. Any plant so dry as thus represented should be stood into a pail of water, and remain there long enough for the soil to become thoroughly soaked through.

By way of having blooms from Azaleas as early in the year as possible, we may remark that plants which set their bloom-buds early in summer, and have had a long rest, may, if wanted in bloom as soon as possible, be placed in a moist warm house, when such forms a part of the Villa gardener's glass accommodation; and if they are properly attended to, and a high moist temperature can be maintained, may be had in bloom in January. All, however, depends on the means for getting them into flower.

But here a word of warning is necessary. The Villa gardener, in his anxiety to get his Azaleas into bloom as quickly as possible must not take them out of the high moist temperature recommended, and place them at once in a much cooler temperature, if he would enjoy their beauty for any length of time. To bring the plants into a house where the temperature falls much below 50° would do them irremediable harm; a cold, dry, airy house would exercise a baneful influence on plants that had hitherto enjoyed something much hotter and moister. If there is no intermediate stage, it will be better to allow the plants to remain in the forcing house till they can with some degree of safety be changed over to their cooler quarters.

THE CHINESE PRIMULA. — Here is another charming subject for this season of the year, and in common with the Cyclamen relays of plants could be made to bloom successionally. In the warm portion of the house just referred to—meaning thereby a part to which a little artificial heat can be applied when necessary—Cyclamens and Primulas might now be had in flower; while in the cooler portion Chrysanthemums and berried Solanums in particular would be bright and effective. Many Chrysanthemums are quite late this year, and they will keep on flowering till Christmas, and by that time the Primulas will be ready to go into the cooler portion of the house. While there is something in strains of Chinese Primulas, it is yet needful to employ heat at this time of the year to get the trusses of bloom displayed well above the foliage. Solar heat will do this in spring, but just now, when solar heat is at its lowest, aid from artificial heat—only a little—is of great advantage. Of late years such great improvements have been made in Primulas that it is not difficult to get a strain characterised by close compact growth and trusses of large finely fringed flowers. The Villa gardener should not only aim to grow well, but to cultivate only those things that are worthy his best attention, for it is found in practice that it is the best form of any plant that can lay claim to the greatest decorative effect, and yield the largest amount of pleasure to him who tends it.



STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, DEC. 11, 1878.

MONTH AND DAY.	BAROMETER: Mean Reading Reduced to Sea-level.	BAROMETER: Departure from Average of 18 years	TEMPERATURE OF THE AIR: Highest.	TEMPERATURE OF THE AIR: Lowest.	TEMPERATURE OF THE AIR: Range.	TEMPERATURE OF THE AIR: Mean for Day.	TEMPERATURE OF THE AIR: Departure of Mean from Average of 18 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Degree of Humidity. Sat. = 100.	WIND: Average Direction.	RAINFALL.
Dec.	In.	In.	°	°	°	°	°	°			In.
5	29.88	+0.12	41.0	31.1	9.9	36.0	−3.7	35.1	90	WNW. N.W.	0.00
6	29.78	+0.01	36.5	30.0	6.5	33.2	−8.5	29.2	85	W.	0.04
7	29.45	−0.32	35.8	30.4	5.4	34.0	−7.5	28.9	96	NNW. N.W.	0.10
8	29.34	−0.44	34.8	32.0	2.8	33.2	−8.2	31.2	92	N.W.	0.01
9	29.50	−0.28	33.4	27.9	5.5	31.0	−10.2	28.4	89	WNW. N.W.	0.00
10	29.61	−0.11	30.8	26.0	4.8	28.2	−12.8	22.3	77	N.E.	0.00
11	29.68	+0.11	31.0	25.9	8.0	30.2	−10.6	26.2	84	NNE. NNW	0.00
Mean	29.62	−0.16	35.5	29.2	6.3	32.5	−8.8	29.3	88	N.W.	Sum 0.15

Dec. 5.—Overcast, dull and cold. Fog and hoar frost in morning.
— 6.—Fine and bright but very cold. Overcast and snow fell after 9.30 P.M. Little rain at midnight.
— 7.—Overcast, dull and cold throughout. Rain fell in early morning. Sleet fell at 9 P.M. for a few minutes.
— 8.—A dull cloudy day. Very cold. Sun's place visible a times. Slight rain in early morning.
— 9.—Overcast, dull and foggy throughout. Raw cold. Moon's place visible at night.
— 10.—A dull overcast foggy day. Bitterly cold.
— 11.—Overcast and dull throughout. Very cold. Thin snow fell from 9.30. A.M. to 3.30 P.M. Fog.

Note.—The temperature of the air has been almost continuously below its average since October 27, the average deficiency of mean temperature below the average for the 46 days ending to day, December 11, is nearly 5°

LONDON: *Barometer.*—During the week ending Saturday, December 7, in the suburbs of London the reading of the barometer at sea level decreased from 29.98 inches at the beginning of the week to 29.70 inches by the afternoon of December 1, increased to 30.24 inches by the morning of the 4th, and decreased to 29.60 inches by the end of the week. The mean reading for the week at sea level was 29.98 inches, being 0.36 inch above that of the preceding week, and 0.04 inch above the average. The mean daily reading on the 4th was 0.28 inch above the average, whilst that on the 7th was 0.32 below.

Temperature.—The highest temperatures of the air observed by day varied from 43° on the 5th to 35¾° on the 7th; the mean value for the week was 39½°. The lowest temperatures of the air observed by night varied from 30° on the 6th to 34° on the 1st; the mean for the week was 32°. The mean daily range of temperature in the week was 7½°, the greatest range in the day being 11° on the 5th, and the least 5¾°, on the 7th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—December 1st, 37°.3, — 4°.4; 2d, 36°.7, —5°.1; 3d, 36°, — 5°.8; 4th, 37°.4, — 4°.4; 5th, 38°, — 3°.7; 6th, 33°.1, — 8°.5; 7th, 34°, — 7°.5. The mean daily temperature of the air for the week was 36°.1, being 5°.6 below the average of sixty years' observations.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 77° on the 3d, and 51¾° on the 6th; on other days the highest readings were about 45°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 25° on the 6th, 27¾° on the 5th, and 29½° on the 4th; the mean of the seven lowest readings was 29½°.

Wind.—The direction of the wind was N., and its strength gentle. The weather during the week was dull, very cold, and the sky generally overcast. *Fog* prevailed on the 5th, and *snow* fell on the 6th and 7th.

Rain or *snow* fell on four days during the week; the amount measured was 0.24 inch.

ENGLAND: *Temperature.* — During the week ending Saturday, December 7, the highest temperatures of the air observed by day were 48° at Truro, 45¼° at Bristol, and 45° at Plymouth; the highest temperature of the air at Wolverhampton was 41¼°, and at Leicester was 41⅔°; the mean value from all places was 43½°. The lowest temperatures of the air observed by night were 23⅔° at Bolton, 25⅓° at Wolverhampton, and 27° at Truro; the lowest temperature of the air at Liverpool was 31¾°, and at Norwich and Sunderland was 31°; the mean value from all stations was 29°. The range of temperature in the week was the greatest at Truro, 21°, and the least at Liverpool, 11⅓°.

The mean of the seven high day temperatures was the highest at Truro, 46⅓°, and at Plymouth 42⅓°; and the lowest at Cambridge and Wolverhampton, both 39°, and Blackheath 39⅓°; the mean from all places was 40⅔°. The mean of the seven low night temperatures was the lowest at Bolton, 28⅓°, Wolverhampton 29⅓, and Hull 30⅓°; and the highest at Sunderland, 34⅔°, and Norwich, Liverpool, and Leeds, all 34°; the mean from all stations was 32¼°. The mean daily range of temperature in the week was the least at Norwich and Sunderland, 6°, and the greatest at Truro, 14⅓°; the mean daily range from all places was 8⅓°.

The mean temperature of the air for the week from all stations was 36⅓°, being 6° lower than the value for the corresponding week in 1877. The highest were 39¼° at Truro, 37¾° at Sheffield, Liverpool, Leeds, and Sunderland; and the lowest were 34° at Wolverhampton, and 34⅓° at Bolton.

Rain.—The amounts of rain measured at the several places during the week varied from 0.72 inch at Hull, 0.66 inch at Bolton, 0.64 inch at Truro, and 0.62 inch at Sunderland, to 0.11 inch at Bristol. The average fall over the country was 0.34 inch.

The weather during the week was still very cold and dull.

Snow fell at Hull on the 5th inst., and at London, Cambridge and Hull, on the 6th inst.

SCOTLAND: *Temperature.* — During the week ending Saturday, December 7, the highest temperatures of the air varied from 46° at Paisley, to 41° at Perth; the mean value from all places was 42⅔°. The lowest temperatures of the air varied from 21° at Perth to 28⅓° at Aberdeen; the mean value from all stations was 25⅓°. The mean range of temperature in the week from all places was 16⅔°.

The mean temperature of the air for the week from all stations was 35⅓°, being 4° lower than the value for the corresponding week in 1877. The highest was 37¼°, at Paisley, and the lowest 32⅓°, at Perth.

Rain.—The falls of rain were small everywhere: the amounts varied from four-tenths of an inch at Aberdeen, to two-hundredths of an inch at Glasgow; the average fall over the country was two-tenths of an inch.

DUBLIN. — The highest temperature of the air was 45⅓°, the lowest 23⅓°, the range was therefore 22½, the mean was 35⅓°, and the fall of rain 0.07 inch.

JAMES GLAISHER.



Law Notes.

TENNANT *v.* RAWLINGS.—The former trial in this case has been already fully reported, since which leave had been obtained from the late judge of the Bloomsbury County Court for a new trial, which came on for hearing on November 29 before W. Bacon, Esq., the newly appointed judge.

Mr. Moreton appeared for the plaintiff, and Mr. McCall for the defence.

Mr. Moreton, in addressing the Court, said that the late Judge had granted a new trial, in order that the jury might consider whether the work was done in a workmanlike manner, and, secondly, whether the cheque for £76 3*s.* 1*d.*, paid by the defendant to the plaintiff, was in full satisfaction of the plaintiff's claim.

The facts of the case were, that the plaintiff, a horticultural architect, had contracted with the defendant to erect him a greenhouse at his residence at Chalk Hill, near Kingsbury, for the sum of £174, which being done the defendant deducted the sum of £26 odd for expenses subsequently incurred in making a drain in connection with the greenhouse after the work had been completed, and for carrying out which drain the plaintiff had not contracted.

The plaintiff's evidence was identical with that given on the former trial.

Alexander Peebles, R.I.A., called, said he was district surveyor for the parish of Marylebone, and considered the work, so far as the greenhouse was concerned, had been done in a workmanlike manner. There was no necessity for a drain, as a cesspool might have been made at a cost of a few shillings, which would have drained the stokehole, and that if a drain had been specified the cost would have been mentioned.—In cross-examination, the witness said he had erected scores of greenhouses, and the drain in this instance formed no part of the specification.

Mr. Dixon said he had twenty years' experience in the erection of greenhouses and conservatories, and considered the work done in a businesslike manner.

This being the evidence in the plaintiff's case, Mr. McCall urged on the part of the defence that the plaintiff had no case, as he had received a cheque in full settlement of his claim, and that the learned Judge had ruled so.

This statement being contradicted by the other side, Mr. McCall quoted the case of *Croft* v. *Lumley*, quoted in 27 Law Journal Q.B. Reports, p. 330, in support of his case, and on that ruling urged there was no case to go to the jury.

The defendant, W. D. Rawlings, a mineral water manufacturer, was then called: said he relied entirely on the plaintiff's skill, and acquiesced in his judgment in the matter, but when the greenhouse was completed, and while the plaintiff was erecting a conservatory for him, it was found that the water had flooded the stokehole so as to render the greenhouse perfectly useless, and he told the plaintiff so, and further said that he should erect a drain to complete the work, and charge the plaintiff with it.—In cross-examination the witness said he employed no other architect but his clerk, Mr. Coleman.

Mr. Haynes, an architect, said the work could not be considered as done in a workmanlike manner, as the drain was absolutely necessary.

Mr. Anderson, a gardener, said that the drain was requisite, as the greenhouse was useless when the water prevented the fires being lit.

After Mr. McCall had addressed the jury,

The learned Judge directed the attention of the jury to two points:—1, Did they consider the work done in a workmanlike manner? and 2, Did they think the cheque given by the defendant was accepted by the plaintiff in full satisfaction of his claim. The jury considered the work was done in a workmanlike manner, and that the plaintiff did not receive the cheque in full satisfaction.—Judgment was accordingly entered for plaintiff for the full

amount claimed, with costs. Mr. McCall gave notice of appeal to the High Court of Judicature.

A SINGULAR ACTION BETWEEN TWO SALESMEN.—At the Westminster County Court on Friday last the case of Thomas *v.* Hoar was heard before Mr. Judge Bayley, in which the plaintiff and defendant were both Potato salesmen carrying on business in Covent Garden. The action was brought to recover the sum of £26 10*s*., being the balance of an account with reference to 146 bags of Potatos alleged to be sold and delivered to the defendant.

The plaintiff having stated his case, it was urged on the part of the defence that the plaintiff was debarred from recovering, as there had been no actual delivery of the goods to the defendant, they having been consigned by a firm in Antwerp to a person named Larkinson, a fruit salesman carrying on business at Wolverhampton, who had the bill of lading, and who upon it had recovered compensation from the Great Eastern Railway Company in 1874 for non-delivery of the Potatos at their proper time.

The plaintiff's solicitor here stated that in 1876 he wrote to the defendant, requiring the name of the person at Wolverhampton to whom the Potatos were consigned, when it was ascertained that Larkinson had received the goods and had obtained a sum for the non-delivery of them in a proper time.

At this stage of the case, Mr. McCall, who appeared as counsel for the plaintiff, said that as part of the money had been received by his client, he was equitably entitled to the whole, as the plaintiff had actually sold the goods, which defendant, in the course of his business, resold to his customer at Wolverhampton. It was now suggested on the part of the defence that the case of Renardson *v.* Walker, quoted in 40 Law Journal and 1 Law Reports (Exchequer), completely put the plaintiff out of Court.

The learned Judge said he thought otherwise, and considered there was an equitable delivery of the Potatos to the defendant, who perhaps ought to have given notice to the plaintiff if he had waived any right in the Potatos. Still, in spite of which however, judgment must be in favour of plaintiff for the the full amount claimed.

The counsel for the defence gave notice of appeal, which the Court granted.

Variorum.

THE PAPAW.—At a recent meeting of the Berlin Natural History Society, Herr WITTMACH gave an account of some researches and experiments he had undertaken upon this subject, which are thus summarised in a recent number of the *Pharmaceutical Journal*.

"A perfectly ripe undamaged Papaw fruit measures from 7 to 8 inches in length, and 3 to 4 inches in widths and has the appearance of a rather long Melon; it has a beautiful yellow rind, which in its taste also resemble, the Lemon, though with a slight flavour of turpentine. The most interesting and important property attributed to it, however, is the power of its juice to rapidly render hard flesh tender.

"As far back as the year 1750, GRIFFITH HUGHES says, in his *History of Barbadoes*, 'This juice is of so penetrating a nature that if the unripe peeled fruit be boiled with the toughest old salt meat, it quickly makes it soft and tender, and if pigs be fed with the fruit, especially unripe, the thin mucous matter which coats the inside of the intestines is attacked, and, if the food be not changed, is completely destroyed.' According to BROWNE, meat becomes tender after being washed with water to which the juice of C. papaya has been added, and if left in such water ten minutes it will fall from the spit while roasting, or separate into shreds while boiling. According to HOLDEN, the flesh of an animal hung to a branch of the tree is rendered tender. KARSTEN says that in Quito the use of Carica juice when boiling meat is very general, but in Venezuela and Costa Rica the practice is unknown. Some further experiments were made by ROY, who obtained by making incisions in a single fruit 28.39 c.c. of the milky juice, which after evaporating to dryness and again diluting with water, had a powerful action upon flesh, albumen and gluten, while starch remained unaltered by it.

"Herr WITTMACH, the author of the present paper, obtained after repeated incisions of a half-ripe fruit only 1.195 grain of white milky juice of the consistence of cream. This dried in a watch-glass to a hard vitreous white mass, having what appeared to be greasy spots on the surface, but what really were flocks of gelatinous substance that always adheres to the more hardened material. The odour and flavour of the fresh juice recalled that of petroleum or of vulcanised indiarubber. The microscope showed it to be a fine grumous mass containing some larger particles and isolated starch grains. Iodine coloured the juice yellowish brown.

"A portion of the juice was dissolved in three times its weight of water, and this was placed with 10 grams of quite fresh lean beef in one piece in distilled water, and boiled for five minutes. Below the boiling point the meat fell into several pieces, and at the close of the experiment it had separated into coarse shreds. In the control experiments made without the juice the boiled meat was visibly harder. Hard-boiled albumen, digested with a little juice at a temperature of 20° C., could after twenty-four hours be easily broken up with a glass rod. Fifty grams of beef in one piece, enveloped in a leaf of C. papaya during twenty-four hours at 15° C., after a short boiling became perfectly tender; a similar piece wrapped in paper and heated in the same manner, remained quite hard. Some comparative experiments were also made with pepsine, and the following are the conclusions arrived at by the author:—

"1. The milkly juice of the Carica papaya is (or contains) a ferment which has an extraordinarily energetic action upon nitrogenous substances, and like pepsine curdles milk.

"2. This juice differs from pepsine in being active without the addition of free acid—probably it contains a small quantity; and further, it operates at a higher temperature (about 60° to 65° C.) and in a shorter time (five minutes at most).

"3. The filtered juice differs chemically from pepsine, in that it gives no precipitate on boiling, and further that it is precipitated by mercuric chloride, iodine, and all the mineral acids.

"4. It resembles pepsine in being precipitated by neutral acetate of lead, and not giving a precipitate with sulphate of copper and perchloride of iron."

Enquiries.

He that questioneth much shall learn much.—BACON.

CLAY'S FERTILISER.—Where can this manure be procured? *K.*

POOR RATES.—Are nurserymen rated for poor-rates the same as other people, or one-fourth less? *H. C. B.* [It depends entirely on the custom prevailing in each particular locality. These is no fixed rule to go by. EDS.]

Answers to Correspondents.

ADIANTUMS: *W. Smythe.* Your Adiantums are not "in flower" as you suppose; the appearances you mistake for flowers arise from some arrest of growth, the coloured parts being diminutive pinnules.

ABUTILONS: *H. Parr.* The flowers sent are small, but one or two appear to be bright and effective in colour, especially No. 4, and perhaps also No. 3. The flowers of these plants travel badly, and when they have to be sent on for opinion they seldom arrive in a satisfactory condition. There was, and probably still is, a good collection of them at Chiswick; if you could manage to look in and see them you would judge better than we can from a single flower.

BOOKS: *T., Farnborough.* The *Cottage Gardener's Dictionary* is published by Bell & Daldy, York Street, Covent Garden. Any bookseller could get it for you. —*E. G. L.*, Mrs. Loudon's *Amateur Gardener's Calendar*, published by Warne & Co., Bedford Street, Covent Garden, W.C. Your other question next week.

CORNUS ALBA: *G. M.* We should think so; but the general practice in the nurseries is to layer it.

COVENT GARDEN: *W. D.* The hours of business are —in the wholesale market from 4 A.M. to 6 P.M.; in the retail department from 7 A.M. to 8 P.M.

EDGINGS UNDER TREES: *Hensell.* There is nothing better than the Ivy; the Honeysuckle will not be so good. Of the Ivies you send No. 1 will suit best, but the small-leaved common English Ivy would also be suitable.

FUNGUS: *E. Heath.* The common Stinkhorn, Phallus impudicus. Please do not send any more.

GARDEN NETTING: *An Old Sub.* The best and cheapest plan is to send the nets to a tanyard to be steeped in the bark-pits for three or four days.

GRAFTING VINES: *J. W. J.* You may graft the Vines upon the bottle system at any time from the fall of the leaf to the rising of the sap. The only way in which it differs from whip grafting consists in leaving a spur of two or three buds below the union sufficiently long for insertion in a bottle suspended from the stock, and which must be kept constantly full of water. Grafts may be put on side spurs or shoots, but having three rods to each Vine you might cut down one and put on two grafts; the latter should be ripe, of medium strength, and 12 to 15 inches in length. Having made a neat union, as in whip-grafting, bind tightly with good string, insert the heel in the bottle, and protect with grafting clay or moss. Vines grafted in this way make rods of great strength the first season, and it frequently happens that they show and mature a bunch of Grapes without any apparent detriment to the Vine.

HEATING: *Querist.* You may certainly heat your house by flues, but we cannot advise you how to arrange them without the ground plan. To get sufficient command of heat for forcing you will require the flue to pass along the front, cross the end, and along the back path. If well built they will answer, but you must take care to supply moisture by the aid of evaporating pans. You would find hot-water pipes much simpler and better, and they should not be much more costly than good flues. The water might be circulated in earthenware pipes if you cannot afford cast-iron ones. You would need at least four rows of 4-inch pipe in front.

NAMES OF PLANTS: *S.* Phillyrea media.—*J. M.* The Orchid is Maxillaria picta, and the other plant Coccoloba platycladon. The Ferns are too small.—*J. Urquhart.* Zygopetalum crinitum.—*T. W.* 1, Zygopetalum crinitum; 2, next week.—*H. H. A.* 1, Calathea zebrina; 2, Calathea bicolor; 3, Dalechampia Roezlii.—*C. Prichett.* Phajus grandifolius. The Impatiens seems to be a white variety of I. flaccida.—*W. Adams.* Euonymus europæus.—*H. F., Middlehurst.* The Butcher's Broom, Ruscus aculeatus. It is used in tanning for sprinkling the leather with water.—*G. R.* We cannot undertake to name Roses.

PINE-APPLE SEEDS: *C. W.* In an ordinary fruit no perfect seeds are developed. The flowers must be artificially fertilised to produce seeds, which are formed and developed in the pips.

RED-SPIDER ON ORCHARD-HOUSE TREES: *W. B.* Dissolve about 4 oz. of soft soap in a gallon of water, add to it a thumb-potful of soot, and ¼ lb. of flowers of sulphur; paint the trees with this mixture. Red-spider should be kept from the trees during summer by daily syringing. We never find it necessary to winter-dress our trees to destroy spider. *J. Douglas.*

SOL. PHENYLE: *Horticulturist.* The manufacturers are Messrs. Morris, Little & Son, Doncaster.

TUBEROSES: *T., Farnborough.* See our number for October 27 of last year, p. 530.

TUBEROUS-ROOTED BEGONIAS: *Thos. Davis.* You will find all the information you want in our issue for November 2, at p. 560.

VINE EYES: *J. W. W.* Yes, if you can command sufficient heat. Make the bed up the same as you would do for Cucumbers.

*** Correspondents are specially requested to address, post-paid, all communications intended for publication to the "*Editors*," and not to any member of the staff personally. The Editors would also be obliged by such communications being sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see. *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editors.*

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

CATALOGUES RECEIVED:—Messrs. Robert Mack & Son (Catterick Bridge, Yorkshire), Catalogue of General Nursery Stock, Fruit Trees, Conifers, &c.—Messrs. W. Barron & Son (Elvaston Nurseries, Borrowash, Derby), Trade List of Coniferæ and Ornamental Trees, &c.; also Descriptive Catalogue of Ornamental Plants, &c.—Messrs. J. J. Thomas & Co. (285 and 362, Edgware Road, London, W.), Illustrated Catalogue of Garden, Farm, and other Iron and Wire Goods.—Galloway & Graham (138, Queen Street, Glasgow), Catalogue of Choice Hybrid Gladioli.—Thomas Studd (Grange Nursery, Heaton Mersey), Catalogue of Roses and Easily Grown Plants.

COMMUNICATIONS RECEIVED.—W. S.—W. R. M'N.—G. T.—C. N.—E. O. F.—R. F.—H. G. E.—P. G.—E. S. D.—J. D. H—H. R.—A. T.—G. J.—C. A., Leeds (thanks for the suggestion).—G. P.—J. R.—J. H.—J. V. & Sons—W. P. H.—W. T.—E. A. O. (thanks).—J. G. B.—E. W. & S.—J. C. & Sons.—W. E.—A. C. L.—A. F.—J. T.—B. F.—W. Bardney (yes. Received with thanks).—A. R.—A. D.—W. E. R.—A. M.—H. E. W.—A. O.—J. F.—C. H. (many thanks).—J. S.—A. M.

Markets.

COVENT GARDEN, December 12.

Our market remains the same; large supplies of American goods still arriving, while the better class of English Apples command good prices. Kent Cobs quiet. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	.. 1 6	5 0	Oranges, per 100	.. 4	6 8 0
Cobs and Filberts, lb.	0 9	0 1 0	Pears, per doz.	.. 4	0 8 0
Grapes, per lb.	.. 2	0 6 0	Pine-apples, per lb.	2	0 4 0
Lemons, per 100	.. 3	0 10 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English			Herbs, per bunch	.. 0	2– 0 4
Globe, doz.	.. 2	0– 4 0	Horse Radish, p bun.	4	0– ..
— Jerusalem, bush.	4	0– ..	Lettuces, Cos, Eng.,		
Asparagus, Fr. sprue,			per score	.. 1	6– 2 6
per bundle	.. 1	6– ..	Mint, green bunch	.. 0	4– 0 6
— English, per bun.	3	0– ..	Onions, young, bun.	0	4– 0 6
Beans, French, p. 100	2	0– ..	Parsley, per bunch	.. 0	4– ..
Beet, per doz.	.. 1	0– 2 0	Radishes, per bunch	0	1– 0 3
Brus. sprouts, bush.	7	0– ..	— Spanish, doz.	.. 1	0– ..
Cabbages, per doz.	.. 1	0– 2 0	— New Jersey, doz.	2	0– ..
Carrots, per bunch	.. 0	4– 0 6	Shallots, per lb	.. 0	6– ..
Cauliflowers, per doz.	2	0– 3 0	Seakale, per punnet	2	6– ..
Celery, per bundle	.. 1	6– 2 0	Spinach, per bushel	2	0– ..
Chilis, per 100	.. 2	0– ..	Sweet Potatos, per lb.	0	6– ..
Cucumbers, each	.. 0	4– 1 6	Tomatos, per dozen	2	6– 3 0
Endive, Batav. dozen	1	6– ..	Turnips, p. 12 bunch	3	0– ..
Garlic, per lb.	.. 0	6– ..			

The Potato market is quiet, and without alteration in prices.—Regents, 100*s.* to 130*s.*; Early Rose, 170*s.* to 220*s.* per ton.

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Mignonette, 12 bun.	6 0	9 0
Arum Lilies, 12 blms.	9 0	18 0	Narcissus, paper-white, 12 sprays	.. 2 0	6 0
Azaleas, 12 sprays	.. 1 6	3 0	Pelargoniums, 12 spr.	2 0	4 0
Bouvardias, per bun.	1 0	4 0	— zonal, 12 sprays	1 0	2 0
Camellias, per dozen	4 0	12 0	Primula, double, per bunch	.. 1 0	2 0
Carnations, per dozen	1 6	4 0	Roses (indoor), doz.	1 6	12 0
Chrysanth., per doz.	2 0	6 0	— (outdoor), 12 bun.	9 0	18 0
— per 12 bunches	9 0	18 0	Stephanotis, 12 sp	.. 9 0	18 0
Epiphyllum, 12 blms.	1 0	3 0	Tropæolum, 12 bun.	2 0	6 0
Eucharis, per doz.	.. 9 0	12 0	Tuberoses, per dozen	1 0	3 0
Gardenias, 12 blms.	9 0	12 0	Violets, 12 bunches	1 6	3 0
Heliotropes, 12 sp.	.. 0 6	1 0			
Hyacin., Rom., 12 sp.	2 0	4 0			
Lily of Valley, spray	1 0	2 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lily, or Richardia æthiop., doz.	18 0	30 0	Euonymus, var., doz.	4 0	18 0
Azaleas, per dozen	24 0	60 0	Ferns, in var., p. doz.	4 0	18 0
Begonias, per doz.	.. 6 0	12 0	Ficus elastica, each	2 6	15 0
Bouvardias, per doz.	9 0	24 0	Foliage Plants, various, each	.. 2 0	10 6
Camellias, per dozen	18 0	60 0	Hyacin., Rom, doz.	12 0	18 0
Chrysanth., per doz.	6 0	30 0	Mignonette, per doz.	6 0	9 0
Cyperus, per doz.	6 0	12 0	Myrtles, per doz.	.. 6 0	12 0
Dracæna terminalis	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	18 0	24 0	Pelargoniums, scarlets, zonal doz	.. 6 0	12 0
Epiphyllum, per doz.	18 0	60 0	Primulas, per dozen	5 0	9 0
Erica Caffra, p. doz.	6 0	9 0	Solanums, ber., doz.	6 0	18 0
— gracilis, p. dozen	9 0	12 0			
— hyemalis, p. doz.	12 0	42 0			

SEEDS.

LONDON: *Dec.* 11.—Business in farm seeds has not during the present week exhibited any material change. Of new English red there is a good supply, but the great majority of the samples show only medium quality—large and purple seed being exceptional. As regards American seed the position is unaltered. Fifteen hundred bags on the way from New York to Hamburg have, it is said, gone down in the *Pomerania*. From the Board of Trade Returns just issued it appears that the imports of Clover and grass seeds show for the past month a most marked falling off; the exact tonnage received during November of the following years being as under:—November, 1876, 2607 tons; 1877, 1876 tons; 1878, 582 tons. Trefoils and white Clovers are neglected: the low price of Alsike has induced a certain amount of buying. Hemp and Canary seeds move off slowly on former terms. Owing to the severe weather there is a better trade for boiling Peas. White Mustard finds buyers at late rates; there is a scarcity of fine Rape seed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Monday's market was very inert, but the price of English Wheat was fully maintained—foreign Barley sustaining the quotations of last week. The demand for Barley, Maize, and Peas was not sufficient to test quotations. Oats gave way 6*d.*, and though there was no quotable change in flour, the tendency was against the seller.—Trade on Wednesday was a trifle firmer in consequence of the sharp frosty weather; but there was no improvement in the amount of business in progress. For English and foreign Wheat rates were about the same as on Monday, with the difference that the tendency was stronger. Barley, except very fine malting, was dull, and a limited inquiry prevailed for the various other classes of produce. Oats were perhaps a little steadier; and prices were somewhat better supported as regards Maize. —Average prices of corn for the week ending December 7: —Wheat, 40*s.* 11*d.*; Barley, 39*s.* 4*d.*; Oats, 21*s.* 1*d.* For the corresponding period last year:—Wheat, 51*s.* 4*d.*; Barley, 44*s.* 1*d.*; Oats, 23*s.* 10*d.*

CATTLE.

The weather proving favourable trade in beasts at Copenhagen Fields on Monday was active, and prices improved on the average. Trade in sheep was not over brisk, and ewes and second quality met with a dull sale. Trade was not particularly good for calves. Quotations: —Beasts, 4*s.* 6*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.*; calves, 5*s.* 4*d.* to 6*s.* 4*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 2*d.* to 7*s.*; pigs, 4*s.* to 5*s.* 4*d.*—Thursday's trade was quiet and without feature. The supply of beasts was above the average of a Thursday. Of sheep the show was moderate. Beasts sold quietly at barely Monday's prices, and sheep were unaltered. Calves were disposed of at late rates.

HAY.

Thursday's Whitechapel market report states that the supply was moderate, and there was a steady trade at previous prices. Quotations:—Prime Clover, 100*s.* to 110*s.*; inferior, 80*s.* to 90*s.*; prime meadow hay, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 40*s.* per load.—Cumberland Market quotations:—Superior meadow hay, 88*s.* to 95*s.*; inferior, 63*s.* to 75*s.*; superior Clover, 108*s.* to 116*s.*; inferior, 78*s.* to 92*s.*; and straw, 38*s.* to 42*s.* per load.

COALS.

A brisk demand was experienced for house coals at market on Monday owing to the colder weather, and best descriptions rose 6*d.* per ton. Business on Wednesday was characterised by increased firmness, and a further advance of 6*d.* per ton was registered. Quotations:—Bedside West Hartley, 16*s.* 3*d.*; East Wylam, 17*s.* 9*d.*; Springwell West Hartley, 16*s.* 3*d.*; West Hartley, 16*s.* 3*d.*; Walls End—Easington, 17*s.* 9*d.*; Hetton, 20*s.*; Hetton Lyons, 17*s.* 9*d.*; Hawthorns, 17*s.* 9*d.*; Lambton, 19*s.* 6*d.*; Original Hartlepool, 26*s.*; Wear, 18*s.*; South Hetton, 20*s.*; East Hartlepool, 19*s.* 9*d.*; Salvin's Hutton, 18*s.* 3*d.*

CHARLES SHARPE & Co.

RAUCEBY HALL MELON.

This splendid new Green-fleshed Melon has been raised by Mr. BROWN, the gardener at Rauceby Hall, and has during the past two seasons been exhibited seventeen times — in every case gaining a First Prize. It is hardy, a fine setter, and a very heavy cropper. The fruit is very beautifully netted, the flesh juicy, sweet, and melting, and of a very rich flavour. Altogether it is a variety of unquestionable superiority, and worthy a place in every garden.

Price 2s. 6d. per packet.

TESTIMONIALS.

Belvoir Castle Gardens.

"Dear Sir,—The Green-fleshed Melon exhibited by Mr. Brown at the Sleaford show this year, and to which the First Prize was awarded, was of exceptional excellence, having a rich flavour, and being sweet, melting, and very juicy.

"November 21, 1877." "W. INGRAM."

Belvoir, Grantham.

"Dear Sir,—I beg to thank you for the packet of Melon seed you were good enough to send me. If like produces like I may look forward to something of special excellence in Melons next season. If I had reason to believe that the Melons generally exhibited at most shows were only half as good as Brown's, I am sure I should approach the task of tasting them with less misgivings of possible cholera than I have often experienced.

"A good Melon is quite the exception at the exhibitions at which which I have officiated of late years.

"December 14, 1877." "W. INGRAM."

Studley, near Ripon.

"Dear Sirs,—According to promise I have grown your Rauceby Hall Melon, and submitted it to competition at the York Gala, where an immense quantity of fruit was shown, and I am glad to inform you it won the First Prize. It appears a hardy good grower, sets well, and will be a valuable Melon to those who have to supply the table constantly.

"June 29, 1878." "JOHN CLARK."

The Gardens, Hutton Hall, Guisborough, Yorkshire.

"Dear Sir,—In answer to yours respecting the Rauceby Hall Melon, I have found it to be a very good sort, of high flavour.

"September 6, 1878." "J. MCINDOE."

The Gardens, Darley Abbey, Derby.

"Dear Sir,—I have carefully grown your Rauceby Hall Melon in three successions, with four other well-known first-class varieties, and I have much pleasure in being able to speak in the highest terms of the Rauceby Hall, particularly for early work. It is a free setter and quickly swells off handsome fruit of fine flavour.

"At table here it has been quite the favourite of the season. I consider it a first-class Melon, and shall hope to grow it largely another year." "THOS. KEETLEY."

Rauceby Hall Gardens.

"Dear Sir,—My seedling Green-fleshed Melon has a very hardy constitution. It is a free setter and immense cropper, beautifully netted, and unquestionably the handsomest and finest flavoured Melon grown averaging from 3 to 4½ lb. in weight. I have exhibited it myself several times, and it has never been beaten. You can safely recommend it to be the very best Melon ever sent out, and the entire stock is in your hands.

"November 12, 1877." "JAMES BROWN."

Syston Park, Grantham.

"Dear Sir,—I have tasted, and also seen growing, the Melon called 'Rauceby Hall Seedling,' and I believe it to be a really first-class Melon, most delicious in flavour, free setter, and a very robust constitution. It is medium in size, thin rind, and very juicy. A most handsome fruit for the table.

"November 16, 1877." "C. BILLESON."

Haverholme Priory, Sleaford.

"Dear Sir,—I have grown your seedling Melon the last two seasons, and find it to be of good constitution, a very free setter, fruit of medium size, beautifully netted, handsome in appearance, and of excellent flavour. It ripens its crop off very much quicker than many other varieties now in cultivation, which will make it valuable for early and late crops.

"November 9, 1877." "GEORGE SANDY."

The Gardens, Belton House, Grantham.

"Gentlemen,—I find the 'Rauceby Hall' Melon hardy in constitution, beautifully netted, a thin rind, and splendid flavour, and looks well upon the table.

"September 6, 1878." "JOHN BOLTON."

Trade Price on application.

SLEAFORD

Johnstone's St. Martin's Rhubarb

EARLIEST and BEST in CULTIVATION, forces well, and has a splendid colour.
Strong roots, 9*s.* per dozen. Trade price on application.
RHUBARB, Prima Donna (new), 2*s.* 6*d.* each.
" Princess Royal (new), 1*s.* 6*d.* each.
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

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W. TAIT AND CO. beg to offer DOGSTAIL • RIB-GRASS, POTATO ONIONS, and GARLIC, of fine quality. Samples and prices on application.
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HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

To the Trade.

WILLIAM BARRON AND SON'S
New WHOLESALE CATALOGUE
May be had on application.
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DWARF-TRAINED PEACHES and NECTARINES, extra sized. The Trade supplied.
Apply to
GEORGE SMITH, The Dell Nurseries, Rock Ferry, Cheshire.

CARNATIONS.—Souvenir de la Malmaison, pink and white varieties, a fine and healthy stock. Price on application.
Descriptive CATALOGUE of ROSES and FRUIT TREES forwarded free on application
IRELAND AND THOMSON, Craigleith Nursery, Edinburgh.

For Forcing, Superb Roots.

ASPARAGUS, 4, 3, 2, and 1-yr., thinly-sown stuff. RHUBARB, Linnæus, Prince Albert, Victoria, &c., finest stools, 4, 3, and 2-yr., from seed.
C. R FREEMAN, Seed Grower, Norwich.

TRANSPLANTED FOREST TREES.

ASH, Common, 2, 3, to 4 feet, stout.
BEECH, Common, 1½ to 2½ feet, stout.
LARCH, Fir, 1 to 1½ foot, very fine and cheap.
HAZEL, Common, 2 to 3, an l 3 to 4 feet, very fine.
POPLAR, Black Italian, Balsam and Lombardy, 2, 3, to 5 feet.

TRANSPLANTED FRUIT TREES.

CHERRIES, Standards, fine leading sorts.
APRICOTS, PEACHES, and NECTARINES, Dwarf Maidens.
FRUIT TREE STOCKS:—Brussels, Mussel, Brompton, Common Plum and Pear.

TRANSPLANTED CONIFERS,
TREES AND SHRUBS.

CEDRUS DEODARA, bushy, fine, 1½, 3, 5, to 7 feet.
CRYPTOMERIA ELEGANS, 2, 3, to 5 feet, fine.
CUPRESSUS LAWSONIANA, 1 to 10 feet, suitable for screens.
PICEA NORDMANNIANA, perfect specimens, 2, 3, 5, to 7 feet.
PINUS CEMBRA, fine, 2, 3, 5, to 7 feet.
RETINOSPORA PLUMOSA, 1, 2, 3, to 5 feet, fine.
THUJA GIGANTEA, 2, 3, 5, to 6 feet, fine.
" LOBBI, 6 to 8 feet, suitable for screens.
THUJOPSIS BOREALIS, 3, 4, to 5 feet, fine.
AUCUBA JAPONICA, bushy, 1½ to 2 feet.
HOLLIES, Green, bushy, 3, 5, to 9 feet.
" Variegated, bushy, 2, 3, 4, to 6 feet.
YUCCAS, of sorts, fine.
CHESTNUT, Horse, 7, 8, 10, to 12 feet.
THORNS, Standards, of sorts, extra fine.
POPLARS, of sorts, 8, 10, 12 feet.
LIMES, very stout, 10, 12, to 15 feet.
PRIVET, Box-leaved, 1, 2, to 3 feet, suitable for hedges or [covert.
MANETTII Rose stocks, fine.
AMPELOPSIS VEITCHII, in pots.
CLEMATIS JACKMANNI, and others, in pots.
DAPHNE CNEORUM, fine.
The whole of the above Stock is in excellent condition for removal, of first-class quality, and grown in large quantities.
For particulars and Prices apply to
GEORGE JACKMAN AND SON,
Woking Nursery, Surrey.

To the Trade.

LIMES, 4 to 6 feet, 20*s.* per 100; 6 to 8 feet, 30*s.* per 100.
ASH, Mountain, 4 to 5 feet, 30*s.* per 1000.
WALNUTS, 6 to 8 feet, 30*s.* per 100.
PINE, Weymouth, 2-yr., 2-yr. cut, 25*s.* per 1000.
General Nursery TRADE LIST on application
W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

East Lothian Intermediate Stock.

COWE'S NEW CRIMSON.—A beautiful novelty selected by Mr. Cowe, a well-known successful cultivator of the East Lothian Stock. It is of an exquisite crimson, distinct from all other varieties yet offered, and coming rather later into flower it will prove a valuable acquisition to these popular Stocks. Packets 2*s.* 6*d.* each.
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SURPLUS STOCK.
ASH, transplanted, 2 to 3, 4 and 5 feet.
ELM, Wych, 2 to 3, 4 and 6 feet.
" narrow-leaved, 2 to 4 feet.
HORNBEAM, 2 to 3 feet.
All as good as can be.
Prices of above, and also general NURSERY CATALOGUE (Retail), on application to
JOHN CARTER, Nurseryman, Keighley, Yorkshire.

East Lothian Stock, New Crimson.

TODD AND CO., SEEDSMEN, Maitland Street, Edinburgh, offer SEED of this splendid variety, saved from the original stock, which for years has produced 90 per cent. of double flowers. It is most brilliant in colour, and posses es the true East Lothian branching habit and perpetual blooming character.
For opinions of eminent horticulturists, who have seen and grown it, see *Gardeners' Chronicle* of December 7.
Retail price, 1*s* and 2*s.* 6*d.* per packet.
Trade price per ounce on application.
TODD & Co. can also supply the Trade with carefully selected strains of the PURPLE, SCARLET and WHITE EAST LOTHIAN STOCKS.

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It is whiter and firmer in texture, later in season, and the most perfect self-protecting Broccoli extant.
If sown the last week in April it comes into use in May and June.

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Conservatories, Greenhouses and Hothouses of every description Erected and Heated in any part of the Kingdom or Abroad.
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CHARLES SHARPE AND CO., Seed Farmers, Sleaford, and at 31, New Corn Exchange, Mark Lane, London, E.C.

To the Trade.—Seed Potatos.

CAREFULLY SELECTED and FREE FROM DISEASE.

CHARLES SHARPE AND CO. will have much pleasure in forwarding their SPECIAL PRICED CATALOGUE of SEED POTATOS, Grown by themselves this season.
CHARLES SHARPE AND CO., having at much trouble and expense procured the choicest stocks of all the finest English and American varieties, can confidently recommend what they offer. Seed Warehouse, Sleaford.

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SPECIAL OFFER for large quantities.
EARLY ASHLEAF, MYATT'S PROLIFIC, RIVERS' ROYAL.
CHARLES SHARPE AND CO. are prepared to make low quotations for the above, when large quantities are taken.

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PEAT SOIL, PEAT SOIL.—BROWN FIBROUS, good quality, for Orchids, Pot Plants, Ferns, &c., £6 6s. per truck. BLACK, good quality for American Plants, Rhododendrons, Azaleas, Heaths, &c., 17s. per ton, or 6-ton truck for £4 10s. Delivered on rail at Blackwater, S.E.R., or Camberley, S.W.R., by the truckload. Cash with order. Sample sack, 5s. 6d., or four sacks, 20s.
HOLDER AND SON, Crown Nurseries, Reading.

PEAT for RHODODENDRONS and ordinary POT PLANTS, in trucks containing 14 yards or loads, put on rail at Ringwood Station, £3 15s. Carriage paid to London or any Station on the L. & S. W. Railway, £5 5s. per truck of fourteen loads. Cash or reference.
J. PRYER, Manager, Peat Stores, Vauxhall Station and Ringwood.

PEAT.—South of England Horticultural Peat Lands.—C. R. HOLLOWAY, Christchurch, Hants.—BROWN, FIBROUS, Light-weighing Peat, of excellent quality, for Orchids, Ferns, &c., well cut in Turfs and carefully loaded into Railway Trucks, at 17s. 6d. per ton, in loads of 4 Tons and upwards. Sample bag, 5s.; five bags, 21s.; 12 bags, 40s. Some also, of good quality, at 13s. 6d. per ton, four tons and upwards.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s per truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 4s.; 5 bags, 20s.; 10 bags, 36s. Bags 4d. each.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE WASTE.—Invaluable for Potting, Plunging, and Forcing Purposes Useful at all seasons. 3d. per bushel, 100 bushels 33 bags) 20s., truckload (loose) 30s., put free on rail; 5s. for one-horse van-load, if fetched from Works. Bags charged 4d. each, returnable at same rate.—JAMES CROWLEY AND CO., Cocoa-nut Fibre Works, Suffolk Place, Snow's Fields, Bermondsey, S.E.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and most of the leading Nurserymen and Gardeners,
3d. per bushel; 100 for 20s.; truck (loose, 250 bush.), 30s.
4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s., or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; 12 for 40s., or 34s. per ton; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. half ton, 26s. per ton; in 1 cwt. bags, 4s. each.
YELLOW FIBROUS LOAM, PEAT MOULD, and LEAF MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth and Paper, Russia Mats, &c.
Write for free PRICE LIST. Goods free to rail.
H. G. SMYTH, 10, Castle Street, Endell Street, Long Acre, W.C.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society.—Four-bushel bag (bag included), 1s.; 30 bags (bags included), 20s.; truck free to rail, 25s.
FINLAYSON AND HECTOR, Cocoa-Nut Fibre Works, 24 and 25, Redman's Row, Mile End Road, London, E.

SCOTT'S WASP DESTROYER.—The only effectual remedy for destroying these pests: 1s. 6d., 2s. 6d. and 5s. per bottle. May be obtained through all Seedsmen, or direct from
JOHN SCOTT, The Royal Seed Stores, Yeovil.
The Orchardist, by J. Scott, price 3s. 6d., the best work in the English language on Fruit Trees and their Cultivation

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1850, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 2s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

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(Free of Duty.)

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A NEW and UNRIVALLED INSECTICIDE for PLANT CULTIVATORS.

No other Insecticide will bear comparison with this in killing properties, with perfect safety to foliage. No known blight can resist it, and it is the Cheapest in the market.

Price, in jars containing 8 oz., 1s. 6d., and 20 oz., 3s.; drums, 28 lb., 25s.

2 oz. sufficient for 1 gallon of water for ordinary use.

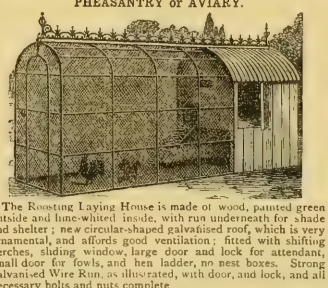
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HELLIWELL'S PATENTED NEW SYSTEM of AIR and WATER-TIGHT IMPERISHABLE GLAZING. All Woodwork is covered, and no outside Painting is required. Old Roofs Reglazed. Any one can repair or take in pieces.
"It is suitable for Railway Stations, Mills, Weaving Sheds, &c., but is specially applicable to Conservatories, Plant Houses, and Orchard Houses, and we should be very much inclined to try the system. It is certainly worth looking to."—*The Builder.*
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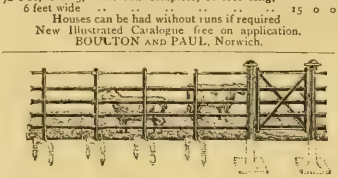


The Roosting Laying House is made of wood, painted green outside and lime-whited inside, with run underneath for shade and shelter; new circular-shaped galvanised roof, which is very ornamental, and affords good ventilation; fitted with shifting perches, sliding window, large door and lock for attendant, small door for fowls, and hen ladder, no nest boxes. Strong galvanised Wire Run, as illustrated, with door, and lock, and all necessary bolts and nuts complete

Prices. Carriage paid to any railway station in England:

1st size, No 1, with run complete, 12 feet long, 4 feet wide	£8	0 0
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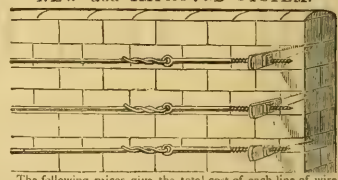
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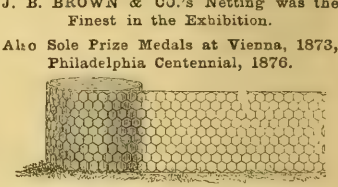
The following prices give the total cost of each line of wire, including holdfasts, straining bolt, intermediate guiding eyes, to feet apart, and best quality galvanised wire:—

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	s. d.	s. d.	s. d.	s. d.
No. 14 Guage Wire	1 0 1 7	2 1	2 7	3 1
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Size of Mesh	Mostly used for	Gauge	Or Light.	Gauge	Or Medium.	Gauge	Or Strong.
2 in.	Dogs or Poultry	19	3¾d.	18	4½d.	17	5¾d.
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REDUCED PRICES.
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Mesh. in.	PRICE PER YARD, TWO FEET WIDE. Light. s. d.	Medium. s. d.	Strong. s. d.	Extra Strong s. d.
2	0 2½	0 3½	0 4¾	0 5¼
1⅝	0 3¼	0 4	0 4¾	0 6
1½	0 4	0 4¾	0 6	0 7½
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Other widths at equally low prices.
200 yards sent carriage free to most railway stations.
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Apply for Testimonials to C. PORTWAY, Patentee, Halstead, Essex; or to HYDE AND WIGFULL (Limited), Sheffield, sole Licencees and Makers for the North of England.

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STAR ANTHRACITE SMOKELESS STEAM COAL

is now being extensively used by many of the principal Growers and is found to be preferable to any other kind of fuel in respect to cheapness and durability, and particularly on account of its being perfectly free from sulphur, and that it does not clinker the fire-bars.

WOOD AND CO. deliver in truckloads to any Railway Station, prices for which can be had on application, or can be delivered by Wood & Co.'s Vans (in the Metropolis).

WOOD AND CO. append a testimonial given to them by Messrs. Beckwith & Sons, a firm of great experience, and who have kindly allowed them to make whatever use of it they may think fit.

Tottenham Nursery, London, N., Dec. 28, 1877.

To Messrs. Wood & Co.

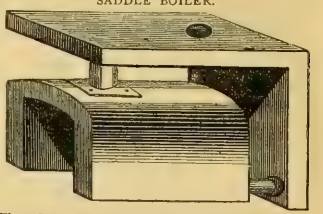
Dear Sirs,—With reference to your enquiry respecting the "Star" Anthracite Coal with which you supplied us—as to how it suited, its economy or otherwise—we have much pleasure in informing you that in every respect it is the best Anthracite we have ever used. We find there is no smoke from it, which is very essential, and there is no trace of sulphur. It requires very little stoking, and leaves very little ash, and certainly does not clinker. Our consumption of Coal is about 500 tons a year, and we have no hesitation in saying that, by using your "Star" Coal in the place of ordinary fuel, we shall effect a saving of at least £100 this year. We attribute this to the powerful and lasting properties of your coal.—Yours faithfully,

(Signed) G. BECKWITH & SONS.

WOOD AND CO. supply all kinds of Coal for House and Manufacturing purposes, prices for which will be sent on application.

WOOD AND CO., Coal and Coke Factors, Merchants, Contractors to Her Majesty's Government, 58, Coal Exchange, E.C.; and 4, Coal Department, Great Northern Railway King's Cross, N., and Midland Sidings, St. Pancras, N.W.

JONES'S PATENT "DOUBLE L" SADDLE BOILER.



These Boilers possess all the advantages of the old Saddle Boiler, with the following improvements—viz., the water-space at back and over top of saddle increases the heating surface to such an extent that a "PATENT DOUBLE L SADDLE BOILER" will do about twice the amount of work with the same quantity of fuel; the cost of setting is also considerably reduced, and likewise the space occupied; at the same time these Boilers are simple in construction, and being made of wrought-iron are not liable to crack. They are made of the following sizes:—

Sizes.			To heat of 4-in. Pipe.	Price.
High.	Wide.	Long.	Feet.	£ *s.* *d.*
20 in.	18 in.	18 in.	3 0	7 0 0
20 ,,	18 ,,	24 ,,	400	8 0 0
20 ,,	18 ,,	30 ,,	500	9 0 0
24 ,,	24 ,,	24 ,,	700	12 0 0
24 ,,	24 ,,	30 ,,	850	14 0 0
24 ,,	24 ,,	36 ,,	1000	16 0 0
24 ,,	24 ,,	48 ,,	1400	20 0 0
28 ,,	28 ,,	60 ,,	1200	25 0 0

Larger sizes if required.

From MR CHARLES YOUNG, *Nurseries, Balham Hill, S.W., May 29, 1873*

"Having given your Patent 'Double L' Boilers a fair trial at my Nurseries, I beg to say that they are most satisfactory. I consider them the best in use, and without doubt the most economical of all boilers; they will burn the refuse of other tubular boilers I have in work."

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And all CASTINGS for HORTICULTURAL PURPOSES.

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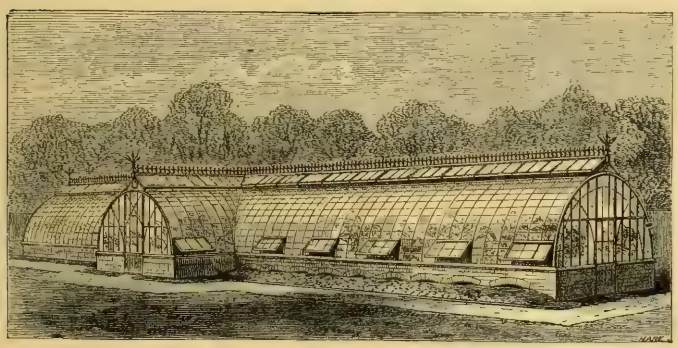
Hot-water Apparatus erected complete, or the Materials supplied at Wholesale Prices.

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RANGE of PATENT BENT WOOD CURVED VINERIES, PLANT HOUSES, &c., recently erected at Croydon.

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ROAD LOCOMOTIVES, TRAMWAY LOCOMOTIVES

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GREEN'S

PATENT

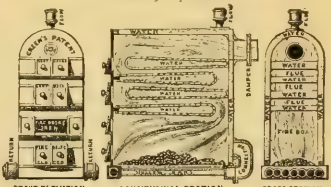
WROUGHT-IRON HOT-WATER BOILERS,

With Shelves or Tubes, and Hollow Grate Bars,

SADDLE BOILERS with Waterway Backs, and WELDED BOILERS.

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12	,,	..	..	0	7	0	23	,,	..	..	0	12	6
13	,,	..	..	0	7	6	24	,,	..	..	0	13	0
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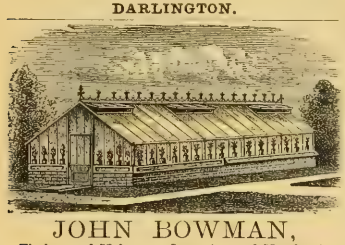
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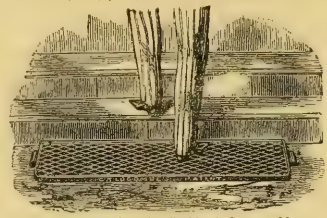
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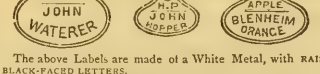
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	4ths	3ds.	2ds.	Best	4ths	3ds	2ds.	Best
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
20 × 12 inches ..	15 6	17 6	18 6	20 0	12 0	14 0	15 7	17 6
20 × 13 ,, ..								
20 × 14 ,, ..								
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Large Sheets for Cutting.

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BELGIAN GLASS for GREENHOUSES, &c.,

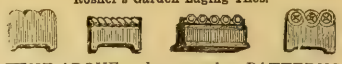
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IMPORTANT NOTICE TO ADVERTISERS

In consequence of the Christmas holidays, the GARDENERS' CHRONICLE for next Saturday, December 28, will go to Press on Tuesday night, December 24. All Advertisements for that Number must, therefore, reach the Office by TUESDAY morning, the 24th inst.

The GARDENERS' CHRONICLE for Saturday, Jan. 4, 1879, will contain a BEAUTIFULLY COLOURED ALMANAC.

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ALBERT CHANCELLOR, Hon. Sec.
1, King Street, Richmond, Surrey.—Dec. 18, 1878.

NOTICE to the CREDITORS of the deceased Mr. JOHN ROY, Seed Merchant, Aberdeen.

Those having CLAIMS AGAINST the deceased Mr. Roy are requested to LODGE the SAME with us IMMEDIATELY.

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J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

HAMPTON COURT BLACK HAMBURGH VINE.—Strong fruiting well ripened Canes of this well known Grape, 5s., 7s. 6d., and 10s. 6d. each; Planting Canes, 3s. 6d. each. Also a good stock of most of the best kinds.

T. JACKSON and SON, Nurseries, Kingston, Surrey.

MAIDEN APRICOTS.—2000 Moorpark and other finest sorts, to be sold cheap, to clear land. For price apply to.

EWING and CO., Norwich.

TWELVE CAMELLIAS, full of buds, 21s., beautiful plants, 1 to 1½ foot high, all finest sorts, in 5-inch pots. Also AZALEAS, finest sorts, full of buds, same price. Extra sizes of both, remarkably fine, 30s., 42s., and 60s. per dozen. Packages gratis for cash with order.

JOHN H. LEY, Royal Nursery, Croydon.

East Lothian Intermediate Stock.

T. METHVEN and SONS are glad to say that the seed of the above has been saved this season in fine condition. White, scarlet, purple and white wall-leaved, in packets, 1s., 2s. 6d., and 5s. each

15, Princes Street, Edinburgh.

Seeds for the Trade.

HOOPER'S TRADE CATALOGUE will contain subjects of interest to the Trade, who are solicited to withhold their orders until they have obtained a Copy.

HOOPER and CO., Covent Garden, London, W.C.

FOR SALE, 2000 stools Victoria RHUBARB, also 2000 Fastolf RASPBERRY Bushes, Apply to JOHN LIVINGSTON, Market Gardener, 51, Holmscroft Street, Greenock, N.B.

To the Trade.

SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.

H. and F. SHARPE, Seed Growers, Wisbech.

SUTTON'S MAGNUM BONUM POTATO, warranted true, sound, and a good sample. SNOWFLAKE, just imported from America. A few tons each of the above to be sold cheap. A sample sack (168 lb.) of each sort on receipt of 27s. 6d., new sack included.

Trade List of other Seed Potatos on application.

D. BRINKWORTH and SONS, Seed Potato Growers, Reading.

Important Notice.

CUT FLOWERS WANTED.—A quantity, in White and Scarlet, of Choice and Common Varieties, to be delivered next MONDAY or TUESDAY morning, early. Liberal payment on delivery, or P.O.O. by return, if sent by Rail.

POUNCE and SONS, 18, Westbourne Grove, W.

WANTED, SCOTCH FIR, 15 to 20 inches, and 1½ to 2 feet. State price per 1000, and quantity to offer.

FISHER, HOLMES, and CO., Handsworth Nurseries, Sheffield.

WANTED, 8 Dwarf-Trained PEACH TREES, 4- or 5-yr. trained, in good condition, and true to name, as under:—2 Barrington, 2 Noblesse, 2 Newington, 2 Royal George. State price, &c., to

BENJAMIN CROSLAND, Richmond Nurseries, near Sheffield.

Christmas Trees.

J. GEORGE HILL (late John Scott) can supply the above, 1 foot, at 6s. per 100, 2 feet 5s. per 100, well feathered.

The Royal Nurseries, Merriott, Somerset

FOREST TREES, Seedling and Transplanted.—The very extensive stock of the above is this season in splendid condition.

CATALOGUES on application.

The Lawson Seed and Nursery Company (Limited) Edinburgh.

English Yews.

ENGLISH YEWS, 4 to 5 feet, 12s. per dozen, 85s. per 100.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8s. per 100; 4 to 4½ feet, 18s. per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.

JOHN PEKKINS and SON, 52, Market Square, Northampton.

SPRUCE FIRS for Christmas Trees, well formed, 2 to 3 feet high, 30s. per 100.

RICHARD SMITH and CO., Nurserymen, Worcester.

Evergreen Oaks.

EVERGREEN OAKS, all recently transplanted, from 3 to 10 feet, at exceptionally low prices.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application

CRANSTON and CO., King's Acre Nurseries, Hereford.

GOLD and SILVER HOLLIES.—No better or cheaper in the land, than at

PAUL and SON'S, The Old Nurseries, Cheshunt.

ROMAN HYACINTHS.—Fine Bulbs, 15s. per 100. Discount to Trade on application.

PAUL and SON, The Old Nurseries, Cheshunt.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.

BARR and SUGDEN, 12, King Street, Covent Garden, W.C.

Fit for Immediate Working.

ROSA MANETTI and R. MULTIFLORA DE LA GRIFFERAIE, 25s per 1000, £10 per 10,000.

A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

To the Trade.

HENRY MAY offers the finest Standard ROSES, at 70s. per 100.

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

Standard Tea Roses.

PAUL and SON have a splendid lot of fine STANDARDS of above, 30s. per dozen. The best way of growing these beautiful Roses.

The Old Nurseries, Cheshunt.

Ornamental Trees and Shrubs, Fruit Trees, Roses, &c.

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.

CATALOGUES on application.

CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

TODEAS.—Healthy young plants of T. superba and T. hymenophylloides (pellucida), free and safe by post, 2s. 6d. each for prepayment. Trade price (low) per 100, or lesser quantities, on application.

ROBERT SIM, Sidcup Hill Nursery, Foot's Cray, Kent.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.

Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to THE MANAGER, Calcot Gardens, Reading.

CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.

Early orders are solicited for the above choice plants. Apply to THE MANAGER, Calcot Gardens, Reading.

STANDARD APPLES, PEARS and PLUMS.—The finest Standard Orchard Trees in England, at

PAUL and SON'S, The Old Nurseries, Cheshunt.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.

THOMAS RIVERS and SON, Sawbridgeworth, Herts.

SEAKALE, ASPARAGUS and RHUBARB Roots, for forcing, exceptionally fine.

For special quotations apply to

H. THORNTON, 1, Maxwell Road, Fulham, S.W.

SALES BY AUCTION.

Great Sale of Lilies.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY and TUESDAY, December 23 and 24, at half-past 12 o'Clock precisely each day, several importations of BULBS from Japan, in large and small lots to suit all buyers, comprising 12,000 Lilium auratum, many of them of extraordinary size; also from Japan 1000 Bulbs of L. longiflorum, 1000 L. Thunbergianum staminosum, and 500 Bulbs of a new Lily; also 100 plants of a new PRIMULA from Kashmir, PANCRATIUMS from Mexico, and a quantity of extraordinary fine Bulbs of various Lilies, importation of TREE GRASSES in fine condition, 500 Clumps of LILY of the VALLEY, 1000 SPIRÆA JAPONICA, 3000 strong roots of the splendid Crimson TIGRIDIA from New Jersey, Tuberous BEGONIAS, beautiful New FREESIA, fine Collection of English grown LILIUMS, DISA GRANDIFLORA in fine imported clumps, hardy North American ORCHIDS in fifteen of the most beautiful varieties, suitable for either outdoor culture or for cool-house treatment; 500 fine imported Bulbs of Lilium tigrinum Flore-pleno; a quantity of Hyacinths, Tulips, Crocuses, Narcissus, Iris, Anemones, Ranunculi, Gladiolus, and other Roots from Holland.

On view morning of Sale, and Catalogues had.

By Order of the Mortgagees.—Tooting, Surrey, S.W.,

¾ of a mile from Tooting Junction, and 1 mile from Balham Station.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Mortgagees to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., early in JANUARY NEXT, the very attractive and almost unique FREEHOLD ESTATE, of 5a. or. 25p., or thereabouts, distinguished as "The Nurseries," and known also as "Rollisson's Nurseries," Tooting, Surrey, established for upwards of half a century, enjoying a world-wide reputation, and considered to be one of the leading Nurseries in the kingdom. Comprises an excellent detached Residence, containing seven Rooms and Offices, spacious SEED WAREHOUSE, with capital Office and Store-room over — very large and handsomely designed Conservatory adjoining; the extensive ranges of glass, containing altogether 29,000 feet superof glass and woodwork, and consisting of 26 GREENHOUSES, and several brick-built PITS, the whole in good repair, and heated upon the most approved principles by about 6500 feet of hot-water piping; 10 BOILERS, three of which have been recently fixed, suitable Tanks, Propagating Cases, and all requisite appliances for growing to the greatest perfection every class of Plants; 3 CAGES, PACKING SHED fitted with Crane, STABLING for 4 Horses, COACH-HOUSE, range of WORKSHOPS and other Outbuildings, the whole being brick-built and most complete in all their arrangements

Cards to view, together with particulars of Sale, may be obtained of Messrs. GATLIFF AND HOWSE, Solicitors, 8, Finsbury Circus, E.C.; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

Tooting, S.W.

PRELIMINARY NOTICE.

In liquidation.—*Re* Wm. Rollisson & Sons.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Trustee to prepare for unreserved SALE by AUCTION the whole of the Stock, comprising one of the most extensive and unique collections of ORCHIDS, STOVE and GREENHOUSE PLANTS ever submitted to public competition. They purpose holding the first Sale on JANUARY 13 next and four following days, further particulars of which will be given in future advertisements.

Auction and Estate Offices, 98, Gracechurch Street, E.C., and Leytonstone, E.

Nursery and Market Garden.

TO BE DISPOSED OF, a small NURSERY and MARKET GARDEN, with good connection, in a thriving neighbourhood. No other Nursery within 30 miles. For particulars apply to

H. W. HUMPHREYS, Seedsman, Bangor.

TO BE LET OR SOLD (through death) a SMALL NURSERY, little over 4 acres, with good Business of over thirty years' standing, with Dwelling House, Outhouses, Vinery, Greenhouses, Propagating Houses, Pits, &c. If required, 6 Acres of rich Meadow Land adjoining. At Shipston-on-Stour. Apply

JOSEPH CURTIS, Charlbury, Oxon.

To Nurserymen, Gardeners and Others.

TO LET, NURSERY PREMISES at Edmonton, about 1¾ acre of Ground, with Glass-houses and Pits, and convenient Dwelling-house. For particulars apply to Mr. MAPLE, 335, Essex Road, N.

AMERICAN GROWN TUBEROSES.—The undersigned offers Double Tuberoses, first-class Bulbs, packed and free to Liverpool at £5 per 1000, in quantities of not less than 1000.

JOHN SAUL, Washington, D.C.

FOR SALE, a quantity of home-grown VANILLA PODS. An annual supply could be obtained.

S. A. WOODS, Osberton Gardens, Worksop.

ORCHIDS (winter flowering).—For Sale, cheap, a few plants of Cœlogyne cristata and a quantity of Pleione Wallichiana and Calanthe vestita rubro occulata. Price on application to

S. WOOLLEY, Cheshunt, Herts.

ASPARAGUS.—A quantity of Extra Fine, for forcing. Also SEAKALE and RHUBARB for forcing and planting. Prices on application to

J. COOPER, Gardener and Florist, Belfour Cottage, Fulham Fields.

CATALOGUES.—His Excellency Pierre Wolkenstein will feel greatly obliged if Nurserymen and Seedsmen will kindly send him their Catalogues. They should be forwarded (by post) to

S. E. PIERRE WOLKENSTEIN, Secrétaire de la Société Imperiale d'Horticulture de Russie. St. Petersburg.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded free by post, on receipt of three penny stamps.

CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.

THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

LARCH, 30,000, well transplanted, for Sale' 2½ to 3 feet. Address

GARDENER, Post-Office, Exeter.

MR. GEORGE BUNYARD, HORTICULTURAL VALUER, NURSERYMAN, SEEDSMAN, and FLORIST (of the firm of Thomas Bunyard & Sons), Maidstone, Kent. Valuations made for Probate, Partnership, Incoming or Outgoing Tenants, or other purposes. Terms on application.

To the Trade.

LONGPOD and WINDSOR BEANS, bright samples, very cheap. Samples and price on application.

C. R. FREEMAN, Seed Grower, Norwich.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.

Barbourne Nurseries, Worcester.

SPANISH CHESTNUT, ASH, BIRCH and ALDER, stout, well rooted, transplanted. A large quantity to be sold

Mr. GEO. CHORLEY, Coaster's Nursery, Midhurst.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.

The Ottershaw Nursery, Chertsey.

EWING AND CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.

The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

GIANT LILY of the VALLEY.—Extra strong blooming roots, 2s. per dozen, 12s. 6d. per 100, package free.

E. COOLING, Mile Ash Nurseries, Derby.

To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.

Seed Growing Establishment, Wisbech.

To the Trade.—American Tuberoses.

HURST AND SON have now received their consignments of the above—both the ordinary Double variety and the Improved Double Pearl, and will be happy to send lowest price on application; also GLADIOLUS BRENCHLEYENSIS. The samples are good, and in fine condition.

6, Leadenhall Street, London, E.C.

Geum coccineum plenum.

THOMAS S. WARE begs to offer this first-class Hardy Border Plant. For full description and Plate, see this week's issue of the *Garden*.

For price see my A. B. C. CATALOGUE, No. 45.

Special prices per 100 and 1000, on application.

Hale Farm Nurseries, Tottenham, London.

Planting Season.

E. BURGESS begs to offer the following strong Standard APPLES, PEARS, ROSES, Standard and Dwarf Trained ARBUTOTS, Turkey and English OAK, English and Scotch ELMS, LIMES up to 12 feet, BEECH up to 7 feet, SWEET BAYS, APPLE STOCKS, and a general NURSERY STOCK.

Prices on application.

The Nurseries, London Road, Cheltenham.

East Lothian Stock, New Crimson.

TODD AND CO., SEEDSMEN, Maitland Street, Edinburgh, offer SEED of this splendid variety, saved from the original stock, which for years has produced 90 per cent. of double flowers. It is most brilliant in colour, and possesses the true East Lothian branching habit and perpetual blooming character.

For opinions of eminent horticulturists, who have seen and grown it, see *Gardeners' Chronicle* of December 7.

Retail price, 1s. and 2s. 6d. per packet.

Trade price per ounce on application.

TODD & Co. can also supply the Trade with carefully selected strains of the PURPLE, SCARLET and WHITE EAST LOTHIAN STOCKS.

Johnstone's St. Martin's Rhubarb

EARLIEST and BEST in CULTIVATION, forces well, and has a splendid colour.

Strong roots, 9s. per dozen. Trade price on application.

RHUBARB, Prima Donna (new), 2s. 6d. each.

" Princess Royal (new), 1s. 6d. each.

W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

To the Trade.

LIMES, 4 to 6 feet, 20s. per 100; 6 to 8 feet, 30s. per 100.

ASH, Mountain, 4 to 5 feet, 30s. per 1000.

WALNUTS, 6 to 8 feet, 30s. per 100.

PINE, Weymouth, 2-yr., 2-yr. out, 25s. per 1000.

General Nursery TRADE LIST on application.

W. P. LAIRD AND SINCLAIR, Nurserymen, Dundee, N.B.

WM. L. SKINNER, NURSERYMAN and SEEDSMAN, Silcoates, Wakefield, offers the following, all in fine condition. Prices on application:—

CUCUMBER, Rollisson's Telegraph, true, grown from Rollisson's seed: none else grown.

10,000 SEAKALE, strong.
10,000 2-yr. seedling.
1,000 CHESTNUT, scarlet, 6 to 8 feet, fine.
10,000 LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.
10,000 AUCUBA JAPONICA, 2 to 2 feet.
5,000 RHODODENDRONS, 1 to 3 feet.
3,000 HOLLIES, green, fine roots, 2 to 3 feet.
1,500 " Golden Queen, fine roots, 2 to 2 feet.
10,000 PRIVET, common, 3 to 4 feet.
LAURUS ROTUNDIFOLIA, 4 feet.
" LATIFOLIA, 3 feet.
" COLCHICA, 2 feet.
" COMMON, 2 to 3 feet.
WILLOWS, Weeping, fine heads.
GOOSEBERRIES, strong.
POTATOS, Myatt's Prolific, per ton.
QUICKWOOD, 18 inches to 2 feet.

CARNATIONS.—Souvenir de la Malmaison, pink and white varieties, a fine and healthy stock. Price on application.

Descriptive CATALOGUE of ROSES and FRUIT TREES forwarded free on application.

IRELAND AND THOMSON, Craigleith Nursery, Edinburgh.

DWARF-TRAINED PEACHES and NECTARINES, extra sized. The Trade supplied. Apply to

GEORGE SMITH, The Dell Nurseries, Rock Ferry, Cheshire.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "NEWTON" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.

Priced CATALOGUE and all information post-free.

To the Trade.

W. TAIT AND CO. beg to offer DOGSTAIL COCK'S-FOOT-GRASS, POTATO ONIONS, and GARLIC, of fine quality. Samples and prices on application.

W. TAIT AND CO., Nurserymen and Seedsmen, Dublin.

FIRST-CLASS ROSES.

The finest Standard Roses, 12s. per dozen.

The finest Dwarf Roses, 6s. per dozen.

The finest specimen Roses, for forcing or exhibition, splendid stuff, in 8-inch pots, 30s. per dozen.

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

TO THE TRADE.—VEGETABLE, FLOWER and AGRICULTURAL SEEDS, of sterling quality only. Our own, and other carefully selected Novelties of the season.—SANDER AND CO., Seed Growers, St. Albans.

To the Trade.

CHOICE GARDEN and FARM SEEDS, of reliable quality, for Market Gardeners and Seedsmen. Our Priced LIST is now ready, and will be sent post-free.

Apply to HARRISON AND SONS, Seed Growers, Leicester.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35s. per 100, packing included for cash.

JAMES HOLDER AND SON, Crown Nurseries, Reading.

To the Trade.

NEW POTATO, "PRIDE of ONTARIO," and F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application.

Seed Growing Establishment, Wisbech.

Trees and Shrubs for Public Parks, Cemeteries, &c.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above in great variety and of good sizes, to give immediate effect. Properly grown and well transplanted. Prices very moderate.

CATALOGUES free on application.

TWELVE NEW GLOXINIAS for 21s., including the grand new novelties shown at Paris Exhibition, small growing Bulbs in 2-inch pots, or dry, free by post; also large-flowering bulbs of fine AMARYLLIS, imported from Peru, 42s. per dozen.

JOHN H. LEY, Royal Nursery, Croydon.

GLADIOLI, DAHLIA, CANNA, ACHIMENES, and other MISCELLANEOUS BULBS.

Our Special CATALOGUE of the above for 1878-79 is Now Ready, and will be handed to all Gardeners and Amateurs, post-free, on application to

Messrs. MERNENS AND CO., 5, Billiter Square, London, E.C.; or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

East Lothian Intermediate Stock.

COWE'S NEW CRIMSON.—A beautiful novelty, selected by Mr. Cowe, a well-known successful cultivator of the East Lothian Stock. It is of an exquisite crimson, distinct from all other varieties yet offered, and coming rather later into flower it will prove a valuable acquisition to these popular Stocks. Packets 2s. 6d. each.

THOMAS METHVEN AND SONS, 15, Princes Street, Edinburgh.

GRAMPIAN POTATO.—The finest Early Round Potato in cultivation, remarkable chiefly for its productiveness, good quality and symmetry; was shown in most of the collections exhibited at the International and other Potato Shows during the last three years. Prices on application.

WM. SMITH AND SON, Nurserymen and Seedsmen, Aberdeen, N.B.

ASH, 100,000 strong, twice transplanted, 2 to 3 feet, 20s per 1000, 3 to 4 feet, 30s. per 1000, 4 to 5 feet, 40s. per 1000. All other FOREST TREES equally cheap.

R. TUCKER, The Nurseries, Faringdon, Berks.

English Oaks, 10 to 12 feet.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset, has a quantity of above to offer, well rooted, at 20s. per 100.

"What you plant in the old year will grow of itself, but what is planted in the new year you will have to make grow."

10,000 Spruce Firs—Christmas Trees.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above, all sizes up to 5 feet high, from 2 to 3 feet, at 10s. per 100, good in colour and well furnished. For particulars apply soon. No charge for packing.

TO THE TRADE.

MANETTI STOCKS, 21s. per 1000.

MUSSEL STOCKS, 45s. per 1000.

CRAB STOCKS, 35s. per 1000.

Samples of the above may be had on application to

JOHN STANDISH AND CO., Royal Nurseries, Ascot.

Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices :—

ASH, 2 to 2½ feet, fine, 20s. per 1000
,, 3 to 5 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
CHESTNUT, Horse, 6 to 8 feet, fine heads, 60s. per 100
,, Scarlet, 6 to 8 feet, fine heads, 100s. per 100
ELMS, Canadian, 8 to 10 feet, stems, with good heads, 100s. per 100
,, English (upright), 6 feet, stems, with good heads, 100s. per 100
GORSE, single, 10s. per 1000, 1½ to 2 feet, strong.
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 50s. per 100 ; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100 ; 8 to 10 feet, fine, 12s. per 100
,, Lombardy, extra fine trees, 8 to 10 feet, 30s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
,, ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, extra fine 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
APPLES, fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100
CATALOGUES of General Nursery Stock on application.

Established Upwards of a Century.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, AND FLORISTS, 1, Waterloo Place, Edinburgh, beg to call the attention of those about to plant to their extensive Stock of FOREST TREES, SHRUBS for Game Coverts, FRUIT TREES, &c., which have been grown in exposed situations.

D. & C. are now sending out their Bedding VIOLAS and PANSIES (of which they hold the largest stock in the country), Early and Late PHLOXES, &c.

Descriptive CATALOGUES free on application.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard :—

PEARS on the Quince and Pear stocks.
APPLES on the Paradise and Crab stocks.
CHERRIES on the Mahaleb and Cherry stocks.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock : do., trained trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, A very fine stock of the best kinds ; do., in pots for forcing, stout and well grown plants.

Descriptive Rose Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3d.
Miniature Fruit Garden, 3s. 6d., free by post.

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2s. 6d. ; C. Libani, 3 feet, 2s. 6d. ; Thujopsis borealis, 5 feet, 2s. 6d. ; Thuja gigantea, 4 feet, 2s. 6d. ; Cupressus Lawsoniana viridis, 4 feet, 2s. 6d. ; Swedish Juniper, 4 feet, 2s. 6d., 6 feet, 2s. 6d. ; Golden Retinospora, 2 feet, 2s. 6d. ; Ericoides, 2 feet, 1s. ; Gold and Silver Hollies, 2 feet, 2s. ; Picea nobilis, 3 feet, 3s. ; Pinsapo, 3 feet, 2s. 6d. ; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s., 5 feet, 5s. ; Limes, 15 feet, 2s. 6d. ; Birch, 15 feet, 1s. ; Chestnuts in variety, 1s. each ; Scarlet Oak, 15 feet, 1s. ; Araucana, 4 feet, 2os. ; 5 feet, 30s. ; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d. ; Green Hollies 1 to 1½ foot, 25s. per 100.

E. WALKER, Farnborough, Hants.

To the Trade.

SPECIAL PRICES ON APPLICATION.

GEORGE COOPER, SEED MERCHANT, Hertford, begs to offer the following, of the choicest stocks :—

BEET, Red, Cooper's Excelsior	ONION, White Spanish
BROCCOLI, Hill's June	,, White Globe
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Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.

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To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY, ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.

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TREE, PLANT, BULB, AND SEED MERCHANTS.

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GRAPE VINES and ORCHARD HOUSE TREES in POTS.—Grape Vines, extra strong, and warranted free from phylloxera, oidium, and all disease ; Planting Canes, 3s. 6d. to 5s. each ; extra strong Fruiting Canes, 7s. 6d. to 10s. 6d. each. Orchard-house Trees, fruiting in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, and Figs. Descriptive Price List for a penny stamp.

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ADAM	ALBA ROSEA
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SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

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25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

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NURSERIES, KING'S ACRE, HEREFORD

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MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.

It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS,
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CHEAP EVERGREENS for COVERS,
PLANTS for WINTER BEDDING,
CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c.,
all in splendid condition for removal.

☞ The Nurseries are about one hour by rail from Waterloo Station.

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FRUIT TREES.—Pyramidal Pears, fruiting trees, 6 to 8 feet, my selection, 18s. per dozen ; Currants, Black Naples, fruiting bushes, 16s. per 100 ; Standard Morello Cherries, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen ; Standard Plums, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen ; Mediars and Walnuts, bushy heads, 18s. per dozen.

Fruit Tree CATALOGUE gratis.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

SPECIAL OFFERS TO THE TRADE.

MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.

Prices and List on application to
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Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Pæonies, Phloxes, and Sweet Violets, may now be had post-free on application.

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QUEEN OF LILIES, LILIUM AURATUM. —Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.

Prices, size No. 1, 6d. ; No. 2, 1s. ; No. 3, 1s. 6d. ; No. 4, 2s. each.

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All orders to be accompanied by a remittance. Lily and Orchid LIST sent on application to

WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

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MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following :— [per dozen.

AZALEA INDICA, fine plants, and well budded, 24s. to 42s.
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PALMS and DRACÆNAS, 24s. to 42s. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30s. per dozen ; besides a large general stock of STOVE and GREENHOUSE PLANTS,

CATALOGUES of which may be had on application.

Royal Nurseries, Ascot, Berks.

LEE'S NEW VIOLET ODORATISSIMA. —Habit dwarf and compact, quite distinct from any other variety ; colour, purplish azure, changing to pale azure when fully developed : form, fine ; scent, exquisite. As the opinion of the Press, &c., were given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates :—15s. per dozen, 8s. 6d. per half-dozen, 5s. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

H. McMILLAN has some fine well-grown ORNAMENTAL TREES and SHRUBS to offer, which have all been transplanted within two years. No reasonable offer will be refused, as the ground must be cleared.

Horse CHESTNUT, 9 to 11 inches in circumference at surface of ground, and 14 feet to 16 feet high.
LIMES, 6 inches in circumference at surface of ground, and 14 feet high ; 5 inches, do., and 13 feet high.
Lombardy POPLARS, 20 feet high.
Also some fine BIRCH, MAPLES, Spanish CHESTNUT New Silver POPLAR, &c.
PYRACANTHA, in 48-pots, 2 feet high, very good.
THUJA AUREA, 10 to 12 feet in circumference.
AUCUBA, 9 to 10 feet in circumference.
Evergreen PRIVET, very bushy.
Irish IVY, in pots and open ground, very fine.
YUCCA RECURVA, fine specimens.

St. James' Road Nursery, Kingston-on-Thames.

The Largest Black Grape in Cultivation.

GROS GUILLAUME (ROBERTS' VARIETY).

WAITT AND CO. can now supply planting Canes of this wonderful Grape, which is quite distinct from the old Gros Guillaume and Barbarossa. For particulars see *Gardeners' Chronicle*, pp. 632 and 692. The Canes now offered are from eyes taken from Mr. Roberts' parent Vine at Charleville.

Planting Canes, 7s. 6d. each, stronger, 10s. 6d. each.
W. TAIT AND CO., Nurserymen and Seedsmen, Dublin.

WAITE, BURNELL, HUGGINS & CO.'S
GENERAL WHOLESALE CATALOGUE

Of Garden, Agricultural, and Flower Seeds is now ready, and will be forwarded post-free on application. A copy has this day been posted to all our friends, should it not be received we will forward another copy on receiving an intimation to that effect.—Dec. 20.

79, SOUTHWARK STREET, LONDON, S.E.

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New DESCRIPTIVE CATALOGUE of Coniferæ, Hardy Ornamental Trees and General Nursery Stock, may now be had on application. A personal inspection of their unrivalled stock is solicited.

The Nurseries are three minutes' walk from the Borrowash Station, on the Midland (Derby and Nottingham) Railway.

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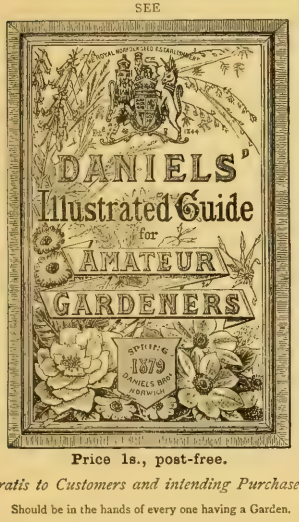
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Price 1s., post-free.

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Should be in the hands of every one having a Garden.

DANIELS BROS.,
Royal Norfolk Seed Establishment,
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CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.
Descriptive and Priced Catalogues for 1878 *now ready.*

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CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

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STRAIN OF
LARGE-FLOWERING PETUNIAS,
The finest in Cultivation.

"I obtained a packet of your Petunia Seed, and from the seed-pan I selected thirteen to grow on. They turned out splendid, hardly two alike. Out of these I selected six, and showed them against seven or eight competitors, at the Royal Western Horticultural Exhibition, and obtained the first prize."—J. RELLAND, *Gardener to* W. Radford, Esq., *Mount Drake, Plymouth* (1876).

Per Sealed Packet, 250 Seeds, 2s.

W. HENDER AND SONS, Bedford Nursery, Plymouth.

GRAPE VINES.—Fine strong planting Canes of most of the leading sorts, 30s. and 36s. per dozen for cash.

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To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent on through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.

THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone: also at Ashford.

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5,000 APPLES of best sorts.
3,000 PEARS of best sorts.
20,000 GOOSEBERRIES.
5,000 CURRANTS.
10,000 AUCUBAS, 6 inches to 3 feet.
10,000 GREEN HOLLIES.
10,000 HORSE CHESTNUTS.
10,000 large trees for immediate effect, consisting of LIMES, ACACIA, BIRCH, ELM, POPLARS, SYCAMORES, &c.

SPECIAL CHEAP OFFER of WINTER and SPRING BEDDING PLANTS.

AURICULA, Alpine, fine strain, in 60-pots, 12s. per 100, 15s. per 100.
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" Rob Roy, fine red, ditto, 25s. per 1000, 3s. per 100.
" Bride, finest large white, ditto, 35s. per 1000, 4s. per 100.
MENTHA PULEGIUM, strong clumps, 15s. per 1000, 2s. per 100.
MYOSOTIS DISSITIFLORA, true, well rooted fine clumps, 4s. per 1000, 5s. per 100.
PANSY, Cliveden Blue, fine healthy plants, 50s. per 1000, 6s. per 100.
" Blue King, ditto, 50s. per 1000, 6s. per 100.
PRIMROSE, single Lilac, strong, 6s. per 100.
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ROCKETS, Double Purple, ditto, 10s. per 100.
" Double White, ditto, 8s. per 100.
CATALOGUE of General Nursery Stock on application.
W. BALL AND CO., Bedford Road Nursery, Northampton.

Plants, Special.
The present is the best time for planting
HARDY NORTH AMERICAN ORCHIDS, such as Cypripedium, Habenaria, Orchis, &c., in their many species, of which we offer a splendid stock of newly imported plants with strong flowering crowns. Also DISA GRANDIFLORA, in imported clumps, full of tubers, from 5s. each. This is the most beautiful of terrestrial Orchids, and ought to prove quite hardy in England.
N.B. The North American Orchids, grown as Cool-house Orchids, are most charming; and as their prices, for flowering plants, range from 2s. 6d. to 3s. 6d. each (and less when more are taken) they are within the reach of everyone.
CATALOGUES post-free on application.
THE NEW PLANT AND BULB COMPANY,
Colchester.

To the Trade.—Vines—Vines—Vines.

W. G. CALDWELL AND SONS have still extra strong fruiting Black Hamburgh VINES to offer, excellent stuff, at 5s. 6d. each. Also AZALEA AMŒNA CALDWELLII, well set with buds, 18s. and 24s. per dozen.
APPLES, Standard, 40s. per 100.
" Pyramid, 60s. per 100, in all leading varieties.
General CATALOGUE of Fruit Trees, Conifers, Roses, &c., post-free on application.
The Nurseries, Knutsford, Cheshire.

To the Trade.

LAURUSTINUS, fine, well-rooted plants, set with buds, 2 to 3 feet, 20s. per 100.
SPRUCE FIRS, 3000 shaped, 2 to 3 feet, 30s. per 1000, fit for potting.
STANDARD ROSES, the best sorts, including many Teas, 70s. per 100, our selection.
J. MORSE AND SON, The Nurseries, Dursley, Gloucestershire.

L. PAILLET, NURSERYMAN, Chatenay les Sceaux, near Paris, has to offer the following:—Roses, Fruit Trees, maiden or trained; Ornamental Trees and Shrubs, Tree and sinensis Paonies; Magnolia Lenné, oxoniensis and others; Camellias, Rhododendrons, Azaleas, Clematises, Conifers, Bamboos, Yuccas, tuberous Begonias, Viola Belle de Chatenay and others; Trees for Avenues, such as Acers, Platanus, Horse Chestnut, FRUIT TREE STOCKS, FOREST TREES, and others of every description grown in large quantities: Manetti, De la Grifferaie and Brier Rose Stocks.
Send for Trade List and Catalogues to L. P., as above; or to his Agents in London, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, E.C.

Planting Season.

MESSRS. JOHN STANDISH AND CO. beg to call the attention of those engaged in planting to their extensive and well-grown stock of EVERGREEN and DECIDUOUS PLANTS, FOREST TREES, &c. All are without exception well rooted and in fine condition for removal. The following list comprises a few of those Trees, of which they grow immense quantities:—

FOREST TREES.
Acacia, 3 to 4 and 10 feet.
Birch, 3 to 4 feet and 10 to 15 feet.
Chestnut, 2 to 4 feet.
Pinus Laricio, 1 to 2 feet.
Pinus austriaca, 1 to 1½ foot.
Scotch Fir, 1 to 1½ foot.
Spruce, 1½ to 2½ feet.
Weymouth, 3 to 4 feet.
RHODODENDRON, fine named varieties.
" seedling, 2 to 4 feet, fine.
" ponticum, 12 to 18 inches, very bushy.
YEW, English, 2, 3 and 4 feet.
" Irish, 3, 4 and 5 feet.
BOX, 2 to 2½ feet.
AUCUBAS, green and variegated.
BERBERIS, Darwinii.
" Aquifolium.
LAUREL, common, 2 to 2½ feet.
" " 3 to 4 feet.
" caucasicum, 2 to 2½ feet.
" obovata, 1½ to 2 feet.
" latifolia, 1 to 1½ foot.
" Portugal, 1½ to 2½ feet.
" 3 to 4 feet.
HOLLY, Green, 1 to 1½ foot
" hybrid, 1½ to 2 feet.
" " 2 to 3 feet.
" variegated, in variety.
ROSES, H.P., in variety, Standards.
" " Half-standards.
" " Dwarfs.
" Tea, in pots, in great variety.
" Gloire de Dijon, extra strong.
" Marechal Niel, extra strong.

CLEMATIS, IVIES, and other CLIMBING PLANTS, and a vast variety of EVERGREEN and DECIDUOUS SHRUBS. Also
FRUIT TREES.—Pyramid Apples, Pears, Plums; Trained Apples, Apricots, Cherries, Nectarines, Pears, Peaches and Plums.
Samples and quotations on application.
Royal Nurseries, Ascot, Berks.

Vines—Vines—Vines.



B.S. WILLIAMS begs to announce that his stock of VINES is this year unusually fine, and comprises all the leading kinds, including "Alnwick Seedling."
For descriptions and prices, see B. S. W.'s BULB CATALOGUE for this year.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

"GENUINE SEEDS ONLY."



JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEIR

CATALOGUE of GARDEN and FLOWER SEEDS for 1879,

Containing Lists of Novelties, Horticultural Implements, and other Garden Requisites, is now published, and will be forwarded post-free on application.

Descriptions will be found of the following New and Choice Seeds:—

		s.	d.
BROCCOLI, Veitch's Self-protecting Autumn,	per pkt.	1	6
CAULIFLOWER, Veitch's Autumn Giant	"	1	6
CELERY, Major Clarke's fine solid Red	"	1	0
CUCUMBER, Tender and True	"	2	6
ENDIVE, Picpus, Green Curled	"	1	6
ENDIVE, Round-leaved Batavian	per ounce	1	6
LETTUCE, Californian, Curled	per packet	1	0
LETTUCE, Early Paris Market	"	1	0
LETTUCE, Hicks' Hardy White Cos	per ounce	1	6
MELON, Eastnor Castle Green-flesh	per packet	1	6
MELON, Read's Scarlet-flesh	"	1	6
PEA, Criterion	per quart	2	6
PEA, Marvel (Laxton), new	"	5	0
TOMATO, Hathaway's Excelsior	per packet	1	0
TURNIP, Veitch's Red Globe	per ounce	0	6
POTATO, Prince Arthur	per peck	5	0
POTATO, Veitch's Improved Ashleaf Kidney	"	4	0

POTATOS.

J. V. & Sons have fine samples of all the newest and best kinds. For prices see Seed Catalogue.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

STERLING NOVELTIES

THAT SHOULD BE IN

EVERY CATALOGUE AND IN EVERY GARDEN.

CARTER'S "TELEPHONE" PEA.



CARTER'S "TELEPHONE" PEA.

Awarded a First-class Certificate by the Royal Horticultural Society after a Crucial Trial in the Society's Gardens.

Selected from Calverwell's "Telegraph," from which it differs in the seed being wrinkled, whilst the quality is very superior. Like Culverwell's "Telegraph" it is an extraordinary cropper, bearing myriads of immense semi-double pods, full of very large Peas of most exquisite flavour. Highly recommended. **Price, in Sealed Packets, per Pint, 2s. 6d.**

CARTER'S "MODEL" CUCUMBER.

The handsomest Cucumber grown. As the result of careful cultivation we have succeeded in producing what may be fairly described as the model of perfection in Cucumbers, embodying the fine form and general characteristics of Tender and True, with the prolific habit and strong constitution of the Telegraph. Perfect in outline, with scarcely any neck, and of fine flavour, this variety has become popular both for exhibition and table purposes.

"Your Model Cucumber is the model of what a Cucumber should be—handsome, productive, and of delicious flavour."—Mr. J. GOODACRE, *Head Gardener to the* Right Hon. Earl of Harrington.

Price, in Sealed Packets, 2s. 6d. and 3s. 6d. per Packet.

PARAGON CUCUMBER (Kelway).

Figured in the "Gardeners' Magazine," November 16, 1878.

A remarkably productive, handsome, and very distinct Cucumber, with scarcely any neck, and averaging from 18 to 24 inches in length. It is an enormous cropper, producing fine fruit at nearly every joint. **Price, in Sealed Packets, 3s. 6d. per Packet.**

DELL'S NEW HYBRID MELON.

The only Green-fleshed Melon awarded a First-class Certificate by the Royal Horticultural Society this year.

This delicious Melon is the result of a cross between "Colston Bassett" and "Victory of Bath," and is certainly the best green-fleshed Melon ever tasted. A large number of aspirants for honours were submitted to the judgment of the Committee of the Royal Horticultural Society during the present year, but "Dell's Hybrid" was the only green-fleshed variety pronounced worthy of a First-class Certificate.

Price, in Sealed Packets, containing Six Seeds, 2s. 6d. per Packet.

CULVERWELL'S TELEGRAPH PEA.

"The largest and handsomest Pea grown."—Mr. J. GOODACRE, *Gardener to the* Right Hon. the Earl of Harrington. **In Sealed Packets, per Pint, 2s. 6d.**

CARTER'S CHALLENGER PEA.

"The best dwarf Pea I have ever used."—Mr. R. SOWERBY, *Gardener to the* Right Hon. the Earl of Macclesfield. **In Sealed Packets, per Pint, 2s. 6d.**

We offer valuable Prizes for Dell's Hybrid Melon and the New Peas named in this advertisement at the Shows of the Royal Horticultural Society.

CARTER'S "MODEL" CUCUMBER.



Carter's

THE QUEEN'S SEEDSMEN,

HIGH HOLBORN, LONDON, W.C.

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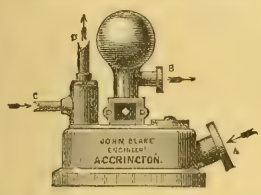
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This Ram will raise a part of the same water that works it, or will raise pure water from a well whilst it is worked by a stream of impure water.

TESTIMONIALS.

From the Right Hon. T. SOTHERN ESTCOURT, *Estcourt Park, Gloucestershire, September* 6, 1875.

"You will be glad to hear, as I am to tell you, that your Self-acting Hydraulic Ram has worked exceedingly well and continuously since it was erected, more than twelve months ago. It is, in fact, perfectly successful."

(The delivery pipe in the above case is 4200 feet long, with 100 feet rise.)

From Captain TOWNSHEND, *Wineham, February* 10, 1877.

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From W. SCARTH, Esq., *Agent to* His Grace the Duke of Cleveland, *Raby Castle, Darlington, July* 16, 1878.

"The Hydraulic Ram you supplied to his Grace the Duke of Cleveland in 1875 is a complete success. It worked for more than two years without once stopping, and throws more water than promised."

Deanwater, Wilmslow, November 20, 1873.

"Dear Sir,—In answer to your enquiries respecting the Hydraulic Ram you supplied me with six months ago, I beg to state that I am more than satisfied with it, as it is in perfect order, sending up to the top of the house about 2000 gallons of water in the twenty-four hours, whereas you only contracted to deliver in that time 500 gallons. I have, therefore, every reason to be well pleased with your work, and more especially as I had a Ram supplied me by another maker which could not send up a single gallon of water to the height required, and a second maker informed me that no Ram with a fall of 3 feet could send up water to the distance required, namely, 120 feet. But yours is an accomplished fact, and does its work most effectually.—I am, yours truly, L. HANMER."

From JOHN TAYLOR, Esq., *The Rocks, Bath, Aug.* 22, 1878.

"The Self-acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water than the wheel did to the same height."

From JOHN PENNINGTON, Esq., *Emmett Hall, near Colne, December* 21, 1868.

"Sir,—The Self-acting Hydraulic Ram you supplied me with nine months ago continues in excellent condition. It receives water from a spring through a 2-inch pipe, of which it forces 3600 gallons per day of twenty-four hours to a height of 90 feet, exceeding all you promised, and far surpassing the water-wheel and force pumps which it has displaced. Its cost is small, it occupies but little space (9 square feet), and in mechanical detail is simplicity itself. I have much pleasure in recommending it as a cheap and efficient method of raising water."

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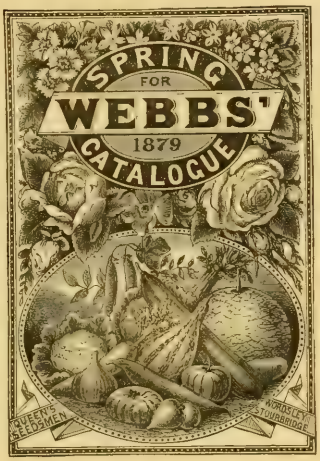
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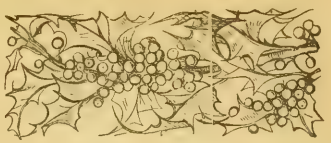
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SATURDAY, DECEMBER 21, 1878.

EVERLASTING AND DYED FLOWERS, ETC., FOR CHRISTMAS.

ALMOST remarkable development of the trade in dried and dyed flowers and grasses has taken place of late, and the demand for these for decorative purposes during the winter months, and especially during the Christmas season, is one of an unprecedented character. A desire for bright and pleasant colours at Christmas appears to be inherent in human nature, and as flowers supply these in the most abundant manner, in the absence of fresh ones—which cannot be had in mid-winter save at a very great expense—preserved flowers are furnished to an extent and variety truly extraordinary to those unacquainted with the resources at command.

A quarter of a century ago the trade in dyed flowers and grasses was in its infancy as far as this country is concerned, and was confined to Gnaphaliums, Helichrysums, Xeranthemums, and a few others, and a select number of grasses; but now, owing to so much enterprise and inventive genius being thrown into the trade, both at home and abroad, many flowers of a supposed fragile character, and apparently unfitted for the purpose, are first of all dried and then dyed—some dried only—and employed in making up bouquets of everlastings of a very charming character. These bouquets are made up of various sizes, some of them put together with so much artistic skill as to rival in expressiveness of good taste the famous bouquets of cut flowers for which Covent Garden Market is so famous.

It is worth while looking into the composition of one of these bouquets. The groundwork is made up of Roses, Scabious, Helichrysums, Acroclinium, Statice, Xeranthemum, Tagetes, and one or two others; and rising above these, so as to give an elegant *abandon*, are Rhodanthes, Pansies, Convolvulus minor, Xeranthemum, &c. One of these bouquets, when tastefully arranged, is a present fit for a princess. The perfection to which the drying and dyeing processes have been brought leads to a close imitation of natural tints, and if some of them may be said to adorn Nature

"With colours not her own;"

they are yet in keeping with the season of the year.

Messrs. Hooper and Co., of Covent Garden Market, have developed a trade in dyed flowers and grasses of so extensive a character as to necessitate the recent building of a very handsome and commodious block of new business premises in Hart Street, that may be truthfully described as the largest warehouse in use for this purpose. From the basement and ground-floor, where the dyeing processes are carried on, to the roof, where drying processes are carried out—with all the intermediate floors specially fitted up with drying-rooms, sorting-rooms, working-rooms, &c.—the place teems with evidences of an extent of trade absolutely surprising to outsiders. The greatest demand for the various kinds and combinations of everlasting flowers, &c., is during the last four months in the year, and about Christmas-time; and in the last six months of the year as many as fifty hands are employed in dyeing, drying, and making up the combinations, all the bouquets being made up on the premises.

Mention has already been made of the variety

of flowers used. The pretty little Gypsophila paniculata is imported in very large quantities, and is extensively used as bases for bouquets, and as a sort of foundation to arrangements of cut flowers. Statice incana, light as it is in bulk, is imported by the ton, so useful is it in various ways. Zinnia Haageana is also in great request. The white Cape Helichrysum is specially worthy of notice, because of its beautiful soft white colour; it is obtained in very large quantities from the Table Mountain and Cape Town. Then there is the rich blue Corn Cockle, Lily of the Valley, and others too numerous to mention; while constant experiments are being made to widen the area of choice in the matter of flowers. It is from Germany and France that the chief supplies of flowers are drawn; some that are intended for dyeing are dried in the air to get the moisture out of them before packing; others are packed carefully in layers of sand, and so dried and stiffened without loss of colour. How some of the Roses, Pæonies, Carnations, &c., are preserved in such an admirable manner, so as to maintain their colours, is indeed a subject for wonder. It is supposed that the Pæonies are hung up and not placed in sand in the first instance, but dipped into it afterwards when the drying has reached a certain stage. The beautiful white Cape Helichrysum, to which reference has been made, is unprepared in any way — it is supposed not bleached even, but to be used in a natural state. White flowers are in very great request, and the supply hardly keeps pace with the demand. Referring again to the drying process, it may be stated that the flowers are laid in metal trays with layers of sand between them, and warmed in a moderate heat; and not only do they not lose colour, but the action of the sand and heat deepens and intensifies the tints of some of them. It is surprising what a rich tone of blue is found in the undyed Corn Cockle.

The grasses mostly used are Stipa pinnata, imported by the ton from the South of Russia and Hungary, where it is grown as the common grass of the fields, and animals feed upon it. It is stated that in one district of Southern Russia there is a hospital famous for its curative successes in regard to consumption, and the patients are treated to mare's milk taken from animals fed on the rich succulent Feather-grass. Next comes Agrostis pulchella, obtained from Italy, Germany, as well as from this country; and it is largely used in forming the groundwork (in combination with Feather-grass) of bouquets of grasses. Then there are the Brizas, Bromus brizæformis, one of the grandest of grasses; and Lagurus ovatus, all obtained from the same sources as the Agrostis. Others are Avena sterilis, a favourite and charming grass; Uniola paniculata, an imposing looking grass from Florida, growing some 6 feet in height, and very useful for large combinations of grasses; Erianthus argenteus, a beautiful silky form; all the Poas and commoner types, and many others. The best examples of many of the grasses come from the South of France.

While on the subject of grasses, it may be stated that they are all put through a bleaching process, of which chlorine forms the base. This is done by Messrs. Hooper & Co., who receive all their grasses in the natural state. The bleaching agent is used variously according to the materials operated on, and any beautiful, light, and graceful colour tells best on a bleached ground. Next comes the process of drying after bleaching, and the great thing is to get out the moisture as thoroughly as possible. The grasses are placed in a centrifugal drying machine, which, revolving with amazing rapidity, throws off some 90 per cent. of the moisture through a wire fencing forming the circumference of the revolving chamber. The pressure of business makes it necessary to have the drying done as rapidly as possible after bleaching, and it is required that the grasses be dry in twenty-four hours. They are then taken to a drying-room specially designed for the purpose, the dimensions 15 feet by 8 feet, cased with iron-plated walls, floor, and roof, and heated by means of 4-inch hot-water pipes, which are laid on over the building, as it would be almost impossible for the young girls employed in making up the bouquets, &c., to work were it not for the consideration shown for the comfort of their workpeople by Messrs. Hooper & Co. The grasses are suspended till the moisture is quite dried out of them, and they are ready for dyeing. The heating of this immense warehouse is admirably done, there being five storeys above the source of heat.

The pans used for dyeing are like huge preserving pans heated with gas. The various dyes are used at nearly boiling point; the dye becomes incorporated with the water at the boiling point, and they are then thickened as required. To this important department of the business great attention is paid, and nothing is left undone to perfect the system and modes employed to the utmost possible extent.

The sale of bouquets, &c., of everlasting flowers is so enormous that any reliable statistics would be regarded as incredible by many. Of bouquets alone, of all sizes, some 100,000 are required for a season's supply. The greatest demand for them is in the Black Country, in Lancashire, Yorkshire, and in all the great manufacturing and industrial centres. Small bouquets of dyed Gnaphaliums find a ready sale; some of the orange, purple and violet tints are remarkably fine.

The consumption of moss is one of the wonders connected with such a business. It is imported very largely, in three shades of green, all perfectly natural greens, vivid in colour as they are; one in particular is of a fine dark hue, submitted to some process to intensify the natural tint. The commonest German moss is imported so largely that Messrs. Hooper & Co. require several tons for their own working up, in addition to a large wholesale trade in bunches. One importation received not long since consisted of 500 cases, each containing twenty dozen bund'es of moss, and this was but one of several transactions.

Couronnes of preserved and dyed flowers are made in great numbers, and in almost endless combination; the base is a white lichen from America, and the white Cape Helichrysum and orange Gnaphaliums play an important part in their construction. Porcelain *couronnes* made of what is known as biscuit china, are in considerable demand, formed in all kinds of flowers with a general fidelity to Nature. Then there are mortuary *couronnes* in great variety, made of japanned tin painted to represent leaves and flowers. Then there are combinations of tin and china, some of which are very good, and the representations of English grasses and flowers are admirably executed. Little bouquets and buttonholes, with bunches of leaves, are also manufactured in biscuit china. These are all of foreign manufacture, mostly of German and French make. Especial mention should be made of the porcelain *couronnes* representing white Lilac and white Roses in combination.

Another remarkable ramification of this business is the artificial plants, which have become quite a feature. When the redundancy of imaginative conception on the part of the native artist gives place to a truer imitation of natural productions, these plants will become even more popular. Those most in demand are representations of foliage plants, Begonias and Caladiums being the leading ones. Begonias are well produced, and the same holds good of Aralias. These plants are manufactured of cambric, stiffened by the application of dye. They are manufactured in France, and the native artists succeed better in imitating leaves than they do flowers.

Such is a rapid sketch of some of the leading features of an aspect of horticultural enterprise as surprising in extent as it is admirably wrought out. The thinker in giving play to his inventive genius does not scorn to be utilitarian; and the worker out of the products of the designer's mind is for ever rising to a higher level of perfection in his handiwork. It is the old truth, in ever-recurring felicity of illustration:—

"Men my brothers, men the workers, ever working something new;
What they yet have done but earnest of the things they yet will do."

R. D.

New Garden Plants.

CRASSULA ALPESTRIS, *Thunberg, ex Harvey et Sonder, Fl. Capens.* ii., 341.

This is a small, neat-habited, pretty, white-flowered species, received at Kew from Herr Max Leichtlin under the name of Sedum alpestre, which, however, is quite inappropriate. On examination it proves to be a Crassula identical with native specimens from Drège and others of Crassula alpestris. It has hitherto been grown in a cold frame, but it would probably be more suitably housed in a cool greenhouse where it could be made secure from frost. The following description is taken from cultivated specimens:—

Glabrous, stems erect, cylindrical, of the thickness of fine whipcord, reddish, simple, or but slightly branched. Leaves sessile, opposite, connate or slightly decurrent, spreading or ascending, ½ inch long, fusiform, subterete, apiculate. Cymes terminal, 1—1½ inch in diameter, 3—5-forked, many-flowered. Buds elongate ovoid. Calyx-tube shallow, cup-shaped; limb of five deltoid subulate pinkish segments, half the length of the petals. Corolla ½ inch long, cylindric-campanulate, of five petals united at the extreme base, above consisting of five linear-oblong obtuse 1-nerved white petals, which are thickened and somewhat hooded at the recurved tips. Androecium of five stamens attached at the base to the corolla tube, opposite the petals; filaments white; anthers basifixed, ovoid acute, purplish; carpels five, oblong, tapering above into long linear subulate styles, opposite the petals; glands five, emarginate, orange-yellow; seeds tuberculed. Cape of Good Hope. *M. T. M.*

BEGONIA PLATANIFOLIA (GRAH.) OHLENDORFFIANA, *nov. var.**

This Begonia was imported from Brazil by M. Herrmann Ohlendorff, of Ham, near Hamburg. It is very curious, having short woody stems and very ornamental leaves with white blotches, which may be grown dark purplish or beautifully green, according to the temperature, it becoming green as the temperature is raised. The petioles, the very base of leaf, and the inferior side are more or less purplish. The leaves have a very peculiar shape, since they are quite inequilateral, nearly cut, as is B. maculata, with sinuses and projecting angles on one side and of not very thick structure. The recently introduced plant showed the obliquity and unequal shape in an extravagant manner. After a time the leaves become a little wider, so that I finally think it is better to regard the plant as a highly curious variety than a species. The flowers stand in a few-flowered cyme, and have broad sepals, which are very distinctly serrate, which I did not see in the specimens of the Kew herbarium, and which may afford another mark, though the original drawing (*Botanical Magazine*, 3591) shows some little crenation.

Finally, M. Ohlendorff's plant has many white blotches on the leaves, which were not seen in the original plant (see *Botanical Magazine, l.c.*). I have great pleasure in dedicating the plant to M. Herrmann Ohlendorff, of Ham, near Hamburg, a most industrious nurseryman, whose father was the assistant of Professor Lehmann at the foundation of the Hamburg Botanic Garden, later at Ham, where I remember having seen in 1854 Rhododendron chrysanthum and Cyrtopera Woodfordi in flower under his clever management.

As I have never made a very special study of Begonias, I was but too grateful for the advice of London fellow-workmen. I consulted about the plant Professor Oliver, Dr. Masters, Messrs. B. Clarke and N. Brown, who each enlightened me with his views. Neither of them had seen it before. *H. G. Rchb. f.*

TILLANDSIA (WALLISIA) CIRCINALIS, *Griseb., Pl. Lorentz*, p. 224.†

This well-marked species of Tillandsia has been in English gardens for some time, but has never been named. Now, upon revising the Kew collection, in

* *Begonia platanifolia* (Grah.) *Ohlendorffiana.*—A typo recedit foliis valde inæqualibus albo-maculatis; sepalis energetice serratis. *H. G. Rchb. f.*

† *Tillandsia* (*Wallisia*) *circinalis.*—Caule producto foliato semipedali; foliis 12—20 lanceolato-subulatis 6—9 poll. longis crassis patulis apice circinnatis ubique dense adpresse argenteo-lepidotis; pedunculo semipedali foliis reductis adpressis in-

which there is a fine specimen, I find that it agrees with a plant lately named and described by Professor Grisebach, from specimens collected in the Argentine territory by Dr. Lorentz. It seems to have been originally discovered long ago by Tweedie in Uruguay, and there is a specimen gathered by him in the Kew herbarium. It belongs to the small section of distichous Tillandsias, on which Regel founded his genus Wallisia, in which the blade of the petal protruded outside the calyx is cuneate in shape, and about as long as broad. The two species of this group, which are already familiar to cultivators, are T. xiphioides, Ker, from the same country as circinalis and T. but spread over a produced stem 4—6 inches long, their dilated bases (which are above 1 inch broad) clasping it tightly, the spreading lanceolate-subulate blade reaching a length of 6—9 inches, ½—¾ inch broad where it leaves the stem, tapering gradually to a thick channelled more or less circinate tip, both sides densely coated with adpressed silvery lepidote scales. Peduncle about ½ a foot long, its small lepidote leaves adpressed to it up nearly or quite to their tips. Flowers in a small compact panicle 3—4 inches long, consisting of several ascending few-flowered dense spikes and a similar end one. Ultimate bracts oblong-lanceolate navicular, ½—⅝ inch long, much



Fig. 127.—Inflorescence, etc., of Conophallus (?) titanum. Spadix 6 feet long! (see p. 788.)

cyanea, K. Koch, best known in gardens as T. Lindeni or T. Lindeniana. The singular thick rat's-tail-like leaves of the present plant mark it at a glance. As Dr. Grisebach says of it, "Species pulchra robusta, foliis infra apicem circinato-gyratis caudæ Rodentium similibus."

This proves to be identical with Phytarhiza Duratii of Visiani, in *Mem. Inst. Ven.* 1855, p. 349, *cum icone!*

Leaves 12—20, not aggregated in a dense rosette,

structo; spicis pluribus densis brevibus ascendentibus 3—4-floris in paniculam parvam aggregatis, bracteis ultimis oblongo-lanceolatis semipollicaribus valde imbricatis dorso lepidotis; sepalis nudis lanceolatis præter bracteam breviter exsertis; petalis violaceis calyce sesqui-longioribus, laminâ lata cuneata; genitalibus ultra calycem haud protrusis.

imbricated, acute, lepidote on the back. Calyx ½ inch long, naked, just protruded beyond the bract, its lanceolate acute sepals tightly convolute. Petals violet, half as long again as the sepals, the protruded cuneate lamina ¼—⅓ inch long and broad, rounded at the top. Stamens and style not protruded beyond the calyx. *J. G. Baker.*

The Laburnum in Flower at Dunrobin Castle.—Mr. Melville writes:—"A Laburnum tree here is at the present time bearing a quantity of flowers, a few samples of which I enclose. Flowers on the Laburnum in the middle of December I should say is rather a rare occurrence in the North of Scotland."

PLANT SHADING.

The problematical egg which is laid, according to Mons. Van Volxem's excellent paper on Orchid shading (*Gardeners' Chronicle*, May 11, 1878, p. 588), has, we flatter ourselves, already been hatched out at Colchester.

"The problem," as he puts it, "stands thus: to admit the largest amount of diffused light, and at the same time to prevent the heat produced by the concentration of the sun's rays in a closed space without being obliged to give a strong current of air. The screen must not present a large surface to the wind, which would soon wear it out, or blow it away altogether. All the shadings that I know of do not answer well that double purpose. Canvas requires much work to roll up and down, so that the glass gets often broken; it is soon rotten and blown to ribbons if not resting upon the roof, and if resting upon it the glass gets heated through, and allows too much heat to pass through; and, above all, canvas is always too dark, so that the fair daughters of the ever sunny climes enjoy the least light in the few days when in our climate they should have the benefit of the sun's rays." And, again, after citing his observations made on Orchids growing in the Andes of New Granada and Peru, also in Ceylon, Singapore, Philippines, &c., he remarks, "I think I can safely infer that plenty of light is a necessary element in the proper cultivation of Orchids; but it is not only to prevent sun-burning that we shade the glasshouses, it is to prevent an excessive degree of heat, and its concomitant scorching, dryness of atmosphere, aggravated still further by a free draught of air, which is worse still if the wind blows from the east."

In the Bamboo-shading which we have had in use since 1874, first for our Lilies, and for the past three summers for our Orchids also, we have, we think, solved the problem thus put. This shading consists of light Bambo rods, a little stouter and stronger than Reeds, varying from $\frac{3}{16}$ to $\frac{5}{8}$ inch in diameter, the smaller size alternating with the larger size, while stouter rods $\frac{3}{4}$ inch thick are interspersed here and there to strengthen the whole, interlaced about every 9 inches apart with a coarse, strong, and durable twine made from the outer husk of the Cocoa-nut, in widths of from 8 to 10 feet, and in lengths as ordered. The rods when put up run horizontally; the mat being perfectly flexible and very light can, when in use, be easily rolled up in a bundle by a cord fastened above passing downward and beneath the mat, round the roller of the mat at its lower edge, then up again to the top, whence passing over a pulley the cord descends again to the bottom of the mat, where it comes within reach of the manipulator. The Bamboo rods are nearly as light as Reeds, and therefore there is no fear of glass breakage, yet are too substantial and stiff to allow of the wind getting beneath and doubling them up. The Bamboo being coated externally with a polished siliceous glaze, is strengthened, stiffened, and rendered waterproof, thus becoming durable. A water-tight covering is, of course, necessary to protect the mats when rolled up from wet, which, though it would not damage the rods, would in time rot the fibrous twine which binds them together; yet this interlacing fibre, being made from Cocoa-nut husk, is very wiry and lasting, dries easily, and will stand a great deal of wet before rotting.

Each rod is kept a little apart by means of the stout interlacing twine, hence there are little interspaces of one-sixteenth to one-eighth of an inch here and there between each rod, allowing a small portion of the sun's rays to pass inside, whilst others are broken up and somewhat reflected by the glossy sides of the rods; thus a large amount of diffused light is admitted, scorching is entirely absent. The material is very durable. With the exception of some little fraying at the ends of the rods, there is no perceptible difference between the condition of the mats now in use by us and that when first put up. They cannot be doubled up by the wind. Being light, they are easily rolled up, and in consequence of their stiffness can be made to wind up easily on two or three bearers at a distance of 10 to 12 inches above the glass, thus admitting a cool current of air between mat and glass. They have also another great advantage besides their durability, viz., their cheapness, for they can be supplied for a little less than 4*d.* per square foot, and all the fittings they require are a box at the top to keep away wet, staples screwed in above

to hold them up, cords to roll up, and a wooden roller at bottom of each mat, 2 inches in diameter, to roll up on.

In case of hailstorms, if unrolled they would afford a complete protection to the glass, and owing to their elasticity would receive little or no damage. Reverting to the leading article on shading, April 20, 1878, p. 491, you write:—"It becomes a matter of the greatest importance that even when something must be done to intercept the sun's rays when most powerful, the means employed should be such as to affect the object required with the least possible exclusion of light. This can only be done by studiously avoiding the use of any material that will do more than break the sun's rays. Anything more than this becomes a positive evil, the unavoidable influence of which is the production of weak, soft, spongy wood, with foliage proportionately thin and weak, and devoid of the lasting properties it should naturally possess—the plants being more or less of a drawn-up character, and in the case of those that are intended to produce flowers, reducing to a minimum their blooming capacities, &c.

"Plants that are grown under the influence of too much shade soon become permanently weakened, and ultimately succumb or get into a sickly state, such as to render them valueless.

"The material of which blinds for plant-houses are made should never be thicker or closer than simply necessary to break and diffuse the sun's rays: all thick or closely woven canvas should be rejected.

"In Orchids there can be no doubt but that much of the disease existing, and the immense value that has been sacrificed in them has been largely contributed to by over-shading."

Comparing the experience during the past three years of our Bamboo shading with what is demanded here, we think it has exactly fulfilled the conditions laid down; certain we are that our Orchids have thriven remarkably well in the houses thus shaded; while the interior is extremely pleasant and grateful, all glare and scorching are absent, and an agreeable diffused light prevails.

When used out-of-doors, as shading for Lilies, in hot sunshine, our children have slung their hammocks beneath, luxuriating in a pleasant cool retreat from the blaze of sunshine. A very agreeable summer-house might with the mats easily be extemporised by a couple placed slanting at an angle of 45°, turned southwards, and a portion of the mats overlapping above for a roof. These mats might also be used in the spring to guard from frost the blossoms of wall fruit trees; in full summer to protect tender plants from sun-scorching and east winds, when placed temporarily out-of-doors; or in our southern climes to cover outside the windows and walls of apartments, when the full blaze of the sunrays would render the interior inconveniently or injuriously hot or light. I once saved the life of an aged invalid on a tropical summer day by reducing some 10° the temperature of the apartment in which she lay, by covering the windows, walls and leads of her room with sheets and blankets spread outside: another much younger patient, similarly ill, died the same day in a room in which I was not able to adopt the same measures. Bamboo mats suspended outside would have an equally good result *quoad* the reduction of temperature, but with the advantages that while conferring a delightful coolness, they would admit light and give a pleasant brightness in the interior far preferable to the gloom and shade of closed shutters and darkened windows.

We must apologise for writing so much about ourselves, but our excuse must be the introduction by us of a perfectly new material, cheap and durable, for shading purposes, useful in a variety of ways, but peculiarly so for horticultural uses, and especially for Orchid culture. We do not recommend it as an untried thing, but after an experience of four years we fully believe it will be found to possess all that we claim for it. We shall have pleasure in sending to your office samples of the new shading for inspection. *Alexander Wallace, New Plant and Bulb Company, Colchester.* [The sample received appears to be the same as the shading commonly used in Italy. EDS.]

GLOXINIA MACULATA.

THIS is one of the pleasant old faces in the plant-world with which Sir George Macleay, through his gardener, Mr. Green, from time to time treats the visitors to the South Kensington meetings, and very welcome are they to those lovers of plants who appraise them according to their innate worth, and not by their commercial importance. This latter test is often too strictly applied in the judgment of the plants there exhibited. This novelty, it is urged, will never become popular—that is, not wanted, it has now so many allies; a third is held to be beaten by some old or new favourite, and therefore must be tabooed; and so it comes to pass that many a plant whose beauty must perforce pass unchallenged is given the cold shoulder, and then sinks into comparative neglect. It is from this undeserved neglect that Mr. Green, and cultivators of his stamp, from time to time brings forth a gem.

These remarks apply to the subject of our illustration (fig. 129) on p. 789. Introduced in 1739, or earlier—for in that year it was cultivated in the Chelsea Botanic Garden, and figured in the *Botanical Magazine* in 1809—it was recognised by few cultivators of the present day when recently exhibited. And yet it is not only a beautiful plant as regards all the features which go to make up plant beauty, but it is also a showy subject, and therefore one which should not have been elbowed out of our hothouses by the myriads of foliage plants which have forced their way into them.

Our present subject is the type species upon which L'Heritier founded the genus Gloxinia, and has also been retained by Decaisne and others as the type of the modern restricted genus, our popular Gloxinias being referred to Ligeria, and differing from Gloxinia proper in having larger solid tuberous rhizomes instead of amentiform scaly stoloniferous tubers like those of Achimenes, by which the true Gloxinias are increased. It is thus a stove perennial with annual stems, as in Achimenes, but is of a much bolder and more sturdy growth. The erect fleshy simple spotted stems grow about 1 foot high, and are furnished with broadly ovate, glossy serrated, thin succulent leaves, sparsely hairy above, reddish beneath; in the axils of these are produced the bold showy flowers, which are large, downy, ventricosely campanulate, with a slightly spreading limb, of a purplish-lilac colour. The "four anthers are connected together at one extremity near the insertion of the filaments, from which point the lobes of the anthers diverge and form an eight-rayed star." It is a native of New Granada, and bears the synonym of Martynia perennis of Linnæus, and Salisia gloxiniæflora of Regel. An allied species, G. pallidiflora, from the same country, which has rather smaller flowers, paler in colour but more inclining to blue, was introduced to Kew about 1844, but is probably now lost to our gardens.

These plants are of easy culture, requiring a stove temperature and light rich soil. They should have a season of rest, the scaly tubers being repotted and started into fresh growth in spring. *T. M.*

NEW PLANTS CERTIFICATED

BY THE FLORAL COMMITTEE AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS, 1878.

**** *F.C., First-class Certificate; S.C., Second-class Certificate; H.C., Highly Commended; B.C., Botanical Commendation.*

Abutilon Louis Marignac .. Bull and Lemoine, Aug. 16—F.C.
" Reine d'Or .. .. Veitch, Aug. 16—F.C.
Adiantum cyclosorum .. .. Veitch, June 4—F.C.
" Lawsonianum .. .. Veitch and Williams, May 7, F.C.
" neoguineense .. .. Williams, May 21—F.C.
" tetraphyllum gracile .. Bull, April 16—F.C.
Aerides rutilarum .. .. Veitch, Feb. 19—B.C.
Alocasia Johnstoni .. .. Bull, April 16—B.C.
Alsophila plumosa [Athyrium scandicinum] .. .. .. Williams, May 21—F.C.
Amaryllis Crimson Banner .. Little, April 2—F.C.
" E. Pilgrim .. .. Williams, April 16—F.C.
" Mrs. Rawson .. .. Williams, March 5—F.C.
Androsace sarmentosa.. .. Atkins, May 7—B.C.
Anemidictyon Phylliditis tessellata .. .. .. Williams, May 7—F.C.
Anthurium Scherzerianum album .. .. Veitch, Oct. 15—F.C.
Aquilegia alpina superba .. Dean, May 7—F.C.
Athyrium scandicinum — see Alsophila plumosa
Auricula (alpine) Silvia .. Douglas, May 7—F.C.
Azalea indica Kaiser Wilhelm .. Veitch, May 7—S.C.
" " Madame Eeckhaute .. Veitch, May 7—F.C.
" (amœna) William Carmichael .. .. Williams, March 5—F.C.
Begonia Chiswick Blush .. R.H.S., Aug. 6—F.C.
" Louis Thibaut .. .. Hooper, Sept. 17—F.C.
" Mrs. Dr. Todd .. .. Laing, Aug. 6—F.C.
" President Burelle .. Laing, May 21—F.C.
Bilbergia nutans .. .. Green, Dec. 17—B.C.
Blechnum punctruptum .. Veitch, Aug. 20—B.C.
Bollea Patinii .. .. Veitch, March 19—F.C.
Bomarea Caldasi .. .. Ellacombe, May 7—F.C.
" Carderi .. .. Bull and Green, Oct. 15—F.C.
×Calanthe Sedeni .. .. Veitch, Nov. 19—F.C.
×Cattleya Mitchelli .. .. Mitchell, Aug. 20—F.C.
" Veitchiana .. .. Veitch, Aug. 20—F.C.
Caltha palustris fl.-pl. minor .. Parker, April 16—F.C.
Camassia Brownii .. .. Elwes, May 7—F.C.
Chrysanthemum (Japanese) M. Crousse .. .. .. Jackson & Son, Nov. 19—F.C.
Cinerarias (the strain) .. .. James, Feb. 19—H.C.
Clematis Earl of Beaconsfield Cripps, June 18—F.C.
Coleus George Bunyard .. Veitch, May 7—F.C.
" Kentish Fire .. .. Williams, May 7—F.C.
Cirnum purpurascens .. .. Veitch, April 16—F.C.
Croton Williamsii .. .. Williams, Aug. 20—F.C.
Cycas media .. .. .. Williams, May 21—F.C.
Cyclamen persicum Mont Blanc .. .. .. Smith, Nov. 19—F.C.
" roseum grandiflorum .. Edmunds, Feb. 19—F.C.
" Rosy Morn .. .. Smith, Feb. 19—F.C.
" White Beauty .. .. James, Feb. 19—F.C.
Dactylis aurea .. .. .. Cannell, June 18—F.C.
Dahlia Aurora .. .. .. Keynes, Sept. 17—F.C.
" Clara .. .. .. Rawlings, Sept. 17 F.C.
" Gaiety .. .. .. Keynes, Sept 17—S.C.
" Helen Macgregor .. .. Turner, Aug. 20—F.C.
" Joseph Ashby .. .. Turner, Sept. 17—F.C.
" lutea .. .. .. Cannell, Sept. 17—F.C.
" Paragon .. .. .. Cannell, Sept. 17—F.C.
" Prince Bismarck .. .. Turner, Aug. 20—F.C.
Davallia fijiensis .. .. Bull, April 16—F.C.
Dendrobium d'Albertisii .. Williams, Aug. 6—B.C.
" linguiforme .. .. R.H.S., March 19—B.C.
" superbiens .. .. Williams, Jan. 15—F.C.
Dietes Huttoni .. .. .. Green, April 16.—B.C.
Dioscorea retusa .. .. Veitch, May 7—B.C.
Dracæna vivicans .. .. Bull, June 18—F.C.
Epidendrum Wallisii .. .. Veitch, March 5—B.C.
Erica ebbata polita .. .. Rollisson, June 18—F.C.
Eulalia japonica zebrina .. Laing, Sept. 17—F.C.
Freesia refracta var. alba .. New Plant Co., July 2—F.C.
Gladiolus Gorgonius .. .. Kelway, Aug. 6—F.C.
" Heros .. .. .. Kelway, Aug. 6—F.C.
" Telamon .. .. .. Kelway, Aug. 6—F.C.
Gloxinia Beauty of Anerley .. Wills, May 7—F.C.
Grevillea robusta var. filicifolia .. Rollisson, April 16—F.C.
" fasciculata .. .. Green, Dec. 17—B.C.
Gunnera manicata .. .. Green, June 4—F.C.
Hæmanthus Kalbreyeri .. .. Veitch, May 21—F.C.
" rupestris .. .. .. Bull, Feb. 19—F.C.
Hoplophytum calyculatum .. Green. Nov. 19—B.C.
Hyacinth Grand Master .. .. Cutbush, March 19—F.C.
" King of the Blacks .. Veitch, March 19—F.C.
Ilex scotica aurea .. .. A. Waterer, Nov. 19—F.C.
×Iris Leichtlinii .. .. Elwes, May 7—F.C.
Iris (not named) .. .. Rawson, June 18—B.C.
Jochroma elegans .. .. Green. May 7—B.C.
Lælia anceps alba .. .. Bull, Dec. 17—F.C.
Lastrea aristata variegata .. Bull, April 16; Veitch, Oct. 15—F.C.
Lathyrus Drummondii .. .. Dean, June 4—F.C.
Lilium tenuifolium .. .. Wilson, May 21—F.C.
Liparis elegantissima .. .. Veitch, May 21—B.C.
Macrozamia cylindrica .. .. Bull, Sept. 17—F.C.
Magnolia Halleana .. .. Veitch, March 19—F.C.
Mamillaria sphacelata.. .. Boller, Oct. 15—F.C.
Marica pacifica.. .. .. Bull, May 7—F.C.
Masdevallia radiosa.. .. .. Williams, April 2—B.C.
" triglochin.. .. .. Low, Dec. 17—B.C.
" vilifera .. .. .. Bull, Oct. 15—B.C.
Microlepia hirta cristata .. Williams, Jan. 15—F.C.
Narcissus incomparabilis Leedsii aureo-tinctus .. Barr & Sugden, Mar 17—F.C.
Nelumbium luteum .. .. Green, Sept. 17—F.C.
Odontoglossum Alexandræ Perrinii .. .. Jaques, Nov. 19—F.C.
" madrense .. .. .. Bull, Nov. 19—S.C.
" pardinum .. .. .. Mill, March 19—F.C.
Pelargonium (ivy-leaved) Elfrida .. .. Lemoine, July 2—F.C.
" " Lucy Lemoine .. Lemoine, July 2—F.C.
" (double-flowered ivy-leaved) Mdlle. Adrienne Barat .. .. Lemoine, Aug. 16—F.C.
" " A. F. Barron .. Lemoine, Aug. 16—F.C.
" " Sarah Bernhardt .. Lemoine, Aug. 16—F.C.
" " Viscountess Cranbrook .. .. Lemoine, Aug. 16—F.C.
" (zonal) Jean d'Arc .. .. Lemoine, Aug. 16—F.C.
" " Sophie Birken .. Pearson, Aug. 16—F.C.
" " Dr John Denny .. Sisley, Aug. 16—F.C.
" " Ethe .. .. .. Denny, Aug. 16—F.C.
" (double zonal) Delobel .. Lemoine, Aug. 16—F.C.
" " Ernest Lauth .. Lemoine, Aug. 16—F.C.
" " Jean Dolfus .. .. Lemoine, Aug. 16—F.C.
" " Nymphe .. .. Lemoine, Aug. 16—F.C.
Pernettya mucronata lilacina . Davis, Oct. 15—F.C.
Phalænopsis violacea .. .. Veitch, October 15—B.C.
Picotee Alice .. .. .. Turner, July 24—F.C.
" Eleanor .. .. .. Turner, July 24—F.C.
" Henry Tait .. .. Turner, July 24—F.C.
" Lord Beaconsfield .. Turner, July 24—F.C.
" Mrs. Payne .. .. Turner, July 24—F.C.
" Ophir .. .. .. Turner, July 24—F.C.
" Royal Visit .. .. Turner, July 24—F.C.
Platycerium Hilli .. .. Veitch, June 4—F.C.
Potentilla Prince Arthur .. Marcham, June 28—F.C.
Primrose Ealing Crimson .. Dean, March 5—F.C.
" Octoroon .. .. .. Dean, March 5—F.C.
" Prince Charming .. Green, April 2—F.C.
" Scott Wilson .. .. G. F. Wilson, March 5—F.C.
Primula acaulis sulphurea major .. .. .. Veitch, May 7—F.C.
" sinensis frimbriata coccinea .. .. .. Williams, February 19—F.C.
" " Lord Beaconsfield .. Gilbert, Dec. 17—F.C.
Pterostylis Baptisii .. .. Williams, January 15—B.C.
Ptychosperma rupicola .. Williams, May 21—F.C.
Rhipidopteris peltata gracilima .. .. Veitch, May 7—F.C.
Rhododendron The Tocsin .. Noble, June 18—F.C.
Rose (H. P.) Countess of Rosebery .. .. .. W. Paul, July 18—F.C.
" " Duchess of Bedford.. W. Paul, July 2—F.C.
" " Harrison Weir .. Turner, July 24—F.C.
" " Penelope Mayo .. Turner, July 2—F.C.
" " Dr. Sewell .. .. Turner, July 2—F.C.
Saccolabium calceolare .. .. Rollisson, Feb. 19—B.C.
Sadleria cyatheoides .. .. Williams May 21—F.C.
Saxifraga calyciflora .. .. Atkins, May 7—F.C.
" (Megasea) purpurascens Parker, April 16—F.C.
Torenia Bailloni .. .. .. Veitch, Aug. 6—B.C.
Verbena Mrs. Emilie Hulter.. Fraser, Aug. 16—F.C.
Wallichia zebrina .. .. Williams, April 16—F.C.
Xeronema Moorei .. .. Veitch, June 4—F.C.
Zamia corrugata .. .. Bull, Jan. 15—F.C.
" lucida .. .. .. Bull, Jan. 15—F.C.

NEW FRUITS AND VEGETABLES

CERTIFICATED BY THE FRUIT AND VEGETABLE COMMITTEE, AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS, 1878.

**** *F.C., First-class Certificate.*

Fruits

Apple Baumann's Red Winter Pearmain .. .. R.H.S., Oct. 15—F.C.
" Dr. Hogg.. .. .. Ford, Dec. 17—F.C.
Melon Dell's Hybrid .. .. Dell, July 2—F.C.
" Netted Victory .. .. Gilbert, July 2—F.C.
Orange, The Long .. .. Rivers, Jan. 15—F.C.
Pear Dr. Hogg .. .. .. Rivers, Sept. 17—F.C.
Plum The Sultan .. .. Rivers, Aug. 20—F.C.

Vegetables.

Cabbage Broccoli, new .. Gilbert, Dec. 17—F.C.
Endive, fine curled Picpus .. Vilmorin, Oct. 11—F.C.
" round-leaved Batavian .. Carter, Minier, Veitch, Vilmorin, Oct. 11—F.C.
" white curled .. .. Carter, Minier, Veitch, Vilmorin, Oct. 11—F.C.
Pea Telephone .. .. .. Carter, June 27—F.C.
Potato Woodstock Kidney .. McKinlay, Oct. 15—F.C.

SPATHIPHYLLUM *v.* MASSOWIA.

(*Concluded from p.* 750.)

I WILL now offer just a few remarks upon Professor Koch's description of his Massowia Dechardi on p. 622. In the Latin diagnosis there is nothing that will separate it from four or five other species of Spathiphyllum, except the words "flores tetrameri," which I cannot reconcile with the truncate gamophyllous perianth and six to eight stamens I have always found in flowers of this plant. In the English description he says, "The short petiole, *such as no other species possesses*, terminates in a large erect blade, which differs from that of all other species, *inasmuch as its greatest breadth is not in the middle but in the upper third*, from which point downwards it narrows gradually into the petiole." The italics are my own. The petioles of the living plants which I have seen vary from 5—10 inches and more in length; now S. Schomburghii, S. floribundum, and one or two other species known to me, have as short or shorter petioles. As for the leaf-blade, I do not say that such an one as Professor Koch describes may not be found on the plant in question, but I have never seen one: the leaves are broadly lanceolate, or elliptic-lanceolate, acute, as described by M. André, and are broadest in the middle part. Professor Koch's description agrees better with S. floribundum (Anthurium floribundum, André), which generally has its leaves broadest in the upper third, and I think it very probable that Professor Koch has confused the two species, and described the leaf of A. floribundum for that of A. Dechardi. The following is a description of Spathiphyllum cannæfolium, drawn up from West Indian specimens; and any one interested in the matter, who will take the trouble to compare my description with Anthurium Dechardi will, I think, come to the same conclusion that I have, viz., that the two are specifically identical.

Spathiphyllum cannæfolium, Schott, Aroideæ, p. 1, t. i.; Prodr. p. 424; S. cannæformе,* Engler, in Fl. Bras., fasc. 76; Araceæ, p. 103, t. 16, f. 2; Pothos cannæfolia, Bot. Mag., t. 603; Massowia cannæfolia, Koch, Bot. Zeit. x., p. 277; Anthurium Dechardi, André, L'Ill. Hort. xxiv., t. 269. Whole plant glabrous. Petioles suberect, deep green, stout, 5—10 inches long (there is one leaf in the Kew herbarium with a petiole more than 15 inches long, but I am not quite sure it belongs to this species), often sheathing nearly or quite up to the geniculus, sheath directed forward, not spreading outwards, the part above the sheath 2—3 lines thick, and probably thicker in old plants, terete, channelled down the face, with numerous grooves down the back; geniculus well marked but scarcely thickened. Blade more or less spreading, deep green above, paler beneath, 10—16 inches long, 3½—6½ inches broad, broadly lanceolate, or oblong-lanceolate, or elliptic-lanceolate, acute or acuminate in a curved line from one-third below apex, gradually narrowing from a little below the middle in a slightly curved line into the somewhat cuneate acute base; midrib and primary veins impressed above, prominent and rounded beneath, where the midrib is grooved like the petiole; primary veins parallel, ascending, curved, 2½—5 lines apart, with usually three slender intervening secondary veins. Scape erect, a foot or more long, 2—3 lines thick, terete, smooth or slightly grooved, green. Spathe 4½—7 inches long, 1½—2 inches broad, oblong-lanceolate, acuminate, flat, ascending or spreading, white on the face, green on the back (always?). Spadix shorter than the spathe, cylindric, stalked, stalk 3—4 lines long, green, flowering part white, 3—5 inches long, 3—4 lines thick; perianth completely gamophyllous, truncate; stamens 6—8; ovary not longer than the perianth, subtruncate, crowned with a sessile 3—4 lobed stigma, 3—4 celled, with two or more ovules in each cell. Odour fragrant. West Indies, Columbia.

Thirdly, I propose to show that Professor Koch is wrong in placing S. Gardneri and Anthurium candidum together as one species. From what he states on p. 622 it is evident that his description is based upon Anthurium candidum, Bull, Cat. 1875, p. 3, t. iii.; though it is strange that he should say, "I sought in vain for this name in his [Mr. Bull's] catalogue," since in the catalogue quoted there is a description and good figure of the plant, and in the catalogues for 1876 and 1877 the description is repeated, but in the one for this year (1878) the name only occurs, the description being omitted. Comparing the two plants I find they have no specific similarity. It may not be out of place to here state that we have at Kew the best set of Gardner's Brazilian plants, with all his original labels, and of Spathiphyllum Gardneri, Schott (Gardner, No. 1867), we have good specimens named by Schott. The differences between the two plants may be tabulated thus:—

S. Gardneri, Sch.	Anthurium candidum, Bull.
Petiole more than 8 inches long (the specimens are not cut full length), the part above the apex of sheath 5—6 inches long, 1½ line thick.	*Petiole* 5—6 inches long, the part above the apex of sheath ¼—1 inch long, ½ line thick.
Blade 10 inches long, 2½ inches broad.	*Blade* 4½—6 inches long, 1—1½ inch broad.

I have not seen the inflorescence of A. candidum, but judging from the figure and descriptions it seems to be much smaller than that of S. Gardneri. Besides the differences in size above given, the leaves of the two species are widely different in outline and venation. From all of which it will be readily understood that the two are distinct species.

When Schott originally described and figured S. Gardneri, *Aroideæ*, p. 2, t. 3, A., the leaf was unknown to him, and I have little doubt that the accurate description subsequently given in his *Prodromus*, p. 425, was made from the Kew specimens. Concerning the leaf of S. Gardneri, Professor Koch says, "The relative proportion of petiole and blade is incorrectly represented by Schott." Now Schott has nowhere figured the leaf of S. Gardneri; but if it is the left-hand figure of pl. 3 of Schott's *Aroideæ* which Professor Koch refers to, it is evident that he has mistaken a back view of the spathe for a representation of the leaf. I also object to the sentence in Professor Koch's diagnosis of M. Gardneri, "Folia longissime petiolata," inasmuch that the word "longissime" should be used with reference to the other species in the genus, or when the blade is relatively very short. Instead of A. candidum having a very long petiole, according to either sense, it has a petiole much less than a foot in length, and about as long as the blade, whereas there are other species in the genus with much longer petioles, and S. longirostre has petioles 3—4 feet long and about twice as long as the blade.

Anthurium candidum, Bull, belongs to the genus Spathiphyllum, and is closely allied to S. Patini (Anthurium Patini, Mast., Amomophyllum Patini, Engl.) The following is a description of it:—

Spathiphyllum candidum, N. E. Brown; Anthurium candidum, Bull, Cat. 1875, p. 3, t. iii.; Massowia Gardneri, Koch, *Gardeners' Chronicle*, n.s., x., 622 (non S. Gardneri, Sch.). — Whole plant glabrous. Petioles erect, 5—6 inches long, green, minutely speckled with whitish dots, furnished to ¾—1 inch below the apex, with a pale whitish green, very open and nearly flat-spreading membranous sheath, 2 lines broad on each side, the part above the sheath very slender, ½ line thick, nearly terete, with a flat, narrowly-edged face, quite smooth; geniculus 2 lines long, and about 1 line thick. Blade ascending or spreading, 4½—6 inches long, 12—16 lines broad, narrow oblong-lanceolate, gradually narrowed to an acuminate apex from a little above the middle, base cuneately rounded from about ¼ above base, bright green above, paler beneath; midrib and primary veins impressed above, prominent and rounded beneath, midrib quite smooth or with faint indications of striation; primary veins ascending, curved, 2½—4 lines distant near the midrib, but gradually becoming closer together near the margins. Scape about as long or a little longer than the leaves, slender, thickened and often curved just below the spathe. Spathe erect or spreading, according to the amount of curvature of scape, oblong-lanceolate acuminate, 3½ inches long, 1 inch broad, white on both sides. Spadix straight, slender, terete, shorter than the spathe, shortly stalked. Columbia (Shuttleworth).

In conclusion I would say a word on the genus Amomophyllum, Engler, in the *Gardeners' Chronicle*, 1877, vol. viii., p. 139. This genus was founded upon Anthurium Patini, Mast., and the characters given by which to separate it from the genus Spathiphyllum are a different shaped ovary with 1-ovulate cells. There is nothing in the shape of the ovary to separate it from S. Lechleri, S. Schomburghii, S. Gardneri, &c., which latter Engler places in Spathiphyllum; and as for the 1-ovulate cells, his observations must have been imperfect, or he had imperfect ovaries, for although I have dissected numerous ovaries taken from several spadices I have always found two ovules in each cell. From the gamophyllous perianth and short truncate ovary of S. cannæfolium, to the polyphyllous perianth and long conical ovary of S. longirostre, there is a gradual transition, and Anthurium Patini is only one link in the chain of species that form the very natural genus Spathiphyllum; its synonymy will therefore stand thus:—Spathiphyllum Patini, N. E. Brown; syn. *Anthurium Patini*, Mast., *Amomophyllum Patini, Engler*. The synonymy of Spathiphyllum floribundum, André, is—*Anthurium floribundum*, André, *Amomophyllum floribundum, Engler. N. E. Brown, Herbarium, Kew.*

* Engler in the place quoted, heads the synonymy of this plant as follows:—"Pothos cannæformis. Curtis, in Bot. Mag., t. 603: Lodd. Bot. Cab., t. 471; Rudge, Pl. Guian.; t. 13; Kern. Hort., t. 416: H B.K. Nov. Gen. et Spec. 1, 62." But neither in the Bot. Mag. nor Bot. Cab. as quoted, is the name Pothos cannæformis to be found—in both it is P. cannæfolia; Kern. Hort., I have not seen, but Pritzel quotes it P. cannæfolia. The P. cannæfolia of Rudge (not cannæformis as Engler has it) is a Philodendron, P. Rudgeanum, Sch., and Engler himself correctly quotes it as such on p. 134 of the same work. In H.B.K., Nov. Gen. et Spec. i. 62 (p. 76 in the Kew copy), the plant is wrongly quoted as P. cannæformis and as this is the only book which Engler marks as having seen, I presume he has simply copied the error, and considered Schott, Koch, &c., to be wrong in writing it P. cannæfolia.

ON THE CULTURE OF PELARGONIUMS FOR AUTUMN AND EARLY WINTER FLOWERING.*

THE large flowering Pelargoniums recognised as early flowering or forcing varieties have been growing in popular estimation for many years, and are now largely grown for their early flowering qualities. Coming into flower, as they do, two or three months before the ordinary stage section, they have for several years past formed a special feature at our spring shows, and do good service to gardeners and others whose business it is to furnish the flowers now so much used on the dinner-tables of the wealthy and in the drawing-rooms of the refined. While, however, their utility as spring producers have been so largely recognised, it seems to me that the same advantage has not been taken of their capacity of producing their flowers in the waning months of the year, I mean from the end of August onwards—a period in which most growers have some difficulty in obtaining that variety and choice of flowers so much sought after. It is then with special reference to this phase of their cultivation that the following observations are directed.

To begin with their propagation. I put in cuttings from March to November. Those I want to have in flower during the months of August, September, October, and November I put in any time from the middle of October to the end of November, and my method of procedure is this:—I have a number of 5-inch seed-pans, drained in the usual manner, and filled up to within three-quarters of an inch of the top with a mixture of loam, leaf-mould, and sand in equal proportions, and firmly pressed down; over this half an inch of clean sand is placed, and receives a gentle watering with a fine rose, and they then stand over until the cuttings are prepared. These I take from the plants which have flowered during the summer, and have been fully exposed to the sun in the open air after being turned out of the greenhouse. The cuttings are made from tops, side shoots, ripe wood with undeveloped wood-buds; and of any variety I want to increase in quantity, I use the roots as well as the branches for purposes of propagation. Previous to inserting the cuttings in the pans prepared for them, they are all sized and sorted into separate lots—*i.e.*, of tops, side shoots, ripe wood, and roots—and planted in pans by themselves, for in rooting I find that one class of cuttings will form roots sooner than another, and it is an advantage to have the cuttings in each pan as nearly of one size as possible. These are inserted about a dozen in each pan, and receive a good watering to settle the soil about them; the pans are then placed on a shelf in an intermediate-house, where they are kept moderately moist until they show signs of rooting, and as soon as this happens they are removed to a cold house, where the only care they require through the winter is to be supplied with water according to their wants, and if any of them threaten to grow ahead of its neighbours these must be pinched back.

The root cuttings require somewhat different treatment. They are first cut into lengths of 1½ inch and inserted round the edge of 4-inch pots, taking care that the thick end of the root is kept uppermost with its top just visible on the surface of the sand. After receiving a slight watering the pots are plunged up to the brim in a gentle bottom-heat and covered over with a sheet of glass just large enough to cover

* Read at the meeting of the Scottish Horticultural Association, on November 5, by Mr. Alex. McKenzie, Warriston Nursery, Edinburgh.

the pot. This sheet of glass should be removed every morning for an hour or two, and great care should be taken in the watering until they show signs of growth, which they will do in about ten days or so. When they are sufficiently established they must be gradually raised out of the bottom-heat and be allowed to stand on the surface of the propagating bed for a few days longer, after which they should be raised up to the glass until they are strong enough to be removed to a cool house. Root cuttings usually send up two or more shoots, the strongest of which should be reserved to form the future plant. Some varieties form most symmetrical plants from roots, others again grow long and lanky, and as a rule, plants grown from roots should not be again propagated from by this method, as the finer sorts have a tendency to revert to their original sorts or to run out, when too often propagated from roots.

In February or early in March the cutting pans are taken to the potting bench, where they are carefully shaken out and again sifted, and potted into 2, 3, and 4-inch pots, according to their size and strength, and placed in a cool house as close together as the pots can stand, but fully exposed to light and air; they receive no other attention than a sprinkling overhead with water when they require it. Towards the middle of April they are removed to a cold frame, and placed on a layer of ashes so wide apart that their leaves do not touch each other. Here they are gradually accustomed to the open air, and after the first week or two the glasses are thrown off during the day, merely protecting them from heavy rains, cold winds, and frost. By-and-bye the sashes are removed altogether, and more room given between the plants. At this stage they are all gone over and each shoot is pinched back to the same length, say 3 or 4 inches from the pot, when the robust character of the plants will cause them to break away at every joint, and by the middle of May are fine bushy stuff ready for more pot-room. They are now shifted into 6-inch pots and returned to the cold frames, the sashes are placed over them, and they are kept somewhat closer, to guard them against receiving a check until they have taken to the fresh soil, giving air of course during the day, and gradually tilting the sashes at night, till they are removed altogether.

They will now be growing vigorously, and for the next month will require no other attention than falls to them in the daily routine of watering, keeping them free from insects, weeds, and dead leaves, and occasionally turning them round to the sun, so that all sides of the plant may be equally matured by exposure to the air and light. This I consider a point of great importance, and one that should never be lost sight of in the case of plants growing in cold frames. By midsummer the pots are full of roots in vigorous action, and the plants are sturdy in constitution, stiff and short-jointed in habit, with leaves clean, thick, and glistening with Nature's varnish. They are now getting ready for their final shift, and we prepare for it accordingly by going over them a week previously and pinching back any shoot in advance of its fellows, or that shows flower-buds prematurely, and at the same time remove any misplaced shoots or thin out where too crowded.

I will at this stage describe the compost I employ both for their final shift and all previous pottings, and as I attach the highest importance to its proper preparation I will endeavour to describe the process at length. The main ingredient is of course good sound loam, which has been laid up for some months previously. This is chopped up with the spade, and spread out in fine weather in a layer of about 6 inches deep. To this I add about a sixth part of fresh horse droppings, or, when it can be got, the sweepings of a horse-shoeing forge, where the parings and raspings of the hoof, along with the filings of the iron, add greatly to the manurial value of the droppings. To this I add another sixth part of leaf-mould. The whole is then mixed together, spread out as before, and turned over once a day, much as a brewer turns over his malt, the object being to expose every particle of the mass to the fertilising influence of the atmosphere.

When it has thus lain and been turned and re-turned for about a week it is thrown into a heap and covered over with mats. Here, owing to the large amount of solar heat absorbed and the presence of the manure, a slight fermentation takes place, which I esteem of great importance in reducing the mass to the proper condition for potting. This compost I use for all soft-wooded plants, and of the thousands I grow annually I seldom have a plant turn sour at the roots. To this I add for Pelargoniums one 7-inch potful of bone meal for every barrowful of compost. The whole is thoroughly incorporated on the potting bench, and is then ready for use.

(To be continued.)

HARDY STONECROPS: SEDUMS.

Concluded from p. 751.

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ROSES OF THE FUTURE.

(Continued from p. 720.)

IN carrying out attempts to obtain new Roses of entirely different types to those now existing, it will be desirable for the hybridist to consider how far the present division of Roses into species is well founded, and whether there are really so many as some authorities assert. In their anxiety for accurate classification, men of science are too apt to give undue weight to those minute differences produced by climate, locality, and the numerous modifications resulting from those occult influences of Nature which produce the changes of organised life. Time was that every little divergence from a normal type was held to constitute a "species;" just as trifling differences are now considered sufficient to justify the claim of varieties to rank as new Roses. The tendency of advanced scientists in the present day is, however, rather to reduce than to multiply needless distinctions, and modern rosarians for the most part are therefore content with assuming the distinct species of the Rose to be only three. These are Rosa simplicifolia or berberifolia, Rosa lutea, and Rosa mutabilis. The two former might probably be reduced to one. A true hybrid—*i.e.*, the outcome of the union of distinct species, such as the mule, for instance, amongst animals—is barren. The same principle prevails in flowers, true hybrids do not bear seed, but the crosses of varieties under proper conditions are more or less prolific. Thus, when we see the immense number of kinds of Roses that seed freely, it is fair to suppose that they have proceeded from the union of varieties, and not of species, because in that case they would have been unfertile, assuming the received opinion to be correct. The authorities therefore who circumscribe the species of Roses have reason on their side. By crossing these, and pursuing the usual course of successive sowings and judicious selection, we might ultimately succeed in obtaining strains entirely novel, and in the direction of the desiderata we aspire to, worthy to rank by the side of the best examples of the kinds we now possess.

Although the production of seed-bearing varieties should be the great aim of the hybridist—using the term in its widest sense—as affording the means of progressive improvement through successive sowings, yet he ought not to be discouraged from also endeavouring to discover genuine hybrids of novelty and quality, even though barren. Even if such are incapable of reproduction, they are not, fortunately, incapable of propagation, because any Rose can be multiplied indefinitely by the operations of budding, grafting, layering, or by cuttings. It is by these means that all our non-seed-bearers have been continued under culture—the charming Souvenir de la Malmaison, for instance, which the writer has never known to seed, or ever heard of doing so. Moreover, these hybrids are just as liable to sport as other Roses—Malmaison is again an example; and such sports, if fixed, are often as valuable as novelties originating in the natural way, of which fact Rose catalogues furnish not a few striking examples.

It will not, however, in all cases, be necessary or even desirable to confine our experiments to the hybridising of so-called species, or of groups of a cognate origin, if our object be the attainment of some definite results. Beyond bearing in mind the accepted canon, that to produce perpetuals, perpetuals must be crossed—and that more doubtful, perhaps, the union of a perpetual with a summer bloomer will produce a summer bloomer only we may diversify our combinations at will. A difficulty, however, meets us here, which is, that so many older kinds, in their day possessing very distinct characteristics, most useful for the object in view, have disappeared entirely from cultivation, or if existing at all, it will be in some public gardens, as mere botanical curiosities. The discovery of the whereabouts of these would require possibly as much research as that employed in the collection of new Orchids from the remote regions of the earth. For instance, who of us moderns have ever heard of, much more seen, the "blue China or Bengal Rose," described amongst the sub-varieties of the "Bengal," and having flowers middle-sized, very double, of a blueish purple? If we could procure this we should have two important steps towards producing that Phœnix of the rosarian's aspirations, a real blue Rose, viz., colour and perpetuality. Continuing blue Roses—which will assuredly appear in answer to the potent spells of

some floricultural enchanter—as the text for the remainder of this paper, let us see what varieties our ancestors of forty or fifty years ago had at command approaching this hue. The following all belong to the Bengal section:—Bella Villaresi, full, light purple; Darius, very double, light violet or lilac; Lord Byron, pale lilac; King of Saxony, deep lilac; Rose Telson, pale violet; Bengal Dido, light lilac; Themis, pale lilac, tea-scent; La Charmante, deep lilac; Beauty of Monza, pale purple, often marbled, deeper shade; Amphitrite, pale violet; L'Argentée, light violet. Berenice, pale lilac; Salicetti, light purple. Violet Bengal (one of the Boursault section) is also given as having purple or pale violet flowers. Other varieties, described in contemporary lists, might be turned up, no doubt, with patient research; but those given are sufficient to show that, at one time at least, "material" existed for approximations towards blue Roses; and it must not be forgotten that approximations are the steps toward final success. If we could obtain any of the above for practical use, the purples and violets would probably be most valuable for our purpose. The violets, however, are the most promising subjects, blue being the largest constituent in the formation of that colour. Those which are seed-bearers should be fertilised with the pollen from some of the bluest tinged of our present dark-purple crimsons, and *vice versâ*. A few years ago there was a Rose, Reine des Violettes, excellently adapted for this course of experiment. Although a vigorous free grower, as it was not a big and bulky exhibition Rose, it was denounced as "rubbish;" it is still, however, quoted in the French lists. Ardoisée de Lyon—with a slaty-bluish flush upon the petals—might also be tried. This also is still to be had at some of the French nurseries, though it made no impression here. Some of our veteran Rose nurserymen—such as Mr. Wm. Paul—could no doubt point out other suitabilities, as well perhaps as where some which have been named could be found. In this course of experiments "colour" is the point first to be tried after, all others being left for future development. Unfortunately the occult causes of the difference of colours in flowers, whether dependent on light, soil, secretive action, or other causes, is imperfectly known; but with the rapid advance of horticultural chemistry in the present day it is reasonable to hope that this portion of culture will soon cease to be as a sealed book. *W. D. Prior.*

(*To be continued.*)

A CURIOUS ONION.

The remarkable Onion of which a figure is annexed (fig. 128), offers an illustration of the power that many plants have of forming adventitious buds when injured. In the case of Celery, we have frequently seen small buds formed at the point where the stalk had been broken. In the Onion before us two bulbs have formed in a similar way, of course at the expense of the parent bulb, which is proportionately weakened. Propagation by leaves depends on this faculty of producing buds in consequence of injury.

BULBS AND FUNGI IN THE NORTH.

When a traveller finds himself in a magnificent city, with stone houses eight and nine storeys high, and where "haggis" is sold in the provision shops, and where "tripe," "hot tripe," "hot tripe suppers," meets him printed at every turn, where in the ancient and venerable and archæological slums he sees "porridge at 8" painted on privileged gates, and where hardy northmen, emerging from "wynds" and "closes," throw glasses of "usquebaugh" down their throats without the glass touching or nearing their lips, then he may feel sure he is in Edinburgh.

There was last week held in Edinburgh a show of fat Christmas oxen, and it was announced in one of the papers that a prize had been awarded for "six bulbs of the Aberdeen Yellow Bullock." This was what might be termed a "floorer" for a botanist, if not for a zoologist; a yellow bullock must be a queer animal I thought, and how could a bullock be raised from a bulb? Had bulbs really been made to jump "at one fell swoop" from the vegetable to the animal kingdom? As the question "What is a bulb?" has more than once been asked of late in reference to a new book termed *The Bulb Garden*, I decided upon visiting the Cattle Show, in furtherance of getting some light on this obscure subject. I searched in vain for a "yellow bullock" or six bulbs of the same animal, and as I was strolling out of the show in despair, down an avenue of cocks and hens and Turnips and Potatos, I stopped to glance lovingly at my early favourites.

I here found that Turnips were termed "bulbs," and that the name "bullock bulb" really belonged to a famous Turnip: here let me quote the name in full, for such as may not yet be fully acquainted with this treasure—"Green-top Yellow Aberdeen Bullock Turnip." One of the 1st prizes for Potatos went to the "Red Bog Earlies," a name too seldom seen in the South. The unsophisticated Edinburghers have a primitive way of fixing their names and labels to their Turnips and Potatos—they are nailed on to the Turnips with rough nails 3 or 4 inches long. In regard to the Potatos these nails are driven right through the Potatos into a deal board beneath. The attendant who drove in the nails seemed every time to exclaim between his teeth, as he gave the finishing blow, "Come on, Macduff."

A Glencorse forester told me a lugubrious tale of



Fig. 128.—Adventitious growth in an onion.

an Edinburgh *savant*, who had recently made a mistake over a fungus, and had been in consequence considerably inconvenienced.

They have a collection of models of fungi and dried fungi at the Museum of Science and Art at Edinburgh, so (being a confirmed fungus-eater) I felt bound to visit it. The collection might be the better for a little revision, so I will venture on a few remarks, and chance receiving a hole from a claymore next autumn at Forres.

1. Morel should not have two l's.

2. The popular name of Clavaria coralloides is not Hercules' Club—the latter name belongs to C. pistillaris, a club-shaped fungus: C. coralloides is like a branch of coral.

3. "All the species of Clavaria are edible!" Are they really! I had some doubts about the yellow-spored species, but it is pleasant to find they are "all edible."

4. "Edible Helvella—Helvella esculenta," is better known as Gyromitra esculenta.

5. "Agaricus ulmarius" is said to be edible and rare in Britain; this is possibly correct, but it is as tough as rhinoceros hide, and has a rank taste. It is not uncommon round London.

6. If Lactarius is given as a genus, why not its twin-brothers Russula and Marasmius? Agaricus emeticus and Agaricus oreades are both quite out of date.

7. Tuber albidum, white Truffle. This is a serious error. Tuber albidum is a synonym for T. æstivum, the common Truffle. Tuber album (not albidum) is the synonym for white Truffle, whose more correct name is Choiromyces meandriformis. But is this plant really edible? If so, certainly only to a favoured few; for Mr. Berkeley, together with Dr. Hogg, suffered some unpleasant preliminary symptoms from eating this fungus some little time ago. The account was published.

8. A string of the edible Boletus bovinus. These fungi look uncommonly like B. scaber.

9. A string of Boletus scaber. These fungi look uncommonly like B. bovinus.

10. "Common Puff-ball, Scleroderma (Lycoperdon) Bovista. Highly digestible when properly fresh." No doubt the "common Puff-ball, Lycoperdon giganteum" is "highly digestible when properly fresh," but the thing exhibited is no Puff-ball, but Scleroderma vulgare. The label might well be altered to "highly disagreeable if not poisonous whether fresh or stale." I believe one enthusiast did once eat a specimen of this fungus, but on my applying to the greatest living authority as to the nature of Scleroderma, he said he would "rather eat a slice of a crocodile." *Worthington G. Smith.*

PLANT PORTRAITS.

Agave Goeppertiana, *Gartenflora*, 1878, p. 331, woodcut.

Aloe Cooperi, Baker, *Bot. Mag.*, t. 6377.—A remarkable Aloe, with long thin linear subulate leaves.

Amaryllis Solandiflora, Lindl., *Gartenflora*, t. 956.

Apple, Princess Mary, *Bulletin d'Arboriculture*, November, 1878.—Fruit medium sized, ovoid, oblong, yellow, red on the sunny side, eye open, stalk short, set in a shallow basin. Flesh white, juicy, acidulous. Season, August—September. A Dutch variety.

Auricula Booth's Freedom, *Floral Magazine*, t. 318.—A fine old green-edged Auricula, with black ground colour and yellow eye. It is a little too uneven in the edge to please strict florists.

Auricula John Simonite, *Floral Magazine*, t. 312.—A remarkable fine white-edged Auricula, raised by the late Mr. John Walker, of Sheffield.

Azalea Duke of Edinburgh, *Florist*, t. 472, August, 1878.—A very fine, free-flowering large-flowered variety, with flowers of good shape and substance, and of a rich salmon-red, the upper side of the flower being moderately spotted with deep crimson. It is an English seedling, raised by Mr. Parsons, and deservedly received a First-class Certificate in 1876.

Azalea Louisa Pynaert, *Revue de l'Horticulture Belge*, September.—One of the largest, if not the largest, double Azaleas known. The flowers are pure white, here and there splashed with red.

Betula alba, var. fol. atro-purpureis, *Revue de l'Horticulture Belge*, August, 1878.—A very dark purple-leaved Birch, raised by Dauvesse, of Orleans.

Buddleia insignis, *Revue Horticole*, Sept. 1, 1878.—A seedling variety from B. curviflora, with spike-like erect panicles of purplish flowers.

Bulbocodium Eichleri, Regel, *Gartenflora*, t. 952.—Leaves three, linear. Flowers two, one hermaphrodite, one male, both white, six-parted, not unlike those of an Ornithogalum. Caucasus.

Calla palustris, L.; Meehan, *Native Fl. U. S.*, t. 27.—An interesting aquatic Aroid, with cordate ovate acute leaves, and white spathes.

Cassandra calyculata, Don; Meehan, *Flowers U. S.*, t. 32.—Shrub with oblanceolate firm leaves and one-sided racemes of small pure white urceolate flowers. It is an Ericaceous shrub, commonly grown in peat beds in this country.

Castilleja indivisa, Engelm., *Bot. Mag.*, t. 6376.—A Scrophulariaceous annual or biennial, allied to Eyebright, 6—12 inches high, leaves sessile, ascending oblong, the upper ones margined with orange-red, and the bracts wholly carmine-red. Introduced and sent to Kew by Mr. W. Thompson, as recently noticed by us. Native of Texas.

Clematis Mme. Emil Sorbet, *Revue Horticole*, August, 1878.—A seedling from C. lanuginosa, and very like its parent.

Diospyros Lycopersicon, *Revue Horticole*, December 16, 1878.—A Japanese Persimmon with

smooth globular fruit, like a Tomato, whence the name, though it surely has no claim to rank as a species.

EUPHORBIA COROLLATA, L. ; Meehan, *Native Fl. U. S.*, t. 28.—A weedy species with forked spreading branches and small flower-heads surrounded by white bracts, whence the name.

FERULA FŒTIDISSIMA, Rgl., *Gartenflora*, t. 944.—A botanical curiosity with trisect leaves with bipinnatisect segments, the ultimate segments oblong, irregularly toothed. A near ally of the plant yielding asafœtida. Native of Turkestan.

FIG COL DI SIGNORA BIANCA, *Florist*, t. 473. — One of the most delicious Figs in cultivation. The fruit is pyriform, with a rather long neck, skin thick, green, changing to yellowish white.

GILIA BRANDEGII, Gray, *Botanical Magazine*, t. 6378. — Stem 6—8 inches ; leaves glandular pilose, elongate, pinnatisect ; flowers 1½ inch, racemose, funnel-shaped, straw-coloured. Native of Colorado. It has the straight glabrous filaments of Gilia and the habit of Polemonium, while in the colour of the flowers it differs from both.

HOUSTONIA CŒRULEA, Linn. ; Meehan, *Flor. U. S.*, t. 25.—A charming little plant, 3—5 inches high, with pairs of oblong spathulate leaves and small tubular pink or lilac flowers, with a four-parted limb and a yellowish eye. Nat. ord. Rubiaceæ.

HUERNIA BREVIROSTRIS, N. E. Brown, *Botanical Magazine*, t. 6379—A succulent Stapelia-like plant, with a distinct tube to the corolla. Flowered at Kew. Native of Graaf Reinet.

HYDRANGEA HORTENSIS, THOMAS HOGG, *Revue de l'Horticulture Belge*, July, 1878.—A beautiful variety, with fine snow-white flowers of large size and substance. Introduced from America by Messrs. Veitch.

IRIS EULEFELDE, Regel, *Gartenflora*, t. 954.—A species with a creeping thick rhizome, short strap-shaped leaves, two-flowered scapes ; falls obtuse. bearded, violet with darker stripes, standard reddish, Native of Thian-Schau (Turkestan), where it was discovered by Dr. Albert Regel.

KOLPAKOWSKYA IXIOLIRIOIDES, Regel, *Gartenflora*, t. 953.—A bulbous Amaryllid, with the habit of Ixiolirion. Leaves linear ; flowers trumpet-shaped, with a long slender tube and a six-parted limb, with six narrow acute segments.

LIMNANTHEMUM LACUNOSUM, Gray ; Meehan, *Flowers of the United States*.—An aquatic, with small mottled heart-shaped leaves and clusters of small white flowers.

LINUM PERENNE, L. ; Meehan, *Flowers U. S.*, t. 30.

MAGNOLIA STELLATA (syn. Halleana), *Floral Magazine*, t. 309.—A beautiful hardy shrub, whose spreading white narrow petaled flowers appear before the leaves. Native of Japan. Introduced by Messrs. Veitch.

MARICA BRACHYPUS, Baker, *Botanical Magazine*, t. 6380—Like M. Northiana, but with yellow flowers ; the segments are barred at the base with horizontal brownish red stripes. Native of Trinidad. Flowered at Kew.

MENTZELIA ORNATA, Torr. et Gray, *Revue Horticole*, November, 1878, p. 430.—A grand biennial with deeply laciniate leaves, and very large terminal white flowers, with a central tuft of yellow stamens. It is nearly allied to Loasa.

PÆONIA MOUTAN ELIZABETH, *Floral Magazine*, t. 311.—A noble crimson variety, considered to be "perhaps the best and freest flowering of the whole list of varieties."

PANSIES, FANCY, *Floral Magazine*, t. 320.—The varieties figured are—1, Lady Falmouth ; 2, Mrs. Postlethwaite ; 3, Mrs. Janneson. These are from Messrs. Downie & Laird, and justify the reputation of that firm.

PASSIFLORA VITIFOLIA, *Floral Magazine*, t. 317.—A brilliant scarlet flowered Passion-flower, which we must suppose to be difficult to keep, as it is an old plant frequently introduced and not unfrequently with a new name. Native of Central America.

PEACH GOLDEN FROGMORE, *Florist*, t. 469.—A handsome Peach, raised at Frogmore between Bellegarde Peach and Pitmaston Orange Nectarine, from which latter it inherits its yellow flesh. The quality is good, and the tree healthy, not subject to mildew.

PEAR MIKADO, *Revue Horticole*, August 16, 1878.—A Japanese variety with very long-pointed leaves, the teeth ending in hairs, and having depressed egg-shaped fruit, with a yellow skin and a long stalk. The quality of the fruit is said to be bad. The flowers are described as of a rosy tint.

PEDICULARIS MEGALANTHA, Don, *Gartenflora*, t. 943.—Leaves pinnately lobed, with crenulate segments ; racemes terminal ; flowers large, yellow. Native of the Himalayas.

PELARGONIUMS, DECORATIVE, *Floral Magazine*, t. 319.—Two glowing market plants, bright in colour and very effective—1, Mermerus (probably Cerberus was intended !) ; 2, T. A. Dickson. Both a rich crimson, the first of rounder form than the second, and with a smaller blotch on the upper petals.

PELARGONIUMS, NEW ZONAL, *Florist and Pomologist*, t. 468.—The varieties figured are Lady Eva Campbell, "in all respects a most charming flower," raised by Mr. Pearson ; and Dr. Denny—the most purple-tinted and nearest to blue of any zonal in existence.

PHILODENDRON SERPENS, Hook. f., *Bot. Mag.*, t. 6375.—A very handsome Aroid, introduced by Messrs. Veitch from New Granada, and well suited for the wall decoration of a humid tropical house. The stem s scandent, rooting at the nodes, leafy at the summit, clothed between the leaves with dense masses of fibrous scales. Leaves 1—1½ foot, oblong cordate, spathe 5 inches long, pale flesh coloured, contracted in the middle, convolute below, open above.

PLATANTHERA FIMBRIATA, Meehan, *Fl. United States*, t. 23.—A fine hardy Orchid, like O. foliosa, but with the three divisions of the lip finely fringed.

POTENTILLA FRUTICOSA, Meehan, *Flowers U. S.*, t. 29.

RED CURRANT, Gögginger's red Pear-shaped variety, *Gartenflora*, t. 955.—A Russian variety of the Red Currant, with pyriform or top-shaped fruits.

ROSE LAURE DAVOUST, *Journal des Roses*, June, 1878.—One of the multiflora type, with numerous small rose-pink flowers, very double and very free-flowering. An old Rose, but a great beauty.

ROSE, MADAME BONNIN, *Journal des Roses*, December, 1878.—H.P., large flowers, well-shaped, very full, bright rose.

ROSE MADAME ROCKER, *Journal des Roses*, August, 1878.—According to the figure a remarkable hybrid perpetual Rose, as full as a Pæony, and not unlike one in colour. It is a seedling from Triomphe de l'Exposition. The flowers measure 5 inches in diameter.

SAXIFRAGA MAWEANA, Baker, *Botanical Magazine*, t. 6384.—A handsome white-flowered Saxifraga of the hypnoides section, described and figured in our columns in 1871. Native of Morocco.

SAXIFRAGA SCHMIDTII, Regel, *Gartenflora*, t. 946—One of the large-leaved forms, like crassifolia, but with denticulate leaves. It is supposed to be a native of the Himalaya, and is perhaps only a form of some well-known species.

SEDUM NEVII, Gray ; Meehan, *Fl. of the U. S.*, t. 30.—A small species with rosettes of leaves and erect forked cymes of small snow-white flowers. Native of Virginia.

TEPHROSIA VIRGINIANA, Meehan, *Native Fl. of the United States*, t. 29.—A charming pinnate-leaved Leguminous plant, with flowers of the size of our Ononis.

TROPÆOLUM LOBBIANUM PERFECTION, *Floral Magazine*, t. 310.—A new seedling, raised at the Bedfont seed grounds. The flowers are rich glowing crimson.

TULIPA ALTAICA, Pall., *Gartenflora*, t. 942, figs. *a, c, g, h*.—A native of the Altai, with the scales of the bulbs hairy on the inner surface, broad leaves with white margins, and small crimson flowers.

TULIPA KOLPAKOWSKYANA, Regel, *Gartenflora*, t. 951.—Flowers small, campanulate, segments spreading, oblong acute, yellow or red. Turkestan.

TULIPA TRIPHYLLA, Rgl., *Gartenflora*, t. 942.—Scales of the bulbs hairy at the tips on the inner surface only. Leaves subverticillate, narrow ; flowers yellow or red. Native of the Steppe.

VERBENA GRUSS AUS ERFURT, *Floral Magazine*, t. 323.—This "Compliments from Erfurt" is described as a thoroughly good bedding Verbena, with flowers of a bright red hue. It has been tried at Chiswick, and the "Compliments" found to be sincere.

VIOLA PEDATA, L. ; Meehan, *Native Flowers U. S.*, t. 26.—A plant well known to collectors but rarely seen in gardens, where V. cornuta has taken its place. The present species has the leaves pedately divided into very narrow segments.

XANTHOSOMA SAGITTIFOLIA, Schott ; Meehan, *Flowers U. S.*, t. 31.—An Aroid with sagittate leaves and white spathes, in the way of Calla palustris.

Apiary.

I THINK I hear most of your apiarian readers saying, as they see in your index "Apiary," What in the world can be said about bees at this season? Well, perhaps not much ; but the interest I take in them, and the sympathy I feel for them, compel me to write on their behalf. When I take a walk across the country I can see a great many stools standing with scarcely a covering of any kind to protect the crown of the "skeps." Now this I think is very cruel ; the crown of a colony of bees of whatever description ought to be kept thoroughly dry. I do not care how much they are exposed at the sides, they will never die of cold if kept dry, especially in straw skeps ; but I am not so sure about wooden ones. I would advise that they should be wrapped with straw. A capital plan, and one I have found most effectual, is to get some roughly-made straw ropes, then beginning at the bottom of the "box" continue rolling the ropes round, keeping the rolls close to each other until you arrive at the top, then fasten the end, place some loose straw on the top, finishing off with a good waterproof covering. Place something heavy on the top of the whole, as a precaution against strong winds. The waterproof covering must be sufficiently large to throw the drip on to the ground. This I consider is a very safe plan for colonies that are wintered in wooden boxes. However, with regard to straw hives it is a matter of indifference, so far as the inmates are concerned, whether the sides are covered or not ; but for the sake of protection to the skeps, those who can find time and material ought to cover them, they will last double the time. But I once more say, above all things keep the crowns dry : damp getting in at the crown will prove fatal to the strongest and healthiest swarms. See that there is no snow left on the hives anywhere, for it is a nasty sopping substance, and bees generally are set down where the sun will strike. The consequence is a little of the snow melts daily, the result being that the skeps are kept in a constant state of dampness—a state of matters which cannot be too carefully guarded against. Another thing I would press on all apiarians, and this perhaps may look a little strange to some at first sight, *i.e.*, if snow lies on the ground do not let a single bee out while it lies, even though it should lie for six weeks ; keep them in, but in stuffing them up take care that there is sufficient air allowed to enter. I know of nothing better for this purpose than a small piece of perforated zinc : the mortality of the bees, when shut up in this way, is not half so great as when they are left to their own way. A great many people instead of shutting them up in a storm turn their entrance to the north. This in my opinion is not a good plan, for they still come out, and when they return they seek the entrance at the original place, and there they perish. A few words to explain the shutting up principle. Whenever snow lies on the ground it is cold weather, but for all that it is often warm for a time about the middle of the day, which has the effect of bringing out the bees as if they were going to swarm. I have gone to see certain apiaries after such occasions, and a sorry sight it was—the snow in front of the colonies instead of being white was actually of a black tinge with dead bees : the moment they alight on the snow they become numb, and never rise. *Borderer.*

A SNOWDROP GUARD.—"One day I was walking with the Emperor of Russia in the Summer Garden of St. Petersburg, when, coming upon a sentinel in the centre of a lawn, I took the liberty of inquiring why the man was placed there. The Emperor did not know. The adjutant did not know. The sentinel did not know, except that he had been ordered there. The adjutant was then despatched to ask the officer of the watch, whose reply tallied with the sentinel's—'Ordered.' Curiosity awakened, military records were searched, without yielding any satisfactory solution. At last an old serving man was routed out, who remembered hearing his father relate that the Empress Catherine II., one hundred years ago, had found a Snowdrop on that particular spot, and given orders to protect it from being plucked. No other device could be thought of than guarding it by a sentinel. The order once issued was left in force for a century." *From the "Memoirs of Prince Bismarck."*

Garden Operations.

FLOWER GARDEN, ETC.

The collecting and storing of the fallen foliage of trees, particularly from park timber trees, is an important operation to be attended to at this season; and it is as well to detach as many hands as can be spared in order to get over the operation quickly, before the leaves become embedded in the grass, or full of snails and other vermin, which is often the case when they are allowed to lie long on the ground either before or after raking up. They are so useful in so many ways, in the hands of practical men who know their value, that it is worth a little sacrifice of time to gather in a good store. They are valuable for mixing with stable manure for forcing purposes, as they serve to moderate the rank heat of the manure, and the admixture retains heat longer than manure alone, which soon burns itself dry; and as pure leaf-mould is indispensable for potting purposes, a good store should be laid up to decay for future use.

A more severe frost than we have experienced of late years is now upon us, and if it continues it will be an important matter to look well forward to see that the means adopted for the protection of plants of doubtful hardiness are efficient, as it will not be too late to increase such protection should the severity continue; but on the recurrence of milder weather such extra protection should be removed, as it is not advisable to coddle them up too much, thereby rendering them more tender, and less able to resist the severity of frosts in spring, which, coming at a time when the vital principle is forcing on the growth, renders them more susceptible of injury than when they are dormant. In the absence of snow, composts of all sorts, as well as the stores of loam, leaf-mould, peat, and manure of which they are formed, cannot be too much turned and knocked about in frosty weather; vermin are thereby routed out, and the soil becomes aërated and sweetened, and thereby far better adapted for cultivating purposes, so that not one of the comparatively rare opportunities when such operations may be carried out under the most favourable conditions should ever be neglected; at the same time composts already prepared for future use may be wheeled out and stored up in the nearest positions to where they will be required in the summer for the various requirements of the flower garden, in order that time may be saved when every day brings more than its share of work. For the same reason, during the prevalence of frost or other hindrances to the regular work of the garden, a good store of hooked pegs for training out bedding plants should be prepared; Birch and Beech boughs, from their habit of growth, are very suitable for the purpose, and neat. The common Brake also furnishes excellent neat and small pegs for the finer divisions of carpet-bedding; these should be stored up in thousands. Such as are used for Roses will require to be of greater length and stouter wood. In addition to these, labels for naming choice varieties should be prepared for future use, and also pegs for marking the situations of herbaceous plants which die down out of sight, as well as stakes of various lengths for tying out plants requiring support. All these and many other operations for the saving of time in the summer, which will readily occur to the practical mind, will find abundant occupation for indoors work during inclement weather. In mild weather the principal operations in the flower garden will be to keep gravel walks well rolled, to sweep over the grass lawns now and then, and to keep them rolled frequently after rain; to continue the digging up of shrubbery borders, so as to bury the fallen leaves, and prevent them from blowing about, as a littery appearance is always objectionable in dressed grounds under any circumstances; and evidences of care-taking in the maintenance of neatness is more appreciated in this dormant season of the year than later on, when so many bright objects of interest commence to develope their beauties, and so charm the mind and relieve the eye by greater variety. Any inequalities in the surface of the lawns, particularly such as interfere with the action of the mowing machines, should be regulated at this season by simply baring the surface with the turfing-iron and removing the humps into the hollows, or otherwise filling up and relaying the turf. The opening year will soon be upon us, and all its daily increasing duties, so that all alterations, whether projected or in operation, should be brought to a close as speedily as possible; nothing militates so much against the perfect keeping of the garden during the summer as the carrying on of alterations until late in the spring—in fact, unless extra labour is put on at that season it is rarely possible to retrieve the lost time until late in the summer, and indeed it is not always that lost time is regained through the season, because the neglect of many operations to-day may only become apparent many months hence. *J. Cox, Redleaf.*

FRUIT HOUSES.

STRAWBERRIES IN POTS.—The state of the weather during the past fortnight being more than usually severe, protection in some form or other will have been advisable for all plants standing out-of-doors. I have noticed on more than one occasion lately that on the advent of severe weather these plants are taken indoors and laid on the borders of vineries and peacheries, where, on account of other occupants, more or less fire-heat has to be used. The balls of earth soon become dust-dry, and are allowed to remain in this state for fear of exciting them into growth before the proper time: a worse condition of things cannot well be imagined. Some varieties of Strawberries require a little extra care in winter, as for instance that grand variety, Sir Charles Napier, which has a tendency to form leaves till late in the season, which do not get properly hardened, and are therefore more liable to be injured by frost. Such plants we generally house first, and others follow, according to their condition and hardiness. All our plants that are housed in pits are kept on the dry side on approaching frost, and are covered up with litter or mats in that state in preference to exposing them to alternate changes by uncovering them daily. Plants standing out-of-doors on a dry bottom simply require a thin coating of dry wheat-straw or other litter strewn over them. Forcing must now be conducted very slowly in the absence of sun and light; a night temperature of 50°, with a rise of 10° through the day, will be a safe maximum for the present. We have still a sprinkling of fruit hanging on autumn bearing plants; these are kept in a dry equable temperature, and will be dispensed with altogether after we make the last gathering for Christmas-day. *W. Hinds, Otterspool.*

ORCHARD-HOUSE.—There is very little that can be done now in the way of attending to the trees. Potting of the fruiting trees ought to have been performed long ago, according to instructions given at the right time. Top-dressing is also performed, or if it has not yet been attended to there ought to be no further delay; and I would certainly advise not to dig down too much amongst the roots so late as this. If certain instructions are given at a set time to do any such necessary work, if it is delayed perhaps two months later than advised, and then carried out carefully in all its details, still the person who gives the advice cannot be held responsible, as much of the success of the subject depends upon its being done at the right time as well as in the right way; and it is certainly not the right time to seriously disturb the roots of fruiting orchard-house trees so late as this. Our own pot trees are still out-of-doors, the pots plunged deeply in cocoa-nut fibre refuse. There is still time to pot up maiden or one-year-old trees from the buds to fruit after having made a season's growth; still I would rather advise potting these in November—about the middle of that month is a good time to do this. If severe frosts continue an opportunity will be afforded to have the house thoroughly cleaned. Our own house is still quite full of Chrysanthemums, and two rows of Strawberry pots have been ranged all round the house. If a house has been started to force a portion of the trees earlier it is very undesirable that too much heat should be maintained; better not exceed 53° at night until the buds are much advanced. Careful attention as to the state of the roots is of the greatest moment.

ORANGE TREES IN POTS.—The temperature of the house where fruit is ripening is 95° at night, and a few healthy trees loaded with their golden globes at this season is a treat too seldom enjoyed. The only insect pests that seem to cause us any anxiety are scale and mealy-bug; the latter never ought to have a chance, as it will not thrive when the trees are at rest, and either of them may be destroyed by washing with soapy water. A correspondent, writing from the west of Scotland for instructions, wants to know where to get the trees, and what is the price? Any respectable nurseryman can supply healthy young plants at 5*s.* each. The best sorts to grow are the Tangierine, St. Michael's, Maltese Blood, and Prata or Silver Orange. Then I am asked if the trees should be kept in the Pine-house all the year round. The trees certainly do well so; one crop of fruit is not gathered before another is in course of development. How often should the trees be shifted? Those frequently repotted have not done so well as trees that have been three or four years in the same pot; healthy and strong development being maintained by surface-dressing. When should the plants be purchased? They are grown in pots, and may be purchased at any season of the year. Yet another question is asked—Will the trees bear in a small state? Yes, they will. Sometimes fruit is borne upon the trees the second year after grafting. *J. Douglas.*

PLANT HOUSES.

ORCHIDS.—During the week just passed we have had on several nights 12°, 16°, and 18° of frost in our immediate neighbourhood; 20° was registered on the morning of the 14th, and during the daytime heavy fogs have almost invariably prevailed, so that the amount of light that has penetrated into our houses, or, in fact, anywhere else just about here, has been very truly reduced to a minimum. Yesterday, the 15th, and to-day we have had falls of snow, so that the cold just now is not quite so intense as it has been; the fog, however, is to-day worse than ever, scarcely light all day. This severe weather has necessitated an extra amount of care and attention being bestowed upon this department, for whilst on the one hand every endeavour has been made to prevent the houses falling below a given point, there is also a danger that by a continuous driving of the heating apparatus the temperatures may advance above what is desirable, and if such a course is allowed the harsh dry feeling on entering the houses will assuredly be the cause of a number of leaves turning yellow very quickly, which must be cut away, whilst another pest, even red-spider, will soon put in an appearance, and permanently disfigure anything it settles upon. Though probably the weather we have had, and even now are passing through, may not have been everywhere the same, there is every probability that, if not just now, before long, severe weather will have to be contended with in almost all localities and situations in these islands; therefore, let the effects of an injudicious course be borne in mind, so that a careful method may still be adopted, and no cause given for the ill-effects and consequences just alluded to. In all things avoid extremes, maintaining a low night temperature in all the divisions. The Odontoglossum-house during very severe weather will be the better if at 7 A.M. the glass stands at 45°. A few degrees even lower than this will do no harm to the majority of its occupants, but at any time all plants are not in the same stage of growth, and just now we find many are only halfway on with their breaks and flower-spikes, and the object should be to adopt that course which will be most certain to ensure success, not how near we may approach danger, and yet find we have been enabled to escape it. Fire-heat in this division must always be kept as low as possible, for among other evil consequences the yellow thrips soon get a hold in the centre of the young growths, and resolutely maintain a footing unless quickly mastered, which can be done either by tobacco-powder blown gently from a duster, or by blowing a little tobacco-smoke into the growths. The Cattleya-house at 50° to 53° will also be sufficiently high during severe frosts, of course advancing several degrees by the aid of the fire; it is, however, certain that where a number of plants are in flower, more especially such Cattleyas as Trianæ, maxima, exoniensis, labiata, Lælia anceps and autumnalis, if the houses are kept too low at night-time, the moisture settles upon them so that they soon become spotted, and do not last nearly so long as they otherwise would. The whole of the plants must now be treated carefully. Let no excess of water be used anywhere; see, too, that the moisture that is sure to collect on the inside of the houses does not drop into the hearts of any of the East India plants, for many fine plants have been injured by this, which may seem a very trifling cause. The greater part of the Dendrobiums will require but a small amount of water; that which is given must be regulated by the condition of the young growths of any of the more forward species, or by the state of the flower-buds as they show along the pseudobulbs. Such species as D. crassinode, nobile, Wardianum, &c., now showing very freely for bloom, must of course be kept a little moist, so that the perfect formation of the flowers may proceed, whilst they are enclosed in the little bracts that first appear when the buds startswelling on the bulbs. D. Falconeri, if not already moved, must now be placed in a cooler house, where the night temperature will run down to 45° or even 40°. Here it must remain for about ten or twelve weeks, after which, on taking it back to the warm house, it will show flower freely along its slender and knotted stems. The success of the species depends in a large measure upon the growth made during the previous summer, for if these are not sufficiently stout the winter treatment can only be expected to develope the latent flower-buds that should have flowered the previous spring. The main essentials for the growing and flowering of this species are heat, light, air, and continuous moisture during the growing summer months; then when the resting period has come round to place it where it can be kept cool, dry, and enjoy plenty of light. Vanda teres must now be stood in a cooler house, and also kept dry. This in some cases is rather difficult to flower. It may be that some plants or varieties are more shy than others, but whether that be so or not all should be grown very freely as regards heat and moisture, and rested in a house where it is much drier and cooler, there remaining until about the middle or end of March, when, on taking it back into heat, it will in most cases show its flower-buds; these in due time will develope into spikes of bloom which will be prized alike for their rich colour, their singular form, and the length of time the blooms will remain fresh and perfect. *W. Swan, Fallowfield.*

THE
Gardeners' Chronicle.

SATURDAY, DECEMBER 21, 1878.

IN our number for November 9 we gave, through the kindness of the Cavalière FENZI, an extract from a letter from the distinguished botanical traveller Dr. BECCARI, descriptive of a GIGANTIC AROID—one whose proportions are so gigantic as to cast all similar productions into the shade. When writing of Corynophallus Afzelii in 1872, p. 1619, we called attention to a West African species of larger dimensions even than the Godwinia, up to that time supposed to be the biggest species, but this and the Godwinia are Lilliputians compared with this new Brobdingnagian. The tuber, as stated in our former article, measures 5 feet in circumference, while the much divided leaf covers an area of 45 feet in circumference! To Signor FENZI we are indebted for further particulars relating to this vegetable giant, and for the accompanying illustration, fig. 127, p. 781. Dr. BECCARI writes as follows from Western Sumatra:—

"The Raffiesia Arnoldi is superseded; it is no longer the largest flower in the world. The giant among flowers is the Conophallus (?) Titanum. Yesterday, September 5, I was able to obtain a flower of this extraordinary plant. In external appearance and in distribution of colour it is much like the flower of Amorphophallus campanulatus, the shape of the spathe being nearly the same. As to its generic character I consider it to be nearly intermediate between the two genera, Conophallus and Amorphophallus; but as I have no books with me I am not able to give any decided opinion on this subject. I have preserved the reproductive organs in alcohol, and I hope to give in due time a full illustration of this plant. The following is a summary description of the flower:—As I have said before, it looks very much like Amorphophallus campanulatus, which is generally considered to be a very large flower, but this new kind is ten times larger. The specimen I examined possessed a spadix 1.75 m. long (nearly 6 feet,) the height of a rather tall man, and this not including the height of the scape, and measuring the length of the flower from the point whence the spathe expands to the top of the sterile appendix. The scape was not much taller nor thicker than the stalk of some leaves (which I found 50 centimetres long and 8 centimetres thick), of a green colour, marked with small whitish orbicular spots. The largest diameter of the spathe was 83 centimetres (nearly 3 feet), and 70 centimetres deep; it is campanulate in shape, with patent and deeply toothed edges, which are also closely crumpled. The deeper portion of the interior is of a very pale greenish colour, but the limb is of a bright black-purple hue. The outside of the spathe is pale green, smooth in the lower portion, but thickly corrugated and crisp above. The spadix, deprived of the spathe, measured more than 1.50 metre (5 feet); for 20 centimetres of its length only it was covered with pistils underneath and with stamens above them, the sterile organs being entirely wanting. The appendix is in consequence reduced to a total length of 1.30 metre, having at the base a diameter of 18 to 20 centimetres, gradually tapering towards the apex, which is extremely obtuse. The surface of the appendix is nearly smooth, but widely corrugated or sulcate in the sense of its length. Its colour is dirty yellow at the base, becoming nearly livid towards the top. The ovaries are purple-coloured, trilocular, or sometimes bilocular, with a single anatropal ovule in each cell. They are free, globose-conic shaped, tapering into a long style, terminated by a globose externally trilobed yellowish stigma. The stamens are sessile, with globose subdidymous anthers, opening by two narrow fissures or pores at the apex. They are of a pale yellow colour. In a former letter I gave the description of the fruit [see p. 596]. I have found lately other specimens, which generally have their scape thinner and shorter than the stalk of the leaves. The first specimen I met with in fruit had its scape already fallen to the ground and putrified, so that I was not able to take its measurement. I have preserved in alcohol an entire spadix with fruits; it is 60 centimetres long, its peduncle being more than 1.50 metre high and 10 centimetres thick. The leaves of the plant, as I said before, are much like those of Amorphophallus campanulatus, but much larger in size."

The accompanying illustration (fig. 127, p. 781) is taken from an original sketch sent by Dr. BECCARI. It will convey a sufficient idea of the general appearance of the flowering plant. It is reduced to about one-thirteenth! It is to be hoped that, more lucky than its compatriot and rival, the Rafflesia Arnoldi, this extraordinary flower will be admired in our stoves sooner than we expected. Dr. BECCARI has succeeded in sending a few tubers, which have safely arrived in Florence and look quite healthy and sound.

Such is the history, so far as we at present know it, of this most extraordinary plant. On looking at fossil remains of plants and animals we are often disposed to say, "Verily, there were giants in those days," but Sumatra may boast of giants still in existence. From the neighbouring island of Borneo an Orchid has lately been imported into this country by Mr. BULL with gigantic leaves "as thick as a board," of which we shall hear more further on.

Meanwhile, in order to give some idea of the enormous dimensions of Dr. BECCARI's Aroid we cite the following measurements from other large Aroids which have come under our notice, and which have been described and figured in our columns.

	Tuber.	Leaf-stalk.	Leaf.	Scape	Spathe.	Spadix.
Conophallus? Titanum	5 ft. circ.	10 ft.	45 ft. circ.	19 in.	3 feet. diam.	6 ft. nearly.
Godwinia gigas*	2 ft. 2 in. circ.	10 ft.	3 ft. 8 in. long.	4 ft.	1 ft. 8 in. diam.	9 in.
Amorphophallus campanulatus†	8—10 lb.	3 ft. 7 in.	4—5 ft. diam.	..	2 ft. diam.	2 ft. nearly.
Corynophallus Afzelii‡	Size of Cheshire cheese.	1—2 ft.	..	..	13 in. by 7½ in.‖	10 in.
Dracontium asperum (not alatum)§	Size of a Turnip.	5—6 ft.	3—4 ft. diam.	5—6 in.	8—9 in.	2 in.

* *Gard. Chron.*, 1869, p. 1330; 1873, p. 73, fig. 13.
† *Gard. Chron.*, 1872, p. 1721, figs. 372, 373.
‡ *Gard. Chron.*, 1872, p. 1619, fig. 343.
§ *Gard. Chron.*, 1870, p. 344, fig. 58.
‖ Usually thrice as large.

—— A MODEL POTTING SHED.—Mr. THOMAS HEWITT, nurseryman, Solihull, is a firm believer in the doctrine that if a man is to do an acceptable day's work in severe weather he requires to be made as comfortable as possible under conditions that will enable him to discharge his task in the quickest and most thorough manner. At Mr. HEWITT's nursery, at Solihull, he has erected a potting-shed some 60 feet in length, answering to the description which heads this paragraph. It is substantially built, and is heated with two lines of 4-inch hot-water pipes, running the whole length of the building under the potting-bench. The house runs about east to west; on the north side the roof is glazed its whole length, and on the south boarded over. At the back of the house are shelves for stacking pots and bins for containing soil, with convenience for washing pots when necessary. In this building, during the coldest weather, the workmen labour in comfort, and under conditions favourable to the accomplishment of a good day's work. What a contrast was here presented to the experience of some of us a quarter of a century ago, when having to labour in old time-damaged packing-sheds and potting-sheds that appeared to have been specially constructed to be as wretched as possible. What was then endured during the winter months is happily unknown to some now; but there is yet great need for better accommodation for indoor work during winter in many nurseries. Mr. HEWITT's dry, light, airy, and eminently comfortable building is suggestive of a good understanding between master and men, and of a sincere desire on the part of the former that the comfort of the workmen shall be promoted as far as possible.

—— BREAKING THE SURFACE OF FROST-BOUND SOIL.—The immense benefit to the soil that is effected by loosening it up, so as to admit of its being frozen through to as great a depth as possible, by which it becomes pulverised to an extent not possible by other means—particularly land that is deficient in sand, and consequently of a retentive nature—is generally known, but not nearly so generally acted upon as it might with advantage be; and in the case of all spare ground that has been ridged up, or dug roughly over, if during keen frost, when the soil is congealed to the depth of 5 or 6 inches, the whole is gone over with a pick and broken up, leaving it as rough as possible, not only will the soil be benefited directly and brought into the best condition for cropping, but quantities of slugs with their eggs, as also the larvæ of such insects as find shelter in the soil during winter, will be killed or brought within the reach of their natural enemies, the birds, which latter will be assisted by the exposure of the vermin brought within reach of their quick eyes.

—— PEAT, SAND, AND LOAM.—We have received from Mr. EPPS, Vauxhall Station, various samples of peat, loam, and sand, which appear to be of good quality. Mr. EPPS states that the peat is obtained from some high-lying land abounding in common Fern, or Bracken, and Scotch Fir plantations, the subsoil of which is sandy and dry, being never under water or soddened with wet. Peat from such a position as this, Mr. EPPS asserts, never becomes sticky, wet, or harsh from too much watering or drought, and we agree with him that these advantages are great over that collected from low-lying heaths and moors.

—— GARDEN WORK.—If severe frost stops the work that constitutes the ordinary routine of garden operations, it at least presents specially favourable opportunities for the performance of much that it would not be so easy to accomplish in mild seasons. For all such work as getting manure or other dressing on to the soil, of removing heaps of accumulated vegetable refuse, or of disposing of masses of soil without doing mischief to the paths, hard frost is an undoubted boon, and cannot be too freely utilised. But the performance of all kinds of pruning operations amongst garden trees, and especially amongst the larger Apple, Pear, and other hardy fruits, is work for which frost presents not only special facilities, but is work that can then be accomplished with greater neatness and comfort. On a dry frosty day there are few occupations more exhilarating than is found in the pruning and thinning of large orchard or garden trees. The work is essentially laborious, and thus conducive to warmth; and if the operator be armed with a medium-sized saw, a sharp billhook, and a stout knife, and the aid of a pair of steps or a ladder, it is astonishing how many trees can be got through in a day. In market gardens especially there is room for the display of taste in pruning, or as it is more correctly described, thinning out. Too often this needful work is sadly neglected, and trees otherwise robust and healthy are brought to a state of comparative poverty and barrenness through the lack of the simple attention involved in a little annual thinning out. Now that hard weather has fairly driven not a few gardeners to their wits' ends to find work for their numerous *employés*, no doubt the claims of the larger fruit trees will receive due attention.

—— KITCHEN GARDEN PLANS.—We are requested to call the attention of under-gardeners, members of the Scottish Horticultural Association, to the fact that plans intended for the competition instituted by the Association must be sent to the Secretary, Mr. JOHN METHVEN, 15, Princes Street, Edinburgh, by January 1 next.

—— NATIONAL ROSE SOCIETY.—The annual meeting was held on the 12th inst. in the rooms of the Horticultural Club, Arundel Street, Strand, the Hon. and Rev. J. T. BOSCAWEN in the chair. The treasurer's account, showing a balance in hand of £25 16*s.* 10*d.*, was read, passed, and ordered to be printed; and the thanks of the meeting were given to Mr. W. SCOTT, the hon. treasurer, for the able manner in which he had fulfilled the duties of his office. The dates recommended by the general committee for the exhibitions of 1879 were agreed to, viz., the Crystal Palace on June 28, and Manchester on July 12. Mr. MCINTOSH was appointed by acclamation a Vice-President, and the committee's officers for the ensuing year were elected. Amongst the important matters decided on were these:—That exhibitors who are not members of the Society must pay an entrance fee of 5*s.*; that the highest number of Roses which amateurs should be required to exhibit should for this year be thirty-six; and (although this was decided at the dinner) that a die should be made and medals offered from year to year at the various Rose shows in the kingdom as funds would permit. A subscrip



FIG. 129.—GLOXINIA MACULATA. (SEE P. 782.)

tion was entered into or this purpose, and was liberally responded to. The annual dinner took place in the evening, the Hon. and Rev. J. T. BOSCAWEN again being chairman. Dr. HOGG occupied the vice-chair.

—— THE FROST IN YORKSHIRE.—Mr. WILLIAM CULVERWELL, writing from Thorpe Perrow Gardens, on Friday, the 13th inst., states:—"We have a terrible storm on now: fortunately we have a good covering of snow; 9° on Monday, 14° on Tuesday, 19° on Wednesday, 23° on Thursday, 20° on Friday, with a blinding fog, which makes it hard to bear." We have thus come face to face with something akin to an old-fashioned winter before Christmas.

—— A "HAPPY" GARDENER.—An itinerant revivalist preacher is going about the provinces, designating himself "the happy gardener." There can be no objection to his doing this, only that it is suggestive of the idea that gardeners are not happy till they become the recipients of a certain set of opinions. We are acquainted with many gardeners who are very happy in their lot, and not at all likely to pose themselves as revivalist preachers. The name borne by this "happy" gardener is not, so far as we know, associated with any record of gardening work worthily done in the past when following his avocation. Was he a failure in this line, and was this the cause of unhappiness in him? If unhappiness is associated with the profession of gardening, the least that he could have done would be to have stuck to his old profession and sought to mitigate something of its unhappy condition. Perhaps his efforts in this respect were not appreciated by his brethren of the craft, and in all probability it pays better to cultivate the moral rather than the material soil.

—— THE EDINBURGH CURATORSHIP.—"Edinensis" writes that some dissatisfaction is felt among practical horticulturists in that city at the alleged nomination of a gentleman as successor to the late Mr. M'NAB, whose attainments in practical horticulture have yet to be tested. Every one who knows Mr. SADLER speaks in the highest terms of him, and there can be no doubt as to his efficiency and zeal in the posts he has hitherto held. Mr. SADLER also has conferred valuable services on the horticultural and arboricultural community, so that there is no doubt that on many grounds his appointment would give satisfaction, the more so as no one can be more familiar than he with the general working of the garden. On the other hand, any deficiency in practical horticultural knowledge would be a very serious matter. Under the circumstances our correspondent suggests that open competition should be resorted to, to secure the election of the best qualified candidate.

—— THE PRIZE COMPETITION FOR MARKET GARDENS AND FARMS.—At the recent meeting of the Royal Agricultural Society it was announced that in the competition for prizes offered for market gardens and farms within the area of 50 miles from the metropolis, two entries each had been made in two classes, and three entries in the other. This is, it must be admitted, an admirable illustration of the proverb, "Much cry and little wool," although it is not improbably a case in which a little longer cry might have produced greater results. There ought to have been a score at least of entries in each class, but as the time for closing entries followed so soon after the publication of the competition, better results could hardly have been looked for.

—— ABUTILON BOULE DE NEIGE, AND EUPHORBIA SPLENDENS FOR CUTTING FROM IN AUTUMN AND WINTER.—How valuable the former of these two plants is for cutting from at this time of the year is shown in a remarkable manner at Mr. T. HEWITT'S nursery, at Solihull, near Birmingham. In a north house was planted out against the back wall some time ago some plants of Abutilon Boule de Neige, and these were brought up standard-fashion behind the plant-stage, and then tied out to wires, much as Peaches are trained in a Peach-house. The plants have broken well into growth, and they bloom with great profusion; and the flowers are much in request, and capable of being made useful in many ways. One of these is to turn the petals back after the Arum-like sheath in the centre has been removed, when it takes the appearance of a beautiful shining white Nasturtium, and is used with Camellias, &c., in the construction of funeral wreaths. In one of the warm greenhouses for growing exotic Ferns for their fronds, a large plant of Euphorbia splendens is planted out in a kind of pit-bed at one end, and is almost constantly in flower, the pretty bright-coloured small trusses coming in very useful for working into buttonholes. In Birmingham, as in other great centres, the cut-flower trade has largely developed of late, and the nurserymen find it necessary to augment the supply. Just now cut flowers are scarce—Camellias, Epacris, early Ericas, Abutilon Boule de Neige, Roman Hyacinths, Bouvardias, and Primulas being the leading flowering subjects.

—— BIRDS AND INSECTS.—One undoubted good has resulted to gardens through the recent severe weather—the birds have been driven to seek for food in unaccustomed places, and have thus got rid of myriads of slugs, snails, and troublesome insects that had taken shelter under leaves, shrubs, and trees. When the birds are driven by hunger they become very anxious and energetic, and accomplish wonders in ferreting out food that would not meet with attention were the weather open. Whether to be taken as indicative of a severe winter or not, there can be no doubt that migratory birds are more abundant in our fields this winter than usual, and perchance it is the case that as mild winters render our own birds less active in the search of food, so also have they, by keeping from us more largely the company of northern birds, been instrumental in adding to the myriads of insects with which we have of late been afflicted. If this be a correct view of the matter, what can exceed the folly and wickedness displayed by those who take advantage of the hard weather to kill and destroy wholesale these, our most useful feathered friends? The flocks of starlings, fieldfares, redwings, plovers, &c., that come South come for food, and they find it chiefly in insect life. What good for us they are accomplishing it is impossible to estimate, but that it is invaluable is beyond doubt. To go forth with net and gun, and slay these birds wholesale may be thought good sport during the coming Christmas season, but that sport brings death to the birds, and life and renewed existence, to work mischief, for myriads of destructive insects. The birds are our best friends. Without them our crops would be ravaged and we ruined; don't let us reward their friendship by killing and destroying them in the cruel and mistaken name of sport.

—— PROTECTIVE TAXES IN GERMANY.—Some time ago we announced that the *Gesellschaft der Gartenfreunde* in Berlin intended to petition the Government to impose a tax on imported flowers and leaves employed for decoration, making bouquets, &c. To aid them in effecting their object the members of the Berlin Society resolved to apply to all the other horticultural societies in Prussia, some 170 to 190 in number, asking for their support. We are pleased to learn that only about thirty of them responded to the appeal. In consequence of the little interest evinced by the provincials in this Berlin cry for protection, it has been decided to let the matter drop for the present.

—— PRODUCTS OF QUEENSLAND.—It is generally acknowledged that the British Colonies made an excellent show of their produce at the recent Paris Exhibition. It was not only in large and striking specimens that the colonies excelled, but also in products, the value of which are perhaps little known beyond their own countries. It is remarkable how the medicinal properties of plants appear to attract the notice of contributors to collections of this kind; thus in the Queensland Court was exhibited a collection of indigenous medicines and tanning barks, gums and resins, essential oils, tinctures, &c. Amongst these latter was tincture of Crab tree (Petalostigma quadriloculare, F.M.); it contains a very powerful bitter principle, and is said to have the same properties as Peruvian bark. From Gelsemium nitidum, Mich., a tincture is also prepared which is said to be useful in neuralgia. Another tincture is that from the so-called Bitter-bark (Alstonia constricta, F.M.) The tree is described as being common in the scrubs, and as having a thick deeply fissured yellow-coloured bark, which has an intensely bitter taste, and is used instead of quinine in fever and ague. From Eupatorium Ayapana, Vent., a stimulant tonic bitter is obtained, in the form of infusion, used in dyspepsia. In the miscellaneous exhibits from Queensland were shown some sticks, both rough and prepared, of the well-known Midgen Cane, which have quite recently been proved to be the stems of the Areca monostachya. Another species of Areca, namely, Areca minor, from Bellenden Ker, Northern Australia, is also said to furnish the Midgen. Of still another cane that has come into commerce in this country recently, considerable quantities having been imported, is known as the Cardwell Cane. On the authority of the catalogue of the Queensland exhibits this is referred to Flagellaria indica, L.

—— A NEW FEATURE IN THE KEW MUSEUM collections is the addition of a fine series of photographic and other views in various botanic gardens of the world, as well as views of tropical scenery illustrative of the vegetation of far-off climes. These views have for a long time been accumulating at Kew, and have been presented from time to time by the respective directors or superintendents of the botanic gardens represented. Many of them have been exhibited in the Museum for some time past, so far as the limited wall space would allow; they are now brought together in one collection and arranged in one of those neat, compact, space-economising stands, which we believe, had their origin at the South Kensington Museum. The collection numbers already over 100 views, comprising a fine series taken in the Botanic Garden, Adelaide, South Australia, showing the Palm-house, Victoria-house, museum, the islands in the lake, the rosary, and other points of interest. Amongst other Australian gardens represented are those of Melbourne and Brisbane: in the latter garden some special plants have been photographed, such, for instance, as Cocos plumosa, Seaforthia elegans, Macrozamia Miquelii and M. Mackenzii; while the large expanse of the lagoon covered with the flowers of Nymphæa gigantea indicates what floral profusion may be met with out-of-doors in climates more favoured than our own. Here we also notice some views of the Queensland Acclimatisation Society's garden at Brisbane. The Botanic Gardens of India are represented by those of Calcutta, Saharunpore, and Bangalore, as well as those of Ceylon. The new plant house at Calcutta, with its singular roof constructed to prevent the ingress of the strong rays of sun and heat, is here shown, as well as the Mahogany avenue and other picturesque points. One feature in the Saharunpore garden, as shown at Kew, is a fine avenue of Casuarinas, forming a splendid shade, a quarter of a mile long, some of the trees being about 100 feet high. In the Botanic Garden, Mauritius, a fine row of tall trees of Oreodoxa regia is shown—the lofty, smooth and swollen trunks, of uniform height and thickness, having a remarkable appearance to those accustomed only to see living Palms in our stoves. The remaining botanic gardens represented are those of Hong Kong, Pisa and Cambridge, Massachusetts, besides the gardens of Government House, Barbadoes, also a fine series of views in New Zealand, Rockingham Bay, Queensland, and in Palestine. It is intended to augment the collection by views of other gardens already in hand, or by those which may be received from time to time. Exhibited in the same case with these photographs is a series of old engravings of Kew Gardens and the neighbourhood, perhaps the most complete collection of the kind ever brought together, and extremely interesting as indicating many of the old landmarks which in another generation might be entirely forgotten.

—— FERMENTS AND GRAPE-KEEPING.—M. PASTEUR read at a recent meeting of the French Academy of Sciences a paper which created great interest, as coming from one who has connected his name for ever with the subject of fermentation. A late celebrated colleague of M. PASTEUR, M. CLAUDE BERNARD, left some notes, published after his death in the *Revue Scientifique*, of Paris, in which he took up the hypothesis of M. BARTLELOT, that the ferment existed already formed in ripe Grapes, and this was supposed to have given useful and unlooked for support to the advocates of spontaneous generation. M. PASTEUR now shows, proof in hand, that there exist no germs of ferment in the juice of Grapes from which the air has been carefully excluded at the time of maturity. The berries, when green, contain no such germ; and if ripened without contact with the air, the ripe berries also contain no such

germs. The juice of grapes so ripened never ferments. Another fact is also brought out which may interest Grape growers, namely, that Grapes thus grown kept good almost indefinitely, although the isolated branch be close to others on which the ripe berries are perishing in the usual way. The isolation mentioned is simply that produced by the glass of a Grape-house or a simple bell or other shaped glass; so that according to this theory the keeping quality of Grapes is in direct proportion with the smallness of the amount of air allowed to reach them from the moment they begin to ripen.* M. BERTHELOT's hypothesis of a soluble ferment existing naturally in the berries of the Grape Vine is declared by M. PASTEUR to be absolutely imaginary.

—— BORNEAN NEPENTHES.—*Der Deutsche Garten*, quoting from another German periodical, makes Dr. REICHENBACH say that a number of new species of Nepenthes, exhibiting the most marvellous and colossal forms, have been discovered in the cold region, at an elevation of 13,600 feet, on Mount Kini-Balu, in Borneo. N. Rajah is mentioned as "one of them." We hardly think it true that he could have said or written such a thing, inasmuch as the extreme height of the mountain is about that given, and only one European, we believe, has reached the summit. It is true that some of the species of Nepenthes grow at a great altitude.

—— PLANT GEOGRAPHY.—The *Sächsische Gartenbau-Vereins-Zeitung* contains a most remarkable article on plant-geography. It is entitled "Self-sowing of Plants," but the gist of it is an explanation of the means by which seeds are conveyed to a distance from the parent, and thus species become dispersed. Under the heading, "Retaining Germinative Force for a Long Period," we are told the seeds of Gourds and Melons retain the power of germination for thirty to forty years, and that many seeds taken from herbaria, eighty to one hundred years old, have germinated, and seeds found in Celtic and Roman tombs 1500 years old grew, and grains of corn which had lain in mummy coffins at least 2000 years were still fit for sowing. Among external agencies are wind and water, and the author gravely asks why could it not be that seeds of plants in the Alps were conveyed by the river and sea to Sweden and Norway, for the species are the same. He has also discovered that several water-plants are common to Europe and Australia, and wishes to know what should hinder us from assuming that seeds of them were carried from Europe thither by the sea. The author of this paper, so rich in new ideas, is the director of a school for artisans at Dresden. This is a case of a schoolmaster abroad in more than one sense of the phrase.

—— SELF-REPRODUCTION OF TREES BY LAYERING.—Many of our readers, doubtless, have seen and admired that fine Beech tree in Kew Gardens whose branches have struck root in the ground, so that the parent tree in now surrounded by a circle of daughters of various ages and sizes, many of them still in organic union with the parent but some of them become independent in consequence of the decay of the branches which gave them birth. Whether the tree received any assistance in the first place we do not know, but most likely Mr. JOHN SMITH, the ex-curator, whose memory is evergreen, could tell us. We are reminded of this tree, one of many favourites we periodically visit at Kew, by seeing a record in the *Botanische Zeitung* of a similar occurrence on Peacock Island, near Potsdam. But this is a Spruce Fir with five daughters. Although this phenomenon is not exactly rare in European forests, it is by no means common, and only possible where trees stand out from others. Dr. SCHUBELER, in his work, *Die Pflanzenwelt Norwegens*, describes several instances, and at a meeting of the Berlin Botanical Society, when a photograph of the Peacock Island Spruce Fir was exhibited by Dr. MAGNUS, it was stated that it sometimes occurs in the Yew, Birch, Juniper, Oak, &c. Usually it takes place only on that side of the tree where they are sheltered from the prevailing winds.

—— INDIAN PRODUCTS AT THE KEW MUSEUM.—The museums of the Royal Gardens, Kew, have been recently considerably enriched by the receipt of a very fine collection of Indian forest products, consisting of woods, Bamboos, fibres, gums, resins, caoutchouc, lac, leaves, flowers, barks, fruits, and seeds. The entire collection numbers over a thousand specimens, the wood series being very complete and extremely well got up. The whole set of products is as nearly as possible identical with that sent to the Paris Exhibition and exhibited there during the past summer, that collection being destined at the close of the exhibition for the French National Forest School at Nancy. These collections have been got together under the special superintendence of Dr. BRANDIS and Mr. J. S. GAMBLE, Assistant Conservator of Forests. These have been collected from all the provinces of India, including the Presidencies of Madras and Bombay. Many of the gums and resins are extremely fine, and some are quite new to the Kew collection.

—— THE HOLLY BANK NURSERY, POTTER'S BAR.—We understand Mr. E. BENNETT, landscape gardener, florist, &c., Rabley, Herts, has taken the extensive forcing establishment, Holly Bank Nursery, Potter's Bar, late in the occupation of Mr. MONRO, in conjunction with his home nursery.

—— CORDYCEPS MENESTERIDIS.—There is a group of fungi which is of such interest, viz., those which attack the living larvæ of insects, or the insects themselves, that it is always with pleasure that we receive any addition to the list, which is already a large one. Baron MÜLLER has lately sent us one



FIG. 130.—CORDYCEPS MENESTERIDIS.

from the banks of the Yarra, near Melbourne, gathered by Mr. C. FRENCH on the caterpillar of Menesteris laticollis, BOISD., of which we give a figure (fig. 130) from the pencil of Mr. BROOME. Unfortunately the fruit is not mature, but this is perhaps of less consequence, as there is so little difference in the several species in this respect. It may be characterised as follows:—*Cordyceps Menesteridis*, M. and B. "Stem slender, attenuated upwards at first with the elliptic rufous head, dotted with the orifices of the perithecia, white and pulverulent."* Stem ¾ inch long, pileus about ¼ inch long, at length sienna-brown, sometimes sending down a long root. *M. J. B.*

—— THE WEATHER.—The report for the week ending December 16, issued by the Meteorological Office, states that the weather is tolerably fair in the western and northern districts, but with occasional showers; very dull and foggy in the south-east and east. Temperature a great deal below the mean for the season, the deficit ranging from 11° in "Ireland, S." to 15° in "England, N.E." and the Midland Counties — the maximum readings seldom reaching 40° except at the south-western stations, and frequently below 30° in the midland and northern counties of England, where also the minimums were often below 20°, the lowest of all being 3° and 9° at Durham and Silloth respectively on the morning of the 14th. Rainfall rather more than the mean in "England, S.W.," but less in all other districts, the amounts being largely composed of hail and snow. Wind very variable; chiefly north-easterly or easterly in the early part of the week, but shifting to N.W. or W. at its close, and generally light or moderate in force.

—— GARDENING APPOINTMENT.—Mr. C. SANDFORD, late gardener for twelve and a half years to the Earl of BECTIVE, at Underley Hall, has recently been appointed gardener to C. P. PHIPPS, Esq., of Chalcot, Westbury, Wilts.

Home Correspondence.

The Hot-water Apparatus. — We have often read of certain boilers doing wonders with little or next to no fire, and it is against this sort of teaching that I wish to protest, as it is very misleading to the amateur, the employer, and often to the gardener. Thirty years' practice has taught me that if you want heat you must have fire, and that the best and cheapest fuel for large apparatus is 4 bushels of coke (broken rather small) mixed with one of coal. The heat is much stronger than when coke only is used, and if the dampers are properly regulated it will not burn away so fast. To say how much an apparatus will burn is a folly, as for instance, say boiler No. 1, will heat 3000 feet of pipe, and do its work well; boiler No. 2, of the same size and make, with 3000 feet, will burn double the quantity of fuel, and then will do its work badly. Is this the fault of the boiler or the fire? I say no, it is not. What is it then? some one asks. I say go and examine how the bad working boiler is set, then examine the pipes, next go and examine the good working one, and have the blunders (if any) in the setting of the bad boiler put right. If there are any bad connections, arrangements, or levels in the pipes, have them put in working order, and always bear in mind that hot water will ascend, but will not go down hill without a large and wasteful amount of fuel. Some will say, that if a particular boiler was put in the place of the one you have it would do two, or three times the work with less fire; this sometimes is the case, but it is only when the pipes are properly arranged, and an improvement has taken place in the setting of the new boiler. As far as the shape of the boiler is concerned I must give the preference to the flued saddle. I should do a great injustice to other boilers to condemn them, as all are useful; but I do condemn the unskilled manner in which we so often find them set and arranged. Independent boilers are the very best for heating 200 or 300 feet of pipe; but it is utterly useless to expect them to do as much as those set in brickwork. On the other hand, it is better to have two boilers than one monster for anything above 2000 feet. In mild weather one can be dispensed with, and at the end of the year you will find that the two have not consumed more fuel than the one monster. I have read of boilers wanting no attention for twenty-four hours: such may be the case in summer, but how different in a cold winter? Whether the boilers are large or small they must have proper stoking and sufficient fuel. All may rest assured that if a boiler is properly set, with the pipes properly arranged, it will do its full amount of work, with a great saving of fuel. It cannot be too clearly understood that the same quantity of fuel that will heat 100 feet of pipe will not heat 1000 feet. I could give many years' account of the quantity of fuel consumed in a year by various forms and sizes of boilers. I shall only add that I have proved the flued saddle the best. If agreeable I should like to have a say on stoking, as this is often a source of failure with the inexperienced. *R. Densham, The Gardens, Leigham Court, Streatham Hill, Surrey.*

[Do so by all means. EDS.]

The Weather.—It will doubtless be regarded as a singular commentary upon my recent observations on the weather that at the very moment they appeared in print we were experiencing the coldest weather and severest frost that has visited us for a long time. Mr. Brumham may well regard this as supporting his theory of weather cycles, whilst it generally tells against my views of the subject. So far I admit that facts are against me. Still a week of cold weather and sharp frost does not make a winter, and we cannot decide who is right or who wrong for several weeks. The present cold may disappear soon and not again return this winter, or it may be but the precursor of even severer weather and sharper frost. What, however, is more to the purpose than the mere fulfilment or falsity of a prophecy is an elucidation of the basis upon which these prophecies are made. Mr. Brumham supports his statement of a reference to dates, which seem to show that severe winters will inevitably recur at certain specified periods, but even if this be exact it does not explain why it is that such severe cold does thus occasionally occur. It is in this practical direction that meteorologists should turn their attention, because we are not content to have a belief or prophecy announced without wishing to know the grounds for making the same. I shall not regret to be shown in the wrong (little as I desire a

* The question naturally arises whether this exclusion or partial exclusion of air during the ripening of fruits in general may not be turned to practical account.

* "Pileo elliptico rufo, primum cum stipite sursum attenuato, albo-pulverulento."

hard winter) if Mr. Brumham or other correspondents will give us a tangible explanation of the fact that whilst nine winters may be mild the tenth shall be severe. *A. D.*

— In the south-east of England the weather has been unusually severe during the last week, and still continues. On Sunday the 8th snow commenced to fall at 6.30 P.M., and in about an hour covered the ground to the depth of an inch; it then ceased and commenced again about 10, and on Monday morning there was fully 3 inches. It appears to have been very partial, as at Canterbury and Herne Bay, each about 12 miles distant, there was no snow. Since the 8th we have had severe frost; on the morning of the 13th the thermometer registered 18°, or 14° below freezing. Monday, the 16th, we had a slight thaw in the morning, rain in the afternoon, and snow at night. This (Tuesday) morning we have again 3 inches of snow, and the thermometer at 26°. *Thos. Woodford, Quex Park, Margate, Dec.* 17.

—— We have had a very severe night of frost. The thermometer showed 28° of frost at 11 o'clock inside our garden walls, and 31° in the park in the open. This morning at 3 o'clock 30° in the garden, outside, 1° below zero. *T. Rowlands, The Gardens, Baddesley Park, Thirsk, Dec.* 12.

—— The weather report for the week ending December 14 leads me to conclude that we are getting frost more severe in this part of the country. On the 11th inst. the thermometer registered 18° of frost, and on the 15th we had 19°. We have had nothing like it here for the last fifteen years, this being considered a very mild part of the county. We have had an unusually large quantity of snow for the past fortnight, and up to the time of writing the weather still continues to be very severe. *S. Salway, The Gardens, Flete, Ivy Bridge, South Devon.*

—— The weather here is very severe for Ireland. I hope some of your correspondents are satisfied—I am more than so, for I cannot get on even with trenching, the ground being so hard. We registered at 7 o'clock on Monday night, 21°; Sunday, 19°; Saturday, 21°; Friday, 20°; Thursday, 16°; Wednesday, 18°; Tuesday, 19°. *John Clews, The Gardens, Headfort House, Co. Meath.*

—— The storm in this neighbourhood has been very severe; heavy falls of snow on the 7th and 8th, followed by hard frost, my thermometer on a north wall in a rather sheltered situation registering 17° of frost on the night of the 11th, 20° on the 12th, and 24° on the 13th. In more exposed situations in the immediate neighbourhood I hear it has been 6° lower. We have been fortunate in having a covering of from 15 to 18 inches of snow, which has protected many things, though I fear many of the large Aucubas, &c., have suffered greatly. *W. J. Watson, Newcastle-on-Tyne.*

Winter Blooming Pelargoniums.—I visited Mr. Cannell's nursery last week, and was much pleased to see his beautiful collection of the above in full bloom at this dull season of the year. A bit of scarlet Pelargonium is always admired in the winter, and Mr. Cannell has a house entirely devoted to them, which I think is far superior to any I have ever seen. Among many others I especially noticed White Vesuvius, which for winter use is a perfect gem, and at the present time is one mass of bloom; its habit and profuse flowering qualities are exactly the same as in the old Vesuvius, and as it produces such an abundance of white blossom at this time of the year it cannot fail to become a favourite for winter use. I also noticed most especially Oberon, Mrs. Leavers, Jealousy, and many others, too numerous to mention. I doubt not that a visit to Swanley would well repay any one who is a lover of winter flowering Pelargoniums. *W. Evans, Gr., Shenstone.*

Potatos to Look At and to Eat.—I cannot agree with "A. D." when he says that cheating and trickery are impossible with his favourite tuber, or that Potato exhibiting opens no door to dishonesty, and men who exhibit have no reason to charge upon it any departure from the highest principles of morality. Were the exhibition table the destination of all Potatos, and were they only to be judged for their good looks, and after that the hog-tub, no harm would be done and probably nobody would take exception to "A. D." or any one else expressing themselves as quoted above. Potatos are principally grown as an article of food, however, and while we have many fine standard old sorts of excellent eating qualities, the public are very ready to grow and to pay a high price for kinds which are represented to be better than the old sorts. Now when a new variety is shown a few times and gets a few first prizes and a certificate, and is after all only fit to look at, not to eat, then on the strength of these prize honours and certificate is sold, and greedily bought by a confiding public at a fancy price of from £2 to £3 per bushel, and found after being grown for a season by purchasers to be not so good as kinds already in their possession, or which could be bought for one-fourth of the money—I should say the matter is more serious than Chrysanthemum trickery, and probably a stronger word would be required to express the difference. In my own case I bought last year three new kinds at fancy prices on the strength of first prizes and certificates. I grew them last season and saved all for seed, to grow next season for my employer's table. On trying them, however, when cooked, I find their good looks are all they have to recommend them, and they are not fit to place before my employer or any one accustomed to such sorts as the Fortyfold Fluke, Regent, Myatt's Prolific or Dalmahoy. Now it appears to me that if Potato censors did their duty by the public they would have two classes of certificates—one, as at present, for potatos grown for their good looks, and the other for first-rate table qualities. The public could then purchase Potatos for either purpose, according as they might want them to look at, or to eat. *Pict.*

Mr. George's Abutilons.—When persons hear or read of these, and are not acquainted with the present new strain, they are apt to associate them with tall lanky objects with two or three flowers at the top. Mr. George, of Putney Heath, has led the way amongst English hybridisers, and even the Continental hybridists cannot be said to be in advance of him. Some of his plants are not more than 15 inches high, and when I saw them at their best some time ago had as many as two dozen flowers open at a time. Some of the larger ones that were planted out and lifted had 150 blossoms. As these were seedling plants we may naturally infer that they will be much dwarfer when grown from cuttings. Mr. George's first step with these was what might be termed a pure accident; his primitive stock were Darwinii and Boule de Neige. The former I believe was the accidental seed-bearer. The seeds were sown and came up as well and as soon as if they had been good seed of Mustard or Cress, and several varieties were the result. Selecting the best of these for further crossing gave good results. A selection of the best six passed into the hands of Messrs. Osborn, and Lady of the Lake received a First-class Certificate at the Royal Botanic. A further cross with the best of these gave another batch, from which the same firm thought fit to select six more, and these will appear before the public in due time. Mr. George has now another batch, and they are those I have already named as being dwarf and floriferous. Amongst the dwarfs is No. 1, a pale pink, and very pleasing; 2, dark pink with magenta veins; 3, pale orange, with dark orange veins; 4, bright carmine, a near approach to scarlet; 5, salmon, with deep red veins. The taller ones are—1, orange-red, all through of great substance; 2, pale pink, with greater substance of petal; 3, salmon-pink, with deep red veins. Mr. George finds the first week in April a good time for sowing the seed. They are sown in pans, pricked off into small pots, and shifted as they require it, until they are in a 32-pot, a fair size, Mr. George thinks, to prove their merits. They have flowered in a 48-pot. At the early stage of their growth they are kept in a temperature of 65° by day and 60° at night, and as the season advances it is not difficult to maintain that temperature until they get into a flowering condition. The plants in flower now were sown last April. They have been in flower since the early part of August, and will be so until June. They are not particular as to soil, but as they are in the same pots so long Mr. George prefers giving them loam and peat or leaf-mould in equal proportions, with a sprinkling of coarse sand. The flowers of these are well adapted for cutting, as they will last quite nine days in water after they are cut. I have some which I carried in my hat for six miles; they were put in water in a room not very far from the fire, and they are now (the fourth day) as fresh as they were when taken from the plant. The length of the footstalk of some of the flowers is quite 6 inches. It is rather singular that though one of the original parents was white Mr. George has only had one white seedling, nor, if I remember right, not a shade of yellow. One might infer that by crossing white and orange, sulphur or shades of yellow would predominate, but such was not the case. *R.*

Another Case of Fraud.—The shameful disclosure recently made by Mr. Ollerhead will, it is to be hoped, be a warning to both judges and exhibitors. Such dishonest practices cannot be too strongly reprobated; they have a tendency to disgust both visitors and honest exhibitors with flower shows. Unfortunately, the system is not confined to Liverpool. In September last a similar instance occurred at a provincial show in the south-east of Scotland. Like that at Liverpool, it was also in a lot which gained the 1st prize; the subject which was operated upon in this case being a plant of Nertera depressa, which was shown in a class for six alpines, but unlike the Liverpool case, it was not detected until the next day. The plants having been left in the exhibition hall over the night, the next morning a gentleman, who had a strong suspicion that everything was not right, in the presence of several onlookers, after lifting off a berry, pulled up a piece of small wire on which it had been stuck, repeating the operation until he had done the same to some half-dozen of them. To show the exhibitor that his fraud had been detected, the berries were replaced on the points of the wires, which were left projecting about an inch above the surface. When he saw that his trick was discovered, he made the excuse that a child had pulled off the berries a few days previously, and that he had only replaced them; but, unfortunately for the plausibility of this account, they were stuck on the part of a plant which could not have fruit on it—the creeping shoots of the same season's growth. What should be done in a case of this sort? *Fair-play.*

An Answer Concerning Pine-apples.—The Enville Pine-apple does naturally possess the least crown of any variety with which I am acquainted. Pits such as those described in your last week's issue by "T. W." naturally possess the chief elements which tend to attenuate and enlarge the crown on Pine-apples—a disfigurement which is most objectionable, and a loss too, commercially speaking. To avoid these consequences, it will, in the details connected with the management, be necessary to insist on a course of ventilation which will dispose of any superabundance of moisture and likewise set the stagnant atmosphere in motion; the plants, "particularly throughout the winter period," should be kept in close proximity to the glass, and not be closely crowded together. The Charlotte Rothschild and smooth-leaved Cayenne varieties are the best to meet the requirements of such conveniencies. The Enville has also a good constitution, and if the ripe fruits can be secured between August and January it comes very fine with a top as wanted. The period which is taken up to develope and perfect a Pine-apple varies considerably according to the season when it is growing, the variety, and other circumstances. In the ordinary way of cultivation a Queen takes about eighteen weeks and a Charlotte Rothschild or smooth-leaved Cayenne about twenty-two weeks. *G. T. Miles, Wycombe Abbey.*

What is a Pompon Chrysanthemum.—I think we find the true Pompon type in Model of Perfection, a variety worthy of a place in every collection; but if Julia Lagravere be included in the Pompon section, then I think there are others that could be quite as fairly termed Pompons, such as Dr. Sharpe, Progne, Alma, Aurea multiflora, and many others. I think Mr. Silver must be in possession of a miniature variety of Julia Lagravere, as he has never succeeded in getting blooms any larger than Mdlle. Marthe. I have had blooms of this variety this year fully 4 inches in diameter, which I think would look very odd if staged amonst Pompons. I think it would be far better if promoters of Chrysanthemum shows would consider the different sections of the Chrysanthemum, and arrange their schedules accordingly; it would be the means of avoiding disputes, such as we frequently hear of. I would also suggest that dressing the blooms of the Chrysanthemum be duly considered, as in my opinion the practice is so far indulged in as to render the exhibition of the Chrysanthemum open to fraud and deceit, to say nothing of the unnatural appearance caused in some cases of what I term over-doing them, shall I say with gum, and portions of other blooms. *E. Morgan, The Butts, Harrow-on-the-Hill.*

Storks and Toads.—At p. 756 of your last issue a method of destroying garden pests by storks is set forth, which is all very well as far as adders, slugs, mice, &c., are concerned; but I regret to see my friends the toads and frogs not only set down as pests, but also to be devoured by the said storks. As far as my experience goes, these friends of mine are valuable as destroyers of garden vermin upon which they entirely live. Would it be possible to "break in" the storks to "'ware frog? or could an indiarubber ring be placed round the bills of these otherwise useful creatures just so far as to circumscribe their capacity for so large a morsel? *C. L., Hounslow, Dec.* 16.

Laurustinus, Berberis, and Rabbits.—Where rabbits abound, and are hard pressed, they eat these shrubs greedily. Box and Yews are far more safe from their ravages, and Rhododendrons are so seldom touched that they may be practically accepted as rabbit-proof. "J. P.," however, over-estimates the value of Rhododendrons as game covert, unless planted thin on dry soil, in which case they often lose many of their bottom-leaves. Pheasants rather shun Rhododendrons, as the density of the foliage keeps the ground moist and cold under them nearly all the year round. So much is this the case that I never remember finding a pheasant's nest, nor seeing a good rise of birds out of masses of Rhododendrons, while I have known several good keepers decidedly object to them as game covert. As underwood, however, where rabbits and hares abound, and plants that will grow freely under the shade of trees, there is no shrub to match the Rhododendron, and of course it is

needless in these columns to write of its beauty as an ornamental plant. *D. T. Fish.*

Dressing Zonal Pelargoniums.—In a recent paragraph an allusion is made to "Carnation dressers and others, who dress flowers in all good faith." May I ask if this "dressing" is countenanced in the Zonal Pelargonium? If so, it is obvious that many who purchase varieties from their appearance at shows will be greatly deceived. My attention was attracted last June to a variety at a London show that had been apparently dressed, and one of the petals had evidently been split in the attempt. I have myself made a handsome flower by everting and reflexing the somewhat concave petals of a medium class variety, but I cannot say that I have looked long, or with any great amount of satisfaction, at the result of my experiment, and however much "dressing" may be allowed in Carnations, &c., I do not think it should be encouraged or even allowed in the Zonal Pelargonium. *J. Norton.*

Keeping Grapes.—When mentioning the varieties of Grapes cut on November 12, which kept fresh and good to the end of April, I named Black Hamburgh as one of them, and it was cut at the same time, but did not keep till the end of April, although one would be under the impression, by the wording. I should have said that the Black Hamburghs were the first used, and they kept well till February; then followed West's St. Peter's and Barbarossa into April; Lady Downe's, white ditto, and Mrs. Pince's Muscat, last cut on April 25. The Lady Downe's, although a looser bunch than its compeer, has all the other qualities. Perhaps the stock might improve it: mine was worked on the Raisin de Calabre. *M. M. P.*

—— It is now ten years since I adopted the system of cutting Grapes and putting them in bottles of water, and for these last few years I have had them nice and plump on May 1—the sorts being Barbarossa, Lady Downe's, and Alicante; for these last seven years' I have had Mrs. Pince's Muscat up to the same date. I have cut all the above Grapes with their foliage on, and cut them without foliage, and found the latter to keep best. A few years ago Mr. Wildsmith—no better authority on keeping Grapes—said, "Cut behind the bunch as far as possible, and leave nearly or all the wood beyond the bunch;" that is the system I adopt, and the time I cut the Grapes is when the foliage has fallen in the month of December. A few years ago one of the best Grape rooms in England was fitted up, and several hundreds of bunches inserted in bottles of water—with their foliage and all, or nearly all, decayed before the present date: my advice is not to leave a single leaf after the bunch is cut. *A. C. L.*

Exhibiting Vegetables.—I hope your remarks on this subject may induce exhibitors to be more careful in arranging their vegetables for exhibition. I think an exhibitor, whether of flowers, fruit, or vegetables, should always bear in mind that his productions are seen to much better advantage when placed or arranged in an artistic manner. Certainly the way in which some exhibitors place their vegetables on the exhibition-table is in no way creditable to their taste. In classes for collections of vegetables at more than one show I have seen the different sorts placed in ("thrown in" would be a more appropriate word) the baskets in a manner to suggest the idea that they had had a severe shaking on the road. Of course there are some exceptions in which the exhibitor has evidently taken some trouble to place his productions so as to be seen to the best advantage, and in which the arrangement would have been perfect had he taken colour into consideration, for even amongst vegetables there are sufficient colours and shades with a little arrangement to give a basket of vegetables an artistic effect. At many flower shows prizes are offered for the best arranged groups of plants—and rightly so, for it tests the artistic capabilities of the exhibitor, and thereby encourages one of the highest arts of horticulture. Now I see no reason why prizes should not be offered for the best arranged collections of vegetables, leaving the sorts, as in the case of the group of plants, to the discretion of the exhibitor. I feel confident it would make the vegetable department of the show much more attractive to many visitors than it is at present. *Edward Halliday, The Gardens, Preshute House, Marlborough, December 3.*

—— It is to be hoped that your remarks on this subject (see p. 694) may lead to a much desired improvement in the mode of showing these indispensable products of the garden. The chief practical difficulty of the tasteful display of vegetables is the danger of hiding up any part of them from view of inspection. Hence the single dish of half-dozens, dozens, pecks, &c., will possibly always continue in vogue, as affording the easiest facilities for inspecting and comparing individual excellence. But associated with these, prizes might be given for the best collections as now, and also for the best collections arranged with most taste. Injustice may often be done by confounding two such separate and distinct matters as the quality of the vegetables and the taste in arranging them. Singularly enough it seems generally found in actual practice that those who produce the best vegetables most frequently exhibit the worst possible taste in putting them up. Having secured substantial merit, it would often appear as if they despised all æsthetic aids in setting up their products. This difficulty was felt several times in judging collections of vegetables during the past season. Seldom, indeed, were the best looking collections really the best vegetables, and yet it seemed a pity that the taste exhibited in some of the ornamental collections should have had to go for next to nothing. Round or oval baskets brought up to a sort of pyramid in the middle or back are generally the most effective. These, formed with judgment as well as taste, may generally be so built up as not only to look extremely well, but also exhibit the greater portion of the vegetables of which they are formed. Those who have not turned their attention to the ornamental arrangement of vegetables will be surprised to find what rich combinations of form and colour may be produced by their skilful massing and artistic disposition. Tomatos, Capsicums, Parsley, and other herbs also give brilliant colouring and almost every hue of verdure, while Cauliflowers, Turnips, and Mushrooms supply the purest white. Much also depends on having all the vegetables scrupulously clean, and each specimen fresh and perfect. Not a bruised nor imperfectly formed root nor a faded leaf should be seen. The basket or tray should also be without spot. The grouping system is also the most effective. By showing each sample in several specimens the effect is better, richer on the whole, and the vegetables are more easily judged. The masses fill the eye better, and quality is far more easily assessed thus than scattered in units all over or through a large group, as the different vegetables sometimes are in collections. Another point of immense importance seems generally overlooked by the usual run of exhibitors—that is, a uniformly high standard of merit in the whole of the exhibits. No doubt this is somewhat difficult to attain, but without it a first place is hopeless where there is any great amount of competition; and not a few exhibitors seem to throw away their chances of success almost recklessly. In dozens of collections one or more vegetables are often hopelessly bad; and could the judges only transfer a single dish of them their awards would not unfrequently be reversed; but twelve fairly good vegetables may often carry off a prize from ten first-rate ones, and two strikingly inferior. It may be noted in passing that Mushrooms are as a rule very badly shown at provincial meetings—huge floppy things like a Highland laddie's battered bonnet, rather than those beautiful white morsels developing from buttonhood into Mushroomhood, delicate as the tenderest chicken and white as a Lily. Another great mistake in exhibiting vegetables is the choosing of them too large, and it often seems as if this rage for size ran to seed in Cauliflowers and Cucumbers. But my main purpose now is to suggest improved modes of showing vegetables rather than that better vegetables should be shown. Nearly all advanced here, and also by yourselves at p. 694, is as applicable to collections of fruit as vegetables. The general mode of showing fruit reveals its quality rather than exhibits to any degree its artistic value as a room or table decoration. Groups of fruit are no doubt far more difficult to arrange than groups of vegetables, plants, or flowers. There is also a great practical difficulty—the danger of injuring the appearance and quality of such fruits as Grapes, Peaches, &c., in any attempts to form them into masses and groups; and yet the attempt should be made. Our leading societies should offer prizes of such value for the most artistic group of fruit as to make it worth the while of exhibitors and artists to compete for them. The ornamental exhibition of fruit is one of those branches of horticulture that is retrograding instead of advancing. By virtually bringing the conservatory or flower-garden on to the dinner-table, the fruit has either been pushed off or into a corner. Anyhow, the dessert, which used to be the main feature and chief ornament, has been pushed into quite a secondary place. Much might be done to develope the artistic value of fruit by giving liberal prizes for the most tastefully arranged groups. The prizes for desserts have not hitherto led to much improvement or freshness in the display of fruit artistically. There has been too much of the butler and far too little of the artist about most of them. Glasses, napkins, decanters, flowers are all very well, but no painter would think of either as accessories to the superb colouring and matchless forms of a rich group of fruit. Now why should not cultivators, who have such an intimate knowledge of fruits, not only imitate but teach artists to paint and group fruits to better advantage in the future than it has ever yet been done on table or canvas in the past? *D. T. Fish.*

Standard Pelargoniums.—Among the many useful things for winter these stand well to the front. On taking charge here twelve months ago I found a lot of leggy plants, and wishing to get rid of them I cut a portion down for propagating. Of others I cleared all the small growths away and saved one strong shoot, about 2 to 3 feet long, took out the eyes up the stem, pinched the top, shook out and potted on, and placed them in a little warmth, where they soon threw out side shoots, and during the summer made fine heads. I potted them again in August, pinched the growths and flowers out, trained slightly and stood them on a hot gravel walk in the full sun, which hardened them well. I placed them in the conservatory in September, where they have flowered profusely and are now full of bloom, especially Vesuvius. Amongst the white Chrysanthemums they are rich. These standards are bedded out largely. In some places I have spent days securing them to stakes, large plants 3 and 4 feet through. Magnificent they are in large beds and borders. Standard Roses are put in the shade with the lasting properties of these standard Pelargoniums. Variegated kinds too look well, and they do not take much heat or room in winter. *W. Ravenhill, Gr., Bowes Manor.*

When to Strike Chrysanthemums.—I should feel greatly obliged if any of your readers could inform me the best time and way for striking Chrysanthemum cuttings for making large exhibition plants. Some recommend putting the cuttings in in November—a practice I have tried, but without success, the plants getting sickly and stunted during the winter months, and unable to make that strong and vigorous growth so essential to good specimens. Others are in favour of striking them in February, and I find this time much preferable to the former, inasmuch as the plants can be kept growing without any check until the flowering season. As I intend growing a large quantity of specimen plants next year I should like to have the opinion of some of your readers before commencing. *A. C.*

Schizostylis coccinea.—Valuable as this Iridaceous plant is for outdoor work, it is far more so for embellishing greenhouses and conservatories at this dull season, where, associated as we have it here with a number of white Chrysanthemums and other light flowers, it has a most striking effect. Grown in the open without protection it blooms too late to withstand the effects of frost and rough wet weather so generally prevalent at this season, but under glass the blossoms expand for weeks in succession, and it frequently happens that when the plants are strong and vigorous, fresh spikes are sent up at intervals during the whole of the winter. So enduring are they in water when cut, that we grow them largely for the purpose, and last year I raised a quantity from seed sown in heat in February, the whole of which flowered finely in the autumn, and have greatly augmented our stock. Those that are the best with us are a lot we kept plunged in pots all summer in a half-shady border, where they were well supplied with water overhead and at the root, which prevented red-spider attacking the foliage, and helped them on wonderfully. Hitherto I had always planted them out, and lifted them again in the autumn, but so satisfactory and superior in every way have these been, that I shall adopt this plan of growing them in future. Although most of them are only in 6-inch pots, they average about twenty spikes each, with more just showing, whereas those lifted have not near that number, neither do they look so fresh and well as the others so thoroughly established. The only drawback to growing them in pots is that it involves more labour, as they require so much water, but any extra attention in this respect is amply compensated for in the extra return the plants make, and the longer period they continue in bloom. The Schizostylis coccinea may be readily increased to almost any extent by division made any time till the spring, and those who are not so fortunate as to have it in their possession will find the present season a favourable one to start with, as a good clump or two made the best use of now, will afford at least a dozen others next autumn. If grown in pots, the most suitable soil is fibry loam, well enriched with mild rotten manure, and if potted in this and stood in a cold frame till the spring, they will get nice hold before plunging them out. During summer they cannot well have too much water, as, like most of the Iridaceæ, they are moisture-loving subjects, and only thrive really well when they get a plentiful supply. If planted out, the best way is to prepare shallow trenches for them, by digging in some leafmould and dung from an old Mushroom bed, in which mixtures they will revel and form fine crowns. *J. S.*

Salvia splendens.—A correspondent remarks at p. 597 that Mr. Roberts, of Gunnersbury Park, prepares his Salvia splendens for winter blooming by planting them out during summer. This I have myself done with half-a-dozen plants, which grew into immense plants, with gross wood and black foliage, but a paucity of flowers as compared with pot-grown plants. These with me have been a mass of spikes since the second week of September. The

planted-out Salvias were taken up in the early part of October, and potted in large pots. These have been of no value yet, but as they get pot-bound, and the wood more hardened, I have no doubt they will be useful later on. These remarks may be of use to those not acquainted with this Salvia, as any who are not may discard such a good thing by the planting-out system, and not obtaining the results which occur from pot treatment, viz., slower growth, shorter-jointed wood, and well-developed flower-buds. Attention to feeding will do this even in small pots. A dusting of soot occasionally will keep the soil free of worms. Red-spider attacks them, and soot-water absorbed through the leaves helps to check it. *W. Ravenhill, Gr., Bowes Manor, Southgate.*

Flowers Least Affected by Gas.—I have found that the flowers of Salvia patens will not stand the gas; Mrs. Marshall Fuchsia, on the contrary, seems to stand it better than anything. The flowers of double Pelargoniums resist its effects well, but the leaves turn yellow in a day or two. *W. Ravenhill, Gr., Bowes Manor.*

The Culture of Apricots.—Mr. Bradley (see p. 697) can hardly do better than make his border from 9 to 12 feet wide, and 2 feet, 30 inches, or even 3 feet deep. A clay bottom may also prove useful on a sandstone base, but Mr. Bradley must be careful not to use too much clay, or he will form a waterproof basin under his trees which will certainly injure them in wet seasons. The clay bottom would in fact be better dispensed with, or a fourth or a sixth part of the clay incorporated with the fibrous loam with which Mr. Bradley proposes to form his border. The trees will no doubt thrive in the new soil, but as the subsoil is warm and dry, if the situation is also warm several good soakings of water at the roots and an overhead sprinkling on the evenings of hot days will help to sustain the health of the trees and enlarge and otherwise improve the quality of the fruit. As to limbs dying there seems no remedy for that but to remove the tree as soon as it developes itself to any serious extent, and plant young ones. This weakness or disease is much more prevalent in some localities and districts than in others, generally it is very prevalent in East Anglia, and my remedy for it here is to plant it out—that is, always have some Apricot trees on hand ready to fill the places of trees wrecked in their prime by limbs perishing. Apricots raised from seed and left to fruit unworked, have fewer limbs than budded trees. I have also found a cooler aspect to check limb-perishing. The trees lose far fewer limbs on south-east and north-west aspects, than on south or west walls. Have others cultivators observed this? It confirms an opinion I have long entertained, that limb-perishing is caused chiefly by an excess of heat, something like sun-scalding, of which in fact the dead or dying boughs seem to afford evidence at the affected parts. This troublesome disease, too, diminishes in intensity as we go further north, which still further confirms the opinion that it may originate in or be intensified by sun-scorching. *D. T. Fish.*

—— Your correspondent, Mr. E. Bradley, cannot, I think, possibly do better than to dig out his Apricot border as he proposes, and work in a quantity of clay, except that in being satisfied with a dept of 2 feet, I should advise going down a yard, as it is the deep roots in a dry time that trees have most to depend on, and none suffer quicker from an insufficient supply of moisture than Apricots. The way we managed with ours here was to dig out the whole of the soil, when doing which we wheeled away from 6 to 9 inches of the gravelly portion at the bottom, and on returning the top, previously dug out, we added clay, as the work progressed, to bring the border again to its original level. This was done by scattering it in regularly amongst the soil as the filling in went on; and so satisfactory has the work been, that we are now busily engaged in serving all our Peaches and Pears in like manner, and hope to continue doing so yearly till the whole is complete. So striking was the difference between trees growing in borders treated in this manner, as to be seen nearly from end to end of our garden; those on one wall looking flagged and distressed, while those on the other portion, having the same aspect, kept their leaves as healthy and fresh-looking as possible. The branches of Apricots will occasionally canker and go off, even in the best of soils, but I have always found them to do so in a much worse degree in such as are light and dry and wanting in calcareous matter. If what your correspondent has to do with lacks this, I should advise the use of a sprinkling of fine chalk in addition to the clay, as lime in some form or other is almost indispensable with this class of stone fruits. It is just possible that an entirely new border is unnecessary, as the clay added will most likely be quite sufficient, with the addition of a few barrow-loads of fresh loam to each tree, to give them a start. This is all we did here, and I find the growth quite strong enough, and the habit more fruitful than if they made more vigorous wood. In digging out the borders I was careful to have the top cultivated soil kept by itself and returned to the same position again. That immediately under is of a yellowish sandy nature, and any soil of this character, with the addition of clay worked amongst it, will grow Apricots well. A good plan in overhauling these is to plant the old trees at wide distances apart, and to place the young ones between, as by so doing there is no loss of a crop, and old trees that get new soil to their roots often take a fresh lease and become more healthy and fruitful than ever. This has been the case with many of ours, and I never like discarding any that have served us well till absolutely necessary to make room for others or the aged ones show symptoms of decay beyond hope of recovery. I ought perhaps to add that the clay we get is of a bluish cast, that crumbles when exposed to the air or frost, so that we have no difficulty if carted when dry in getting it to pieces. This is the kind trees prefer, as that which is yellow and tenacious is not so good, but most pits where brick earth is found yield such as is suitable. From the experience I have had of it in light soils, I am convinced that no labour pays better than that of adding clay, for though the work may be costly at the time, the improvement is not limited to a few years but lasts a lifetime and even for generations to come. Buried some distance below the surface, its absorbent powers are great and it parts with its moisture slowly. Tree roots seem to have a great instinct in finding it out, when they are not slow in threading it through and through with their fibres. On lifting some just lately, and on many previous occasions, I have seen it hanging like Potatos, and so tight that it could not be shaken from them. In old exhausted gardens it has a wonderfully renovating effect, and is of far more value than manure however lavishly it may be applied. If thrown on the surface now for the weather to pulverise, it will be in fine order for digging in a month or two hence, and will then be in proper condition for any plants to feed on and to become thoroughly incorporated with the rest of the soil. *J. S.*

Abutilons.—"R. D." has done good service in bringing before our notice what Mr. Barron is doing in the way of collecting together the different varieties of this most useful genus, so easily grown and so effective in the greenhouse, in the flower borders, and as affording cut flowers. Boule de Neige is, I think, the hardiest of all the Abutilons. It has stood 6° of frost here this season with perfect impunity, and then kept its flowers. It is planted against a wall, and quite unprotected. If a good plant of this were grafted with several grafts of the variegated vexillarium and megapotamicum, what a striking novelty might be produced by the combination. I miss one of my greatest favourites from the assemblage, and one which would, I think, prove the queen of them all. I had it from Messrs. Backhouse, of York, many years ago. It is called A. insigne. I planted it out in a warm conservatory, as I observed it possessed a strong constitution, and it at once commenced growing away vigorously, making growths from 15 to 20 feet long. These I ripened well, and withheld water for three or four weeks in September; then I watered with liquid manure, and syringed often, and was compensated with a profusion of flowers the whole of the winter and spring until I had to cut down the plant in course of preparation for next year. I never failed in following out this plan to secure the same results. The leaves are of the most beautiful green, about the size and similar to Vine leaves. The flowers open quite flat, something like a Convolvulus, the colour being a very bright maroon. They are about the size of a florin, and are produced most plentifully on very long flower-stalks, and when looked up into from beneath are extremely pretty. They are very useful for supplying cut flowers, very effective in any arrangement, and do not soon fade. What an invaluable race of winter-flowering Abutilons might by hybridising come from this and the other members of the Abutilon family now under Mr. Barron's care. *William Payne, Belmont Gardens, Taunton.*

Arbutus Unedo.—In your paper of a late date a writer asks if the Arbutus grows in the North. Of late years I have noticed several shrubs of the Arbutus in gardens about this town, but they are mostly poor specimens. There are, however, two very fine shrubs or trees growing in the cemetery grounds. The largest is about 15 feet in height and about 10 in diameter, with a trunk about 13 inches thick: a grand conical bush. About a month ago it was crowded with its dense panicled racemes of waxy white flowers, with a greenish tint at the tips. Its flowers are falling off now, they cannot stand the winter. You can in the South by far outdo us in the production of the fruit (though it is impossible to beat us as regards the blossoms), for it is a rare thing for us to get a ripe berry from the tree, in fact we never see the ripe berries except those brought from the South. I did gather some of the fruit off the trees in the cemetery, but they were a dullish grey colour, and when bitten into were almost like a piece of wood, and had quite a sour taste, which would impress on us the word Unedo. The trees themselves never take any hurt from the frost. *John Hutchinson, Kendal.*

Arbutus procera.—Having raised seedlings of the Arbutus procera (so called) from the Singleton tree, the fruit of which was sent me in the year 1868, I have strong doubts of its being A. procera. It is rather, I think, A. hybrida or A. Menziesii; at any rate it is quite different in appearance, more especially in foliage, from the A. procera which was under my charge at Riccarton, Midlothian, for many years. This kind also ripens its fruit occasionally, and from which I raised plants. The young seedlings of both varieties are rather tender, but become quite hardy after a few years' careful nursing. This Arbutus is interesting at all seasons: its fine foliage, beautiful white Andromeda-like flowers, and the large quantity of Strawberry-like fruit it bears in autumn, to say nothing of its fine bark (cinnamon coloured), which it sheds every year, should ensure a place for it in every collection. It is remarkable that its stem should feel so cold to the touch in the warmest weather: what will your scientific readers say to this? *Wm. Baxter, Dunrobin.*

Sutton's Primulas and Cyclamens.—I can speak in terms of high praise of Sutton's strains of these flowers. They are very fine indeed. I procured several packets of their seeds of Primulas and Cyclamens. The plants are now in full bloom, especially the Primulas, and I can truly assert that they are the most carefully selected strain I have ever grown; one and all are as true as possible, and the blooms of the Primulas are as large as two-shilling and half-crown pieces, and some even larger. There is not one bad flower in the whole sowing, and the habit and constitution of the plants are all that can be desired. They have been greatly admired. *J. Clarke, Gr. to Lord Hastings, Melton Constable, East Dereham, Norfolk.*

The Best Season for Planting.—The letter of your correspondent "J. S." at p. 567, like all the communications on the subject of planting that I can remember, is merely an expression of the writer's opinion without any facts to support it. "J. S." says that he prefers April to September for planting trees and shrubs, because in the former "genial showers and night-dews come to our aid" . . . "whereas in September and October the air and land are sometimes very hot and dry." Now as my own experience goes entirely with the old saying, "Plant a tree in autumn, and command it to flourish; plant it in spring and entreat it to live," it appeared to me to be worth while to ascertain at which season the atmospheric and other conditions were most suitable for planting. As the amount of rain that falls during and after the operation is probably the most important element in the question, I have taken from Mr. G. J. Symons' valuable *British Rainfall* the average of seven years' fall for the months of April—May, and September—October at six stations, representing both sides and the centre of England. The result is as follows:—

	April—May.	Sept. — Oct.	Ratio.
	Inches.	Inches.	
S.E., Kent (Hythe) ..	4.41	7.43	100—167
N.E., Yorkshire (Pocklington)	4.24	7.44	100—175
S., Central, London (Camden)	5.31	5.59	100—105
N., Central, Leicester (Loughborough) ..	4.06	6.24	100—154
S.W., Devon (Dovey Tracey)	5.67	10.10	100—178
N.W., North Wales (Port Madoc)	4.83	11.49	100—238

I have been limited in my choice of stations to those in which the monthly rainfall has been given for the whole seven years. It will be seen from the above that the rainfall in September—October largely exceeds that in April—May, especially on the western side of the island. The cold drying east winds that usually prevail in April, and constitute the so-called "Blackthorn winter," are certainly not favourable to newly planted shrubs. Another important element in the question is the temperature of the earth, for I apprehend that a warm soil at the time of planting with rain to follow is the best condition that we can have. The diagram enclosed gives the result of observations carried on at Greenwich in 1874. The depth (3 feet) is rather too great for the majority of shrubs, but as the next shallower is only 1 inch it is the best obtainable. It will be seen from this that the temperature is about 10° higher in September than at the end of May, and though the diagram must be taken for what it is worth, representing only one year and one variety of soil, yet there is no reason to suppose either of these to be exceptional. The rapid fall in the earth temperature after October is worth notice, and probably points to the unadvisability of planting too late. The

conclusion I draw from the above data is, that as a rule it is better to plant evergreens in September than in April, except perhaps in cold and retentive soils in the central or eastern parts of the island, and even then only when care in the way of mulching and watering can be given for two or three months. *Alfred O. Walker, Chester.*

Severe Winters.—I observe a correspondent in your issue of last week speaks of the winters as not being the same as they used to be, and that they are in general milder. This I believe to be a complete mistake. In an old number of, I believe, *Chambers' Journal* of about forty years ago I met with an article on the subject of the weather, in which the writer stated that people were saying that the winters in their time (*i.e.*, in 1830) were milder than when they were boys, and that they remembered the snow piled up many feet high, and the splendid skating they had in those days. The above writer goes on to say that this was a complete delusion, for if an average of fifty years or thereabouts be taken no difference is perceptible. The fact is, that every ten or fifteen years there comes a severe winter, and we remember these severe ones, but we forget the mild ones. The best proof that our winters are usually mild is to be found in the tables of temperatures, from which it will be seen that on an average of sixty years the average coldest day, which is about the middle of January, is 4° above freezing-point. The average temperature of January is more than that. Julius Cæsar it was, I believe, who said that "Britain has not the warmth of summer of the Continent, but neither has it the cold of the winter." *T. W.*

Pears for Late Use.—I am glad to see that some at least of your correspondents come forward, and give their experience of the value and quality of Pears for late use, for, except Grapes, Pears are unquestionably the most important of any fruit grown, and the principal things many have to depend on for supplying dessert after Christmas. Anything therefore that will add to our knowledge of and better acquaintance with the sorts most suitable for late use cannot be without profit to numerous readers of the *Gardeners' Chronicle*, especially just at this season when the want of good eatable Pears is brought home to us, and the time of year is here to set about rectifying the deficiency by planting—an operation that should be taken in hand as speedily as possible. It would be a great mistake, however, to uproot old trees that are in a healthy condition, even though the kinds may be of the most worthless description, for, being already established, they form the best of stocks, and are in full bearing in a quarter of the time it takes to get a crop from any young ones brought in from the nurseries. Not only is time gained, but many of the sorts are much improved by being double worked, and more particularly such as are on the Quince, where strong growing varieties appear to act as buffers between. The credit of finding this out is, I believe, due to the late Mr. Rivers, who was a most keen observer and the greatest pomologist we have had. [A very old practice, revived by Mr. Rivers. Eds.] It is a well-known fact to those conversant with fruit culture that Pears are about the most capricious things grown, and that those which are all that can be desired in one part of the country are comparatively worthless in another, or what may be good in one county is inferior in the next adjoining, and even in different gardens not far apart. This diversity of quality arises from many causes, the principal of which are soil and aspect, both having a great influence on the flavour of Pears, as well as on their texture and flesh. Kinds that would be rich, smooth, and buttery in warm well drained soils invariably come hard and gritty in those that are of a reverse character; but the greatest factor in improving their quality is plenty of sunlight and air, the solar rays converting the crude juices into saccharine matter, and preventing those hard woody formations that occur near the core when conditions of climate or soil are unfavourable. It often happens that Pears which are good in a garden one year are just as deficient the next, although gathered from the very same trees, and at the proper time, so much effect has a fine or an unfavourable autumn to do with them. That aspect has a potent influence on fruit growing on the same tree is exemplified here in the case of several on west walls, over the top of which their branches are trained; and so great is the difference in size, colour, clearness of skin, and richness of flavour, that there is no comparison between the two. Some of this difference in favour of those on the sunny side is of course owing to the better position they occupy by being principally on the ends of the leading shoots instead of on spurs lower down, where they would not get so well fed, but more of their improved appearance and quality results from the extra light and warmth they enjoy just at the time they are finishing off. Another striking instance of the effect aspect has on Pears in the same garden came under my notice some years ago, when having to put up a Peach-house on a wall where a Duchesse d'Angoulême was growing, we removed the tree to a fresh position, where it gets much less sun, since which time the fruit has, although considerably larger, been quite worthless except for the purpose of cooking. Before this change of situation took place they were of medium size for that variety, always very russety and highly coloured, the flesh richly perfumed, and in every way most excellent; whereas now they are large, green, and coarse, as are also those we get from pyramids, though generally these are somewhat better than the one on west wall already alluded to. It just comes to this, therefore, that those who would have this superb Pear what it ought to be must grow it in a south or sunny position to get it up to the mark; and the same may be said of many more of the sterling sorts that we see so plentifully in Covent Garden. Take the Chaumontels, for instance, that are generally imported from the Channel Islands, and nowhere except in the most favoured localities in England, or under some special treatment, such as that recorded in the *Gardeners' Chronicle* of the one at Acton, is that particular kind of much value as a dessert fruit. Here in East Anglia, although our subsoil is of a very sandy nature, and the climate good, we never get Beurré Rance, Easter Beurré, or Ne Plus Meuris in any way equal to what they are grown in the South. The best with us at Christmas is Glou Morceau from a tree on a wall with a south-east aspect, the fruit from which are beautifully clear, and the flesh so smooth and soft as to melt in the mouth. After these are over comes Josephine de Malines, the only fault of which is that it is rather small and slightly astringent in flavour, but for all this it is by far the best of its season. Our next standard variety is Bergamot Esperen, a delicious late Pear, and these two kinds we grow in quantity as they usually serve us well. Passe Colmar is likewise a favourite here, and in fine seasons is rich and juicy, but this season they are not equal to those we have had in other years. *J. Sheppard.*

Bolbophyllum khasyanum: Cypripediums.—I send you by this post a bloom of Bolbophyllum khasyanum similar to those I sent Professor Reichenbach, whose observations you have printed; also flowers of Cypripedium insigne, imported with the above, now bringing eighteen blooms. You will notice it is much smaller than the usual type, lighter in colour, whilst on the upper sepal the white extends much lower than is usually the case, and being such a clear pure white it has a much more lively appearance than the old variety, though that is much grown and a universal favourite. I have a variety also in flower similar in size to the one sent, but much darker than this; this, however, is an established piece, and is to be met with in a few establishments. I also send flowers of Calanthe Veitchii superba, a fine variety, of which we have a quantity in flower just now. Long spikes are produced, and the whole spike when in bloom has a very much more beautiful and cheering effect than the pale and dull coloured variety often to be met with. I was much pleased to hear of Messrs. Veitch's new C. Sedeni, and congratulate them on their success; I, myself, four years ago fertilised a bloom of the C. Veitchii superba sent with C. vestita lutea and seed was produced which I in due time sowed, and raised a number of seedlings. I looked to getting at least something distinct, and now, after waiting just four years since the cross was effected, three of the bulbs flower, and the results are the blooms sent. The strange thing is that C. Veitchii should produce the seed and from that pod the yellow and rose varieties of C. vestita should have been produced. I began to fear that C. Veitchii would have been no use for fertilising purposes, but find that it is as effectual in that respect as any of the species that have been tried before. C. Sedeni, I should imagine, must be a very fine and distinct thing, and it is a great encouragement to us all to try again. *W. Swan, Oakley, Fallowfield.*

Carbolic Acid as an Insecticide.—My experience teaches me that sulphur, no matter how used and in any form, is in no way fatal to the red-spider. An eminent surgeon in London, whilst on a visit to me, told me he had used carbolic acid water in spray to destroy aphis on his pot Roses and other flowers with unqualified success; thereupon I tried the plan to some Cucumber leaves, with the same marked success. My belief therefore is that carbolic acid water, not too strong, say one part of the acid dissolved in an equal part of glycerine mixed with forty of pure water, is as effectual an insecticide as sulphur is an antidote for mildew. My reason more especially for writing to you is to ask for the following information:—Is it your opinion that the solution of carbolic acid, of the strength I have named, and syringed on the surface of infested Vine leaves, even should the bunches be hanging, would prove in any way detrimental to the fruit or leaves of the Grape Vine in growth? My Vines were most terribly afflicted last season with red-spider, would adding carbolic acid to the dressings and washings be detrimental to the rods? also washing the glass and woodwork of the vinery with carbolic acid soap. I am convinced that the remedy will destroy and prevent the ravages of the insect. *W. E. B. A., Faversham.* [Carbolic acid is no doubt a most valuable insecticide, but we have no practical experience on the precise points raised by our correspondent. We may refer him to the statement made at the meeting of the Scientific Committee on November 19, p. 667; and to the letter on Soluble Phenyle on p. 696. We can only suggest that experiments as to strength should be made with plants of little or no value, to begin with. Eds.]

Paulownia imperialis.—At p. 760 reference is made to the Paulownia imperialis. It may be of some interest to know that there is, or was a year ago, a splendid specimen of the above growing in Ashtead Park, near Epsom. Height about 20 feet, with fine spreading branches. It was planted some thirty years ago, I believe soon after being introduced into this country. Small hard knobs generally form about this time of the year, and unless severe frosts set in about March or April the tree never failed to flower freely. For the last twelve years it has only missed flowering twice, when I observed that the spring frosts had destroyed the flower-buds. It usually flowers at the end of May or the early part of June. It has beautiful large foliage, somewhat resembling the Catalpa; the flowers are of a lilac colour, and have a Gloxinia-like appearance. *Thomas Cardon.*

Mistleto on Portugal Laurel.—Among the many trees on which the Mistleto has been noticed growing I do not recollect having seen the Portugal Laurel mentioned. In the year 1857 or 1858 a large Portugal Laurel was cut down in the garden at Eastwell Park, near Ashford, Kent, on which was growing a fine piece of Mistleto. There is a great quantity of Mistleto in Eastwell Park, especially on the Lime and Whitethorn trees, but during a residence of eighteen years I only saw that one case of its growing on the Portugal Laurel. *Thomas Woodford, Quex Park, Margate.*

FORESTRY

Although for the present all works of tree planting are completely suspended, yet it is well to be prepared and ready for active operations when the weather again proves favourable for the work. In my last article I endeavoured to show some of the numerous advantages of autumn or spring planting of small forest trees, and I shall now state a few particulars respecting the removal and transplanting of large ones, such as are usually above the size found in public nurseries but lifted from amongst other trees in plantations, or single trees removed from one place to another, to produce some of the varied desirable results arrived at by such undertakings. It may be stated in the first place that the greatest disappointments I have met with in planting large trees (that is, trees from 12 to 20 feet high and upwards) have arisen from the fact that the roots with which the tree was lifted underwent decay in its new situation. After witnessing the ineffectual yet repeated efforts and struggles of transplanted trees of various species to make progress and start into growth I have dug them up, and found that in almost every case of failure the cause lay in the decay and rot of the principal roots, so that the only source whence nourishment was procured was through a few small fibres at the base of the stem, quite inadequate to sustain a tree of such large proportions with food, and consequently the branches gradually died, as also the upper part of the stem. When a tree is removed with a ball of earth large enough to include in it sufficient roots for absorbing its requisite sustenance the results are favourable and usually satisfactory; but when, on the other hand, the earth has got detached so that the greater part of the roots are bare and exposed, and consequently have on being planted to come into immediate and direct contact with soil other and different from what they had grown in for years, they almost invariably rot and die away, and an entirely new class of roots has to be formed from the lower part of the underground stem suited to their new soil and condition. Now it is very evident that in order to secure successful transplanting one of two things requires to be done, namely, either to remove the tree with a ball of earth which includes abundance of roots, or, failing to do this, to put the bare roots under such favourable conditions as to food, &c.,

that they will not die and rot away. Two cases of interest may be quoted which throw some light upon this important subject; one was the lifting of some large-sized shrubs and ornamental trees for the purpose of building a house upon the site. This was done in July, 1857, in the following manner. Most of the plants had no earth-balls attached to them, and not many fibrous roots, the work being done with common unpractised labourers, who by no means over-tenderly handled them. On their removal they were planted into a large heap of half-rotten leaves, with a spadeful of sharp white sand sprinkled amongst what immediately came in contact with the bare roots, and were at the time of planting, and occasionally afterwards during summer, well watered. Not one of the plants died, or indeed lost a single branch or twig. I did not see them removed to their permanent situation, or know how they afterwards succeeded, as I shortly thereafter left the scene of operations and the district as well. The other case to which I refer was the removal of an Araucaria 10 feet high, and well proportioned. The soil in which it grew was clayey, and the tree consequently lacked small fibres. A trench was dug round it the year previous to removing, forming a circular ball 4 feet diameter. The digging round stopped its growth almost entirely for a year, and some of the lower branches withered and consequently have never again recovered. When dug round the trench was filled with leaves partially decayed, with a mixture of sharp sand sprinkled amongst them. On opening the trench for removing the tree it was found that the extremities of the cut roots had made some fibres, and these were carefully guarded against injury on the transit of the tree. On transplanting a similar mixture of leaves with sand was again used, and during that and the succeeding summer it was watered once or twice a week in dry weather. The tree is now growing rapidly, and will soon to all appearance make up for the interruption it sustained during the process of removing and transplanting. Being in the practice of transplanting from fifty to a hundred trees, or thereby, of large size, every season, I find that those dug round and removed forthwith to their final destination succeed upon the whole fully better than those dug round and prepared. In the latter case the check first given by cutting the roots, and then by removing the tree before it has regained its former vigour, produce worse results upon the future health of the tree than one though somewhat severe check for all given by removal. This, however, is a safe guide in transplanting or removing any tree, namely, not to attempt the operation with any tree, from whatever cause produced, that is at all in a sickly condition; and again, fast growing trees should only be planted in soils that will produce rapid and luxuriant growth—the Poplars, for example, should never be planted in light or poor soil, nor the Norway Spruce upon other than soft, loose, and cool soil. The Birch luxuriates in sand, and succeeds well upon the site of an old turf dyke, and dislikes anything rich or stimulating. Oak trees and Thorn hedges appear to relish limed soils, while the Rhododendron and probably all species of Coniferæ are poisoned by it. *C. Y. Michie, Cullen House, Dec.* 16.

Reports of Societies.

Royal Horticultural: *Dec.* 17.—Sir Trevor Lawrence, Bart., M.P., in the chair. So few persons were present at the afternoon meeting that only the usual routine business was transacted; and the meeting broke up after the Chairman had paid a well-merited compliment to Messrs. Charles Lee & Son for a remarkably effective group of hardy ornamental-foliaged plants, exhibited by them in the entrance court.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker, K.C.S.I., in the chair.

Nomenclature of Garden Plants.—Some conversation took place as to Dr. Masters' paper on this subject, read at the last meeting; but it was decided to postpone the discussion until the paper was printed and in the hands of the Fellows.

Monstrous Vegetable Marrow.—Dr. Masters showed, on the part of Mr. Hepper, The Elms, Acton, a dried fruit of a Vegetable Marrow, raised on a long stalk, such as that which supports the male flower. As the specimen was now dry and detached from the vine, it was not possible to give the correct explanation of this singular specimen.

Conophallus? Titanum.—Dr. Masters read a letter from Cav. Fenzi of Florence, giving further details as to this gigantic Aroid. (See p. 788.)

Mistleto.—Dr. Masters contributed on the part of Mr. Corderoy of Blewbury, Didcot, specimens of male and female Mistleto, supposed by the sender to be parasitic the one upon the other; the female branches are shorter and closer in habit than the male, which are long and whip-like. The specimens were referred to Rev. Geo. Henslow for examination and report. At one of the meetings of the committee in 1869 similar specimens were shown, which were considered to be illustrations of monœcism (see Masters' *Vegetable Teratology*, p. 509).

Dried Bananas.—Mr. G. F. Wilson exhibited specimens of Banana fruits, peeled and dried in the sun.

Beetle in Ascension.—Mr. MacLachlan reported that the beetle which causes great injury to the Vines in the island of Ascension was Siderodactylus ornatus, a beetle allied to Cetonia.

Mokurrus Resin.—Dr. M. C. Cooke showed specimens of a substance used in India as an astringent, the source of which had hitherto been a subject of dispute. It has, however, been recently ascertained by Mr. Baden Powell to be the produce of Bombax malabaricum. The nature of the substance is still doubtful, as there are no traces of insect-puncture, nor is the substance produced as a result of artificial injury to the tree.

Plants Exhibited.—From Mr. Low, of Clapton, came the singular little Masdevallia triglochin, a small-flowered species, with flowers of a yellowish brown, with long antenna-like tails. From Sir Geo. Macleay's garden, Mr. Green, gr., brought Bilbergia nutans, an elegant Bromeliaceous plant, with a nodding spike beset with pink bracts and greenish flowers, with blue segments edged with white; Grevillea fasciculata, a nearly hardy Grevillea, with orange-red flowers smaller than those of G. rosmarinifolia; and Æchmea Weilbachii, a Tillandsia-like plant, with a branched spike of coral-red bracts and violet-purple flowers.

FLORAL COMMITTEE.—Mr. C. Noble in the chair. With the exception of a large and most tastefully arranged collection of hardy ornamental plants, contributed by Messrs. Charles Lee & Son, of Hammersmith, there were comparatively few subjects to be placed before the committee. Mr. Bull exhibited the very fine new Lælia anceps alba, noticed by us last week, and which to-day was awarded a First-class Certificate. Mr. Green, gr. to Sir George Macleay, received Botanical Commendations for Grevillea fasciculata, a small narrow-leaved species, with orange-scarlet flowers; and Bilbergia nutans, a somewhat slender species, with a drooping panicle of flowers somewhat resembling a reflex-petalled Fuchsia in shape, the segments being green, distinctly margined with blue or bluish purple, and the anthers yellow; it has pinkish bracts on the flower-stalk. Mr. Green also showed a flowering plant of Æchmea Weilbachii, with coral-red bracts and violet-purple flowers. From Mr. R. Gilbert, gr. to the Marquis of Exeter, Burghley Park, Stamford, came specimens of his fine new double Primulas, Marchioness of Exeter, blush white; Mrs. A. F. Barron, white; Princess, blush, striped and mottled with rosy purple; and Lord Beaconsfield, bright rosy magenta, a flower, like the others, of good size, and perfectly double. It was shown in the cut state at the last meeting, and having seen the plants to-day the committee gave it a First-class Certificate. Mr. Noble again showed Thujopsis borealis aureo-variegata. From Mr. J. George, gr. to Miss Nicholson, Putney Heath, came Abutilon Rose Queen, one of a number of promising seedlings which he has raised; and which, besides being of neat habit, has flowers of a rich soft shade of rose. Mr. Cannell received a vote of thanks for cut blooms of Zonal Pelargoniums, remarkable for their fine size and rich colours, and we might almost say their profusion considering the season and the weather. The principal contribution was a couple of dozen bunches of named sorts, so brilliant and good in every way that we give their names as a guide to other growers:—H. Jacoby, Lizzie Brooks, Belle of Surrey, Samuel Holden, Dr. Denny, David Thomson, M. Pouton, The Shah, Mrs. Leavers, Mr. Pollett, Rienzi, Circulator, Kleon, Titania, Remus, Mr. Chandler, A. Henderson, Louisa, Miss Gladstone, Mrs. Whitely, Colonel Seely, Lady Sheffield, and Mr. Parker. Of the white and salmon varieties of Vesuvius and New Life Mr. Cannell staged a dozen bunches each. An attractive group of Cyclamens, shown by Mr. H. B. Smith, Ealing Dean, also gained a vote of thanks. Mr. Hepper, gr. to C. O. Ledward, Esq., The Elms, Acton, received a similar vote for nine plants of Solanum pendulum, a seedling with somewhat of the habit of S. Capsicastrum, but with the midrib of the leaves white. Mr. C. Batters, gr. to Mrs. Gerard Leigh, Luton Hoo Park, Beds, sent a fruit of Pandanus reflexus, a subglobose mass covered with small spines, like a Pine-apple. The fruiting of a Pandanus is a rare occurrence in this country, so rare indeed that we did not meet with any one present who had seen one before. The committee awarded a vote of thanks. Mr. Heims, gr. to F. A. Philbrick, Esq., Avenue Road, Regent's Park, contributed a flowering specimen of Odontoglossum Warscewiczii, and a splendid mass of Sophronites grandiflora, with between thirty and forty of its richly coloured crimson-scarlet blossoms—a grand piece, which gained a Cultural Commendation. Messrs. Hugh Low & Co., Clapton, received a Botanical Commendation for Masdevallia triglochin, a very small-leaved Brazilian species with distinct yellowish brown flowers, described last year at p. 648, vol. viii. Mr. Thomson, Garden Superintendent at the Crystal Palace, sent cut branches of Eucalyptus globulus, bearing fruit, obtained from specimens measuring respectively 48 feet and 80 feet in height, growing in the Crystal Palace building. Mr. Thomson received a vote of thanks.

Messrs. Charles Lee & Son were awarded a Gold Flora Medal for their splendid group of hardy plants, above alluded to, and which, consisting of specimens varying in size from a tall pyramidal Holly to a very dwarf Euonymus, gave them an opportunity of creating a pictorial effect, which was exceedingly pleasing, and which admirably illustrated the great value of such subjects for the enlivenment of our gardens during the dull months. We add the list of plants shown, and may remark that the group will remain on view at Kensington for some days yet:—

Abies aurea, gold; A. Engelmanni, grey; A. Menziesi, grey.
Aucuba vera fœmina, berried, green and red.
Biota, Chinese Arbor-vitæ, varieties—B. argentea, silver speckled; B. aurea, golden bronze; B. a. variegata, gold speckled; B. elegantissima, bronzy gold; B. e. picta, gold, speckled silver; B. filiformis, bright green; B. perfecta (new), green in winter, bright sulphur-gold in spring; B. semper-aurea; golden bronze.
Berberis pygmæa, deep green.
Buxus nana variegata, silver and green.
Cedrus Deodara alba spica, silver.
Cupressus Lawsoniana varieties:—C. alba pendula, white and grey; C. a. spica, white and grey; C. argentea, silvery grey; C. aurea variegata, large gold blotches; C. erecta viridis, bright green; C. lutea, yellow; C. nana glauca, grey; C. ochroleuca, yellowish white.
Cupressus macrocarpa Crippsi, green, speckled white; C. sempervirens variegata, green, speckled gold.
Elæagnus pungens variegata, golden margin.
Euonymus japonicus, varieties:—E. aurea maculata, gold in centre of leaves; E. Duc d'Anjou, light and dark green striped; E. latifolia argentea, gold and silver; E. l. a. elegans, bright silver; E. l. aurea elegantissima, deep gold margin; E. nicrophylla or pulchella, deep green; E. radicans variegata, bright silver margin; E. rotundifolia argentea, silver margin.
Gynerium argenteum compactum elegans, silver striped.
Hedera (Ivy) varieties:—H. arborea argentea, bright silver margin; H. a. aurea, gold blotched; H. a. elegantissima, silver edge; H. a. Rœgneriana, dark green; H. a. yellow berried, green leaf.
Juniperus varieties:—J. chinensis aurea, straw colour; J. drupacea, bright green; J. japonica aurea, entirely gold; J. j. argentea variegata, silver blotch; J. j. aurea variegata, gold striped; J. Neoboriense, greyish green; J. virginiana argentea, conspicuous white speckles; J. v. columnaris, dark green; J. v. elegans (Lee), dark green, suffused with cream.
Ligustrum (Privet) varieties:—L. coriaceum, dark green; L. japonicum, dark green; L. lucidum aureum variegatum, bright gold margin; L. ovalifolium, brightest gold margin; L. sinensis tricolor, green, silver, and rose colour.
Osmanthus varieties:—O. ilicifolia argentea, silver margin; O. i. aurea, dull gold margin.
Prumnopitys elegans, light green.
Retinospora varieties:—R. cupressoides, light brown; R. ericoides, light brown; R. filifera, green; R. juniperoides, bluish purple; R. obtusa nana aurea, entirely gold; R. pisifera lutea, yellow; R. plumosa, light greenish white; R. p. alba spica, tips of branches white; R. p. lutea, yellow; R. squarrosa, whitish grey.
Taxodium alba spica, bright silver tips to branches.
Taxus (Yew) varieties:—T. aurea, gold striped; T. elegantissima, silver striped; T. fastigiata aurea (Standish), entire gold; T. f. variegata (Fisher Holmes), gold variegation; T. gracilis pendula, deep green, elegant; T. pyramidalis variegata, gold striped; T. Washingtoni, bronze.
Thuja (American Arbor-vitæ) varieties:—T. alba spica, white tips to branches; T. plicata lutea, entire gold; T. Vervæneana, light bronze.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. The principal contributions to this meeting were admirable collections of Apples shown by Mr. Gardiner, Eatington Park, Stratford-on-Avon, and Mr. Louis Killick, Mount Pleasant, Langley, Maidstone. Mr. Gardiner put up forty varieties of Apples and six of Pears, the former including most of the best known sorts, represented by fine well-coloured examples, and which, in the case of one or two sorts, and notably of Adam's Pearmain, were considerably above the ordinary quality. Mr. Gardiner was awarded a Silver Knightian Medal. Mr. Killick's collection included about thirty dishes of unusually highly-coloured specimens; and a Cultural Commendation was the reward. Mr. Gilbert, gr. to the Marquis of Exeter, again sent

specimens of the new Cabbage Broccoli which he exhibited last season, and which after being boiled to-day proved so good a vegetable that a First-class Certificate was awarded. The specimens placed before the meeting were of good size and solid, and of mild flavour and tender when cooked. It had the flavour somewhat of a Marrow, and must become a great favourite, no other plant of a like nature coming so large or so good at this season. Mr. Gilbert also showed a handsome brace of Taylor's Montrose Cucumber Dispatch, a blunt white-spined variety in the way of Telegraph. Seven varieties of Apples were exhibited by Mr. S. Ford, gr. to W. E. Hubbard, Esq., Leonardslee, Horsham, including a seedling named Dr. Hogg, which proved to be of sufficiently good quality and distinct enough to gain a First-class Certificate. It is a medium-sized culinary variety, somewhat flat, and ribbed or angular in shape, and of a pale greenish-yellow colour, with the short-grained, brisk-flavoured, white flesh peculiar to such sorts as the Calville Blanche. G. F. Wilson, Esq., showed a sample of dried Bananas, of very nice flavour; and Messrs. Ross, Coates & Co., of Dunster House, Mark Lane, sent a sample of Apples dried or evaporated after being sliced, and which proved to have lost none of their flavour in the process. When good Apples are scarce these will prove an acceptable substitute for the table. From Mr. D. Wilson, gr., Castle Hill, South Molton, came a couple of fine Smooth Cayenne Pine-apples, weighing together 15¾ lb., which received a Cultural Commendation. A good dish of Tomatos was contributed by Mr. Igguiden, gr. to R.B.W. Baker, Esq., Orsett Hall, Romford; and Mr. F. N. Dancer, Turnham Green, sent specimens of the Reinette de Caux and Dutch Mignonne Apples; and a highly coloured variety, named Waltham Cross, came from Messrs. William Paul & Son. Mr. Douglas showed bunches of the Golden Queen and Royal Vineyard Grapes illustrative of his remarks in our last issue.



London: *Barometer.*—During the week ending Saturday, December 14, in the vicinity of London the reading of the barometer at the level of the sea decreased from 29.60 inches at the beginning of the week to 29.47 inches by mid-day on the 8th, increased to 29.89 inches by the morning of the 11th, decreased to 29.59 inches by the afternoon of the 14th, and was 29.67 inches at the end of the week. The mean daily readings were below their averages on every day of the week, the amounts being as follows:—8th, 0.44 inch; 9th, 0.28 inch; 10th, 0.11 inch; 11th, 0.11 inch; 12th, 0.22 inch; 13th, 0.29 inch; and 14th, 0.37 inch. The mean reading for the week at sea-level was 29.71 inches, being 0.27 inch below that of the preceding week, and 0.26 inch below the average,

Temperature.—The highest temperatures of the air observed by day varied from 34⅝° on the 8th and 34° on the 11th, to 29½° on the 12th and 29½° on the 13th; the mean value for the week was 32°. The lowest temperatures of the air observed by night were as follows:—8th, 32°; 9th, 27°.9; 10th, 26°; 11th, 25°.9; 12th, 25°.7; 13th, 20°.4; 14th, 19°.2; the mean value for the week was 25½°. The mean daily range of temperature in the week was 6¾°, the greatest range in the day being 11¼° on the 14th, and the least 2¾° on the 8th.

The mean daily temperatures of the air were very much below their averages on every day of the week, as will be seen by the following:—8th, 33°.2, —8°.2; 9th, 31.°,—10°.2; 10th, 28°.2,—12°.8; 11th, 30°.2, —10°.6; 12th, 27°.5,—13°.2; 13th, 25°.3,—15°.3; 14th, 25°.8, —14°.9. The mean daily temperature of the air for the week was 28°.7, being 12°.2 below the average of sixty years' observations, and 10°.8 below the value for the corresponding week in 1877.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 49½° on the 13th, and about 40° on the 8th, 9th, and 14th; on the 12th the reading did not rise above 30°. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 13½° on the 14th, 16° on the 13th, and about 23° on the 10th, 11th, and 12th; the mean of the seven lowest readings was 22½°.

Wind.—The direction of the wind was N., and its strength very gentle. The weather during the week was intensely cold and foggy.

Snow fell on the 11th. The sky was overcast from the 8th to the 12th inclusive; but on the 13th and 14th the sky was generally clear, and the sun shone brightly at times.

Rain.—A little rain fell on the 8th; the amount measured was 0.01 inch only.

England: *Temperature.* — During the week ending Saturday, December 14, the weather was very cold and unusually severe. The highest temperatures of the air observed by day were but 43½° at Plymouth, 40° at Truro, 39° at Leeds, and 38½° at Bolton; whilst the highest temperature at Cambridge was only 33½°, and at Leicester 33½°; the mean value from all places was 37°. The lowest temperatures of the air observed by night were 13° at Truro, Bolton, and Sunderland, 16° at Hull, 16½° at Bradford, and 16⅔° at both Cambridge and Wolverhampton; the lowest temperature at Brighton was 24°, and at Liverpool was 22½°; the mean value from all stations was 18°. The greatest range of temperature in the week was 27° at Truro, and the least, 11°, at Brighton; the mean range from all places was 19°.

The mean of the seven high day temperatures was the highest at Plymouth, 38°, Truro 37°, and Leeds 34⅔°; and the lowest at Leicester, Cambridge, and Hull, all 30½°, and Wolverhampton 31°; the general mean from all stations was 32½°. The mean of the seven low night temperatures was the lowest at Bolton, 18⅓°, Wolverhampton 20°, and Hull 20½°; and the highest at Brighton and Leeds, both 25⅜°, and Blackheath and Sunderland, both 25⅓°; the mean from all stations was 23½.° The mean daily range of temperature in the week was the greatest at Truro, 14°; and the least at Blackheath, 6½°; the mean daily range of temperature from all stations was 9⅓°.

The mean temperature of the air for the week from all places was 28°, being 12½° lower than the value for the corresponding week in 1877. The mean temperature for the week was the highest at Plymouth, 31⅓°, and Truro and Leeds, both 30°; and the lowest at Wolverhampton, Bolton, and Hull, all 25½°, Leicester 26⅔°, and Cambridge and Nottingham, both 27°.

The following table shows the extreme maximum and minimum temperatures of the air in the week, also the extreme range of temperature, and the mean temperature of the air for the week at several places, ranging from the extreme South to the North of England:—

Name of Station.	Max. temp. of the air in the week.	Min. temp. of the air in the week.	Extreme range of temperature.	Mean temp. of the air for the week.
	°	°	°	°
Truro	40.0	13.0	27.0	29.9
Plymouth	43.5	20.5	23.0	31.4
Brighton	35.0	24.0	11.0	29.2
Bristol	30.3	19.8	16.5	28.1
Blackheath	44.8	19.2	15.6	28.7
Leicester	33.5	18.2	15.3	26.7
Cambridge	33.2	16.5	16.7	26.9
Norwich	37.0	19.5	17.5	28.1
Wolverhampton	35.8	16.0	19.2	25.4
Nottingham	37.5	18.0	19.5	26.9
Liverpool	36.0	22.6	13.4	29.1
Bolton	38.5	13.0	25.5	25.4
Hull	37.0	16.0	21.0	25.3
Bradford	37.7	16.2	21.5	27.7
Leeds	39.0	19.0	20.0	30.1
Sunderland	36.0	13.0	23.0	28.9

From the above table it will be seen that the coldest weather was experienced in the Midland Counties and in Yorkshire, and in no instance was the mean temperature of the week so high as 32°. At Truro (Cornwall) the lowest temperature of the air in the week was 13°, whilst at Brighton (Sussex) it was 24°.

Rain.—The greatest amounts of rain and melted snow measured during the week were 2.06 inches at Sunderland and 1.44 inch at Truro; at other places but from one to three-tenths of an inch was measured. At Bradford and Bolton no rain or snow is reported; the average amount measured over the country was three-tenths of an inch.

The weather during the week was dull, foggy, and painfully cold. The frost was intense, and *snow* fell generally. At Sunderland 12 inches of snow is reported to have fallen on the 8th inst., and 6 inches on the 9th inst.; at other places the falls of snow were generally slight.

Scotland: *Temperature.* — During the week ending Saturday, December 14, the weather was very cold, and exceptionally severe, as in England. The highest temperatures of the air observed by day varied from 39° at Dundee, and 38° at both Leith and Perth, to 35° at both Edinburgh and Aberdeen; the mean value from all places was 37°. The lowest temperatures of the air observed by night varied from 5° at Perth (which was 28° lower than the minimum reading at Perth in the corresponding week in 1877), 9° at Edinburgh, and 13° at Dundee, to 24½° at Greenock; the mean value from all stations was only 14½°. The mean range of temperature in the week from all places was 22⅝°.

The mean temperature of the air for the week from all places was 28½°, being 4° higher than that of England, and 13½° lower than the value for the corresponding week in 1877.

The mean temperature of the air was the lowest at Perth, 24°, Dundee 27½°, and Edinburgh 28°, and the highest at Greenock, 30½°, and Leith 30°.

Rain.—The amount of rain and melted snow measured during the week was the greatest at Aberdeen, 1¼ inch; and the least at Perth, a quarter of an inch; the average amount measured over the country was seven-tenths of an inch.

Dublin. — The highest temperature of the air was 38½°, the lowest only 16°, the extreme range was therefore 22½°, the mean was 28⅔°, and the amount of rain and melted snow measured was 1.13 inch.

State of the Weather at Blackheath, London, for the Week ending Wednesday, Dec 18, 1878.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Mean of 18 years.	Temperature of the Air: Highest.	Temperature of the Air: Lowest.	Temperature of the Air: Range.	Temperature of the Air: Mean for the Day.	Temperature of the Air: Departure of Mean from Average of 60 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity. Sat = 100.	Wind: Average Direction.	Rainfall.
Dec	In.	In.	°	°	°	°	°	°	°		In.
12	29.57	—0.22	29.5	25.7	3.8	27.5	—13.2	23.9	85	WNW SSE	0.00
13	29.51	—0.29	29.8	20.4	9.4	25.3	—15.3	20.3	82	ESE E	0.00
14	29.44	—0.37	30.8	19.2	11.6	25.8	—14.9	20.9	81	ENE NE	0.00
15	29.46	—0.35	35.0	22.0	13.0	30.0	—10.7	23.8	76	NNE WSW	0.01
16	29.30	—0.52	33.9	27.3	6.6	31.1	—9.6	28.6	89	SSW	0.05
17	29.32	—0.50	32.4	25.4	7.0	28.9	—11.6	25.8	89	WNW	0.00
18	29.11	—0.71	30.5	23.9	6.6	33.6	—6.6	29.1	84	NNW WSW	0.00
Mean	29.39	—0.43	33.0	23.4	9.6	28.9	—11.7	24.0	84	variable	sum 0.06

Dec. 12.—Overcast, dull, and foggy throughout. Very cold. Calm.
— 13.—A very fine day. Bitterly cold. Hoar-frost remained all day.
— 14.—Fine but cloudy. Bitterly cold. Abundant hoar-frost all day. Overcast at night.
— 15.—Fine morning, sun shining brightly at noon. Overcast at 1 P.M. Occasional snow from 1 to 4 P.M. Slight thaw in afternoon. Very cold day.
— 16.—Overcast, dull, and densely foggy throughout. Thin rain fell from noon to 2 P.M. Snow fell from 3 P.M. to 7 P.M. Very cold.
— 17.—Overcast, dull, and foggy till evening, then fine. Cloudless at night. Bitterly cold day. Mean 5°.7 below the average of sixty years' observations. The mean temperature of the air for the thirteen days (Dec. 6—18) was 30°.1, being no less than 10°.7 below the average, and this is the coldest thirteen days which prevailed in the above period. The readings of the barometer (with but few exceptions) have been unusually low since November 24. The mean reading for the twenty-five days ending to-day (Dec. 18) is 29.54 inches, being 0.22 inch below the average.
— 18.—A fine day, partially cloudy. A thaw. Still very cold. Cloudless and frosty at night.

Note.—The weather during the past week has been exceedingly cold, and the mean temperature considerably below its average. The long period of cold weather (Oct. 27—Dec. 18) has now reached fifty-three days, and the mean temperature of the air for these fifty-three days is 37°, being 5°.7 below the average of sixty years' observations. The mean temperature of the air for the thirteen days (Dec. 6—18) was 30°.1, being no less than 10°.7 below the average, and this is the coldest thirteen days which prevailed in the above period. The readings of the barometer (with but few exceptions) have been unusually low since November 24. The mean reading for the twenty-five days ending to-day (Dec. 18) is 29.54 inches, being 0.22 inch below the average.

James Glaisher.

Variorum.

Extinction of Fires.—A French chemist, M. Queynet, has devised a method of rapidly extinguishing fires in chimneys. It consists of burning about 100 grammes of the sulphuret of carbon on the hearth of a chimney, the sulphur being first turned into one or two broad hollow plates, in order that the combustion may be produced on a relatively large surface. Chimney fires, so numerous in Paris as well as London, have usually been extinguished, in Paris at least, by the firemen by means of sulphur burnt on the hearth of the chimney; but it is almost always necessary to mount to the roof to close the orifice at the top. On the other hand, if the temperature of the hearth be very moderate, the sulphur burns with difficulty and melts, being transformed into brown sulphur, and its combination with oxygen is so slow that there often remains sufficient oxygen in the air which the vent contains to enable the soot to continue to burn. M. Queynet's idea is to employ for the extinction of fires in chimneys a body which in burning gives, like sulphur, sulphurous acid, but in conditions much more advantageous than powdered sulphur. In fact, the sulphuret of carbon, a liquid combination of sulphur and carbon, vaporises and inflames very easily, burns very quickly, and yields, by absorbing the oxygen of the air, a gas composed of two-thirds of sulphurous acid and one-third of carbonic acid, both equally unfavourable to combustion. As to any danger connected with the method, this can be avoided by very simple precautions. The liquid should be divided into quantities of 100 grammes, in flasks large enough to preserve a vacuum, to allow for the great expansion of sulphuret of carbon. The

firemen of Paris have thus extinguished in January of this year 32 out of 51 fires; in February, 81 out of 103; in March, 138 out of 165; or in all 251 out of 319 fires. And these 251 extinctions have been to some extent instantaneous, without the necessity of mounting the roof or in any way disarranging the apartments. *Times*.

Enquiries.

He that questioneth much shall learn much.—BACON.

WHAT IS A NURSERYMAN?—Please give me a definition of the term nurseryman. The appearance of this term in a schedule of prizes has given rise to much discussion, and it is sought to define it as clearly as possible. Do you consider a jobbing gardener who employs three or four men in keeping small gardens in order, has a quarter of an acre or so of ground on which he grows a few shrubs, hardy plants, &c., and a small stove and two or three houses for the growth of bedding plants and a few cut flowers in winter and spring, to be a nurseryman in the ordinary acceptation of the term? *D. R.* [Yes, certainly; any dealer in plants is practically a nurseryman. EDS.]

MOORHENS.—Will some of your readers tell me the best way of preparing moorhens for the table? Some say the birds should be skinned; our gamekeeper says "No—pluck them and treat them the same as you would wild ducks, and then they are very good; though they are very hard things to pluck, but perseverance will overcome the difficulty. The down should all be plucked off clean." *T. W.*

YEW.—An article in the *Agricultural Gazette* states that of the Yew trees growing at Molecomb, in Goodwood Park, some are harmless, while others are poisonous. I have recently heard it stated that this distinction lies in the sex of the tree. Can you inform me if there is the smallest evidence to that effect? *H. K.* [We know of none. EDS.]

Answers to Correspondents

APRICOTS: *Henry H. Jennings*. We see no reason why your Apricot trees should not bear. From your remark that "they make abundance of new wood and no bloom," we suspect that they may be overpruned. The Apricot flowers are borne on the young wood. Care should be taken to lay in a fair supply of this in summer, but not crowding it; and if growing freely, spare the knife, and do not shorten any of these shoots. Should this not have the desired effect, try gentle root-pruning.

CATSUP: *Sarah*. The following is Mrs. Hussey's recipe, given in an abbreviated form:—Use sound Mushrooms only; cut off the stems, and if soiled peel them; do not cut, but break them up small; powder every portion with salt, and set the mass in an earthen colander placed in a bowl. The quantity of salt is not of importance. After twenty-four hours, press the pulp down in the colander; all the liquor which thus runs off is to be preserved. To make it keep, procure a quart of spirits of wine, and, to flavour, add any spices you prefer. After the catsup has been strained, let it settle twelve hours, then put it in half-pint bottles; fill them up to the shoulder, add the spiced spirit to fill the neck, and cork the bottles tightly. The spirit should be left floating on the top, to exclude the air. Before using shake the bottle thoroughly.

CLAY'S FERTILISER.—In answer to "R." and others, we may state that the manufacturer of this manure is Mr. S. Clay, 174, High Street, Homerton, London, who informs us that, owing to certain legal obstacles preventing its manufacture, he is not at present prepared to place it before the general public.

GLASS: *R. S.* Hartley's rough plate glass is not to be recommended for glazing vineries.

HEATING: *Querist*. The pipes would be better laid about a foot from the ground, under the stage in front, and near the pathway at the back, then taken one above the other, the front ones side by side. Four or six inches glazed pipes should be used; they should be put together with puddled clay. There should be openings along the front part of the stage to allow the heat to rise near the front sashes.

HYDRANGEA CULTURE: *E. C. L.* You will find a good practical article on the subject in our pages, vol. vi., 1876, p. 102. The subject is of too great length to be dealt with in this column.

MONSTERA DELICIOSA: *J. F.* This is a strong-growing Aroid, requiring a stove temperature and good loam to grow it well. It thrives admirably over a tank, where its roots can reach the water, but soon grows out of bounds, and on that account you may find it most convenient to allow it to run up a wall or pillar.

MOORHEN: *H. E. W.* According to my own observations the female bird is the smaller and less deeply coloured, and I do not remember to have examined any examples in which I did not find this to be the case; but I am bound to have some regard to the contrary statements advanced by other ornithologists, and I can only suppose that in some instances the male is the less brightly-coloured bird. *Alfred Newton, Magdalene College, Cambridge.*

NAMES OF FRUIT: *J. M.* Striped Beaufin. — *J. K.* Old Colmar.

NAMES OF PLANTS: *J. Chapman*. 1, indeterminable without flowers; 2, Odontoglossum cariniterum.—*J. Davies*. Leptospermum sericeum.

NASTURTIUM, SCARLET TOM THUMB: *Subscriber*. This now famous flower was raised at Messrs. James Carter & Co.'s Seed Farm, Dedham, by Mr. W. H. Dunnett, and was sent out for the first time by that firm in the spring of 1859; to the seed trade in the autumn of 1858.

SKELETONISING LEAVES: *W. Lovell*. Mr. Kaye, of Didsbury, near Manchester, publishes a cheap little book, which gives minute information on this subject. The price is 3*s*. 1*d*., post-free in this country.

TESTIMONIALS, AGREEMENTS, &C.: *Verity*. 1 and 2, an employer is not justified in keeping the testimonials received by a servant from a former employer, and submitted for his inspection, unless they are in the form of letters addressed to himself. We may add, that on principle we have an objection to all open or general recommendations, for various reasons. A servant should always be in a position to get a fair and honest direct statement of character from his last employer, and it should be addressed personally to the individual into whose service he seeks to enter. 3 and 4, under the circumstances—that is, where there is night-work attending fires and Sunday work, neither of them paid for—it would not be usual to stop payment for an occasional hour or even half-day; but there is perhaps another side to the question. Obviously, since you ask about "prosecution" for refusing to do this Sunday work and night work, there is something altogether wrong between you and your employer, and you had better make a fresh bargain or part, which latter you can do by giving the month's notice referred to as part of your agreement. It makes no difference that the occupation is in the department of market gardening.

☞ FOREIGN SUBSCRIBERS sending Post-office Orders are requested to make them payable at the post-office, King Street, Covent Garden, London, and at the same time to inform the Publisher at the office of this Journal.

ERRATA.—In the account of a "Fine Old Pear Tree," Dec. 14, p. 761, for "95 feet 6 inches in circumference at base," read 9 feet 6 inches; and for the one at Wootton read, instead of "3 feet 4 inches," 8 feet 4 inches. *Joseph Murdoch, Wootton, Warwick.*

CATALOGUES RECEIVED:—Messrs. Rodger, M'Clelland & Co. (64, Hill Street, Newry), Catalogue of Roses, Fruit Trees, Strawberries, Herbs, &c.; also Catalogue of Trees and Shrubs, Grasses, Conifers, &c.—Messrs. James Cocker & Sons (Aberdeen), Descriptive Catalogue of Trees, Shrubs, Conifers, Roses, Fruit Trees, Vines, Strawberries, &c.—Alfred Sollitt (11, Queen Street, Scarborough), Priced List of Tiffany, Netting, and Canvas.

COMMUNICATIONS RECEIVED:—Borderer (yes).—Sir T. L.—C. H. H.—G. W.—W. B. H.—F. H.—J. C.—A. C.—A. M.—J. D.—F. G. D.—G. G.—J. C.—J. S.—E. A. O.—E. W. S.—H. K.—Comme il faut.—M. J. B.—A. S. K.—A Market Gardener (next week).—A. G. L.—A. G.—C. L.—W. N.—E. O. F.—W. C.—W. R. M'N.—J. C.—H. F.—W. F.—J. K.

Markets.

COVENT GARDEN, December 19.

Business does not improve to any extent except in better class goods. Good samples of Grapes are commanding higher rates, as also late Apples. *James Webber, Wholesale Apple Market.*

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 0	Oranges, per 100	4 0	8 0
Cobs and Filberts, lb.	0 9	1 0	Pears, per doz.	4 0	8 0
Grapes, per lb.	2 0	6 0	Pine-apples, per lb.	2 0	4 0
Lemons, per 100	3 0	10 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2 0	4 0	Horse Radish, p. bun.	4 0	..
— Jerusalem, bush.	4 0	..	Lettuces, Cabbage, per score	1 6	..
Asparagus, Fr. sprue, per bundle	1 6	..	Mint, green bunch..	0 4	0 6
— English, per bush.	3 0	..	Onions, young, bun.	0 4	0 6
Beans, French, p. 100	2 0	..	Parsley, per bunch..	0 4	..
Beet, per doz.	1 0	2 0	Peas, per quart	1 3	0 ..
Brus. sprouts, bush.	7 0	..	Radishes, per bunch	0 1	0 3
Cabbages, per doz.	1 0	8 0	— Spanish, doz.	1 0	..
Carrots, per bunch	0 4	0 6	— New Jersey, doz.	2 0	..
Cauliflowers, per doz.	2 0	3 0	Rhubarb, doz.	1 0	0 ..
Celery, per bundle	1 6	2 0	Shallots, per lb.	0 6	..
Chilis, per 100	2 0	..	Seakale, per punnet	2 6	..
Cucumbers, each	0 4	1 6	Spinach, per bushel	3 0	..
Endive, Batav. dozen	1 6	..	Sweet Potatos, per lb.	0 6	..
Garlic, per lb.	0 6	..	Tomatos, per dozen	2 6	3 0
Herbs, per bunch	0 2	0 4	Turnips, p. 12 bunch.	3 0	..

The Potato market is quiet, and without alteration in prices.—Regents, 100*s*. to 130*s*.; Early Rose, 110*s*. to 120*s*. per ton.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lily, or Richardia æthiop., doz.	24 0	30 0	Euonymus, var., doz.	6 0	18 0
Azaleas, per dozen	24 0	60 0	Ferns, in var., p. doz.	4 0	18 0
Begonias, per doz.	6 0	12 0	Ficus elastica, each	2 6	15 0
Bouvardias, per doz.	18 0	24 0	Foliage Plants, various, each	2 0	10 6
Camellias, per dozen	18 0	60 0	Hyacin., Rom., doz.	12 0	18 0
Chrysanth., per doz.	6 0	30 0	Mignonette, per doz.	6 0	9 0
Cyperus, per dozen	6 0	12 0	Myrtles, per doz.	16 0	12 0
Dracæna terminalis	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	18 0	24 0	Pelargoniums, scarlets, zonal, doz.	6 0	12 0
Epiphyllum, per doz.	18 0	60 0	Primulas, per dozen	6 0	12 0
Erica Cavendishiana, per doz.	6 0	9 0	Solanums, ber., doz.	6 0	18 0
— gracilis, p. dozen	9 0	12 0			
— hyemalis, p. doz.	12 0	42 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0 6	1 0	Lily of Valley, spray	1 0	2 0
Arum Lilies, 12 blms.	2 0	4 0	Mignonette, 12 bun.	6 0	9 0
Azaleas, 12 sprays	1 6	4 0	Narcissus, paper-white, 12 sprays	2 0	6 0
Bouvardias, per bun.	1 0	4 0	Pelargoniums, 12 spr.	2 0	4 0
Camellias, per dozen	6 0	18 0	— zonal, 12 sprays	1 0	2 0
Carnations, per dozen	1 6	4 0	Primula, double, per bunch	1 0	2 0
Chrysanth., per doz.	2 0	6 0	Roses (indoor), doz.	2 0	12 0
— per 12 bunches.	9 0	18 0	Tropæolum, 12 bun.	2 0	6 0
Epiphyllum, 12 blms.	1 0	3 0	Tuberoses, per dozen	3 0	6 0
Eucharis, per doz.	10 0	18 0	Violets, 12 bunches	4 0	6 0
Gardenias, 12 blms.	12 0	24 0			
Heliotropes, 12 sp.	0 6	1 0			
Hyacin., Rom., 12 sp.	2 0	4 0			

*** These prices cannot be depended on during Christmas week, on account of the large demand for church decorations, &c.

SEEDS.

LONDON: *Dec.* 18.—The position of the seed trade has not this week undergone any appreciable alteration; home-grown parcels are marketed somewhat more sparingly, and of choice seed there is a continued scarcity. As regards American red there is no new feature; meantime, whilst England neglects this article, Germany is quietly buying it—the export movement to Hamburg having recently assumed quite important proportions. Fine white Clover does not offer freely, and medium qualities fail to attract attention. Many provincial houses are taking advantage of the low price of Alsike to get into stock. Last week's advance of £2 per ton in the value of best Trefoil is fully supported. The exports of Timothy seed from New York since August to date have been—to the United Kingdom 53 tons, to the Continent 260 tons. For Hemp, Canary, Linseed, &c., the demand, as is usual towards Christmas, is slow. Blue Peas find buyers on fully former terms. Good Haricot Beans, being cheap, are in fair request. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday business was seriously interrupted by the prevalence of a dense fog. As regards Wheat the few sales concluded were at about the rate of the previous Monday, but trade was altogether in an indolent and uninteresting condition, and it was not difficult to perceive that the market was adverse to holders of produce. Barley was slow of sale; Oats and Maize were held for previous rates; Beans and Peas were without change, and flour was dull with a drooping tendency.—On Wednesday trade was almost at a standstill. Holders of Wheat not anxious to force sales asked previous rates, but offers of less money were not altogether rejected. Barley, Oats, and Maize were slow of sale, and prices were quoted as on Monday. Beans, Peas, and flour with difficulty supported the rates previously given.—Average prices of corn for the week ending December 14:—Wheat, 40*s*. 10*d*.; Barley, 38*s*. 10*d*.; Oats, 21*s*. 6*d*. For the corresponding period last year:—Wheat, 51*s*. 7*d*.; Barley, 44*s*.; Oats, 24*s*.

CATTLE.

At Copenhagen Fields on Monday the usual Christmas market was held. There was immense variety among the show of cattle. Herefords were in considerable force; the Devons were also very conspicuous; the big Sussex breed was well represented; animals fed, if not bred, in the Midland Counties, showed well in the varied spectacle; shorthorns towered here and there, and Scotland sent a large quantity of animals, including some good specimens of the Highland breeds. A considerable number of beasts had crossed the Atlantic expressly for this market; and ninety-three of them had, it was stated, just arrived from Chicago. The sheep seemed on the whole to meet with a quicker sale than the cattle; but with regard to the former as well as the latter, as the day advanced there were many complaints of slow demand. The number of beasts that entered the market was 6830, the number of sheep 10,850. The numbers were about the average; the quality, according to good judges, on the whole somewhat below the average. Quotations:—Beasts, 4*s*. 4*d*. to 5*s*. 2*d*., and 5*s*. 4*d*. to 6*s*.; calves, 5*s*. 6*d*. to 6*s*. 6*d*.; sheep, 5*s*. 4*d*. to 5*s*. 8*d*., and 6*s*. 4*d*. to 7*s*. 2*d*.—Trade on Thursday ruled dull in tone. Demand was inactive for both beasts and sheep, and prices were barely so firm as on Monday. Calves and pigs sold slowly, at late rates.

POTATOS.

The Borough and Spitalfields Markets reports state that there has been a fair trade doing in sound Potatos, and prices remain steady. Inferior Potatos are dull of sale. Kent Regents, 100*s*. to 120*s*. per ton; Essex ditto, 80*s*. to 100*s*.; Victorias, 110*s*. to 130*s*.; flukes, 110*s*. to 135*s*.; Scotch Regents, 65*s*. to 95*s*.—The imports into London last week consisted of 40,285 bags from Hamburg, 1659 Ghent, 1004 Bremen, 681 Antwerp, 572 Dunkirk, 100 Rotterdam, and 17 barrels from New York.

COALS.

At market on Monday the demand for house coals was brisk, owing to the cold weather, and the price was advanced 1*s*. per ton. Wednesday's business was done at the following quotations:—East Wylam, 18*s*. 9*d*.; Walls End—Easington, 18*s*. 9*d*.; Hawthorns, 18*s*. 9*d*.; Lambton, 20*s*. 6*d*.; Original Hartlepool, 21*s*.; Wear, 18*s*. 9*d*.; Chilton Tees, 19*s*. 6*d*.

Important to Foresters, &c.

SNOWBERRY (Symphoricarpus racemosus), 20,000 strong, bushy plants, 4 to 4½ feet high. This is a rare opportunity for those contemplating the formation of Game Covers, Underwood, Hedges, &c., to procure extra good plants, at very reasonable rates. Price on application.
J. T., 23, Upper Sackville Street, Dublin.

SEAKALE, no larger in the land; 4000 strong Standard and Half-standard Victoria PLUMS, RHUBARBS, Ashleaf Kidney POTATOS.
Price on application.
ALFRED ATWOOD, Market Gardener, 8, Palk Road, Battersea, S.W.

COCOA-NUT FIBRE REFUSE.—Reduced Price:—In 4 bushel bags, bags included, at 1s., or truckload of about 250 bushels, 25s. (truckload delivered free to rail in London). Post-office Order or Cheque will oblige with all orders.—J. STEVENS AND CO., Greyhound Yard, and 134, High Street, Battersea, S.W.

COCOA-NUT FIBRE REFUSE, as supplied to the Royal Horticultural Society.—Four-bushel bag (bag included), 1s.; 30 bags (bags included), 20s.; truck free to rail, 25s.
FINLAYSON AND HECTOR, Cocoa-Nut Fibre Works, 24 and 25, Redman's Row, Mile End Road, London, E.

GARDEN REQUISITES.—COCOA-NUT FIBRE REFUSE, as supplied to Her Majesty and most of the leading Nurserymen and Gardeners.
3d. per bushel; 100 for 20s.; truck (loose, 250 bush.), 30s.
4-bushel bags, 2d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; 12 for 45s., or 36s. per ton.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; 12 for 40s., or 34s. per ton; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. half ton, 26s. per ton; in 1 cwt. bags, 4½d. each.
YELLOW FIBROUS LOAM, PEAT MOULD, and LEAF MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
Manures, Garden Sticks, Virgin Cork, Tobacco Cloth and Paper, Russia Mats, &c.
Write for free PRICE LIST. Goods free to rail.
H. G. SMYTH, 10, Castle Street, Endell Street, Long Acre, W.C.

Fibrous Peat for Orchids, &c.

BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per truck.
BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton.
Delivered on rail at Blackwater, S. E. R., or Farnborough, S. W. R., by the truckload. Sample bag, 4s.; 5 bags, 20s.; 10 bags, 36s. Bags 4d. each.
Fresh SPHAGNUM, 10s. 6d. per bag.
WALKER AND CO., Farnborough Station, Hants.

PEAT for RHODODENDRONS and ordinary POT PLANTS, in trucks containing 14 yards or loads, put on rail at Ringwood Station, £3 15s. Carriage paid to London or any Station on the L. & S. W. Railway, £5 5s. per truck of fourteen loads. Cash or reference.
J. PRYER, Manager, Peat Stores, Vauxhall Station and Ringwood.

PEAT SOIL, PEAT SOIL.—BROWN FIBROUS, good quality, for Orchids, Pot Plants, Ferns, &c., £6 6s. per truck. BLACK, good quality for American Plants, Rhododendrons, Azaleas, Heaths, &c., 17s. per ton, or 6-ton truck for £4 10s. Delivered on rail at Blackwater, S.E.R., or Camberley, S.W.R., by the truckload. Cash with order. Sample sack, 5s. 6d., or four sacks, 20s.
HOLDER AND SON, Crown Nurseries, Reading.

GISHURST COMPOUND.—Used by many of the leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Greenfly, and other Blight, in solutions of from 1 to 2 ounces to the gallon of soft water, and of from 4 to 16 ounces as a winter dressing for Vines and Fruit Trees. Has outlived many preparations intended to supersede it.
Sold Retail by Seedsmen in Boxes, 1s., 3s., and 10s. 6d. Wholesale by PRICE'S PATENT CANDLE COMPANY (Limited).

Safe and Certain.

SIMPSON'S RED SPIDER and THRIP ANTIDOTE. Per quart, condensed, 6s.; per pint, 3s. 6d. Supplied to Seedsmen and Chemists.
Prepared by JOHN KILNER, Wortley, Sheffield.

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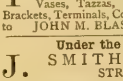
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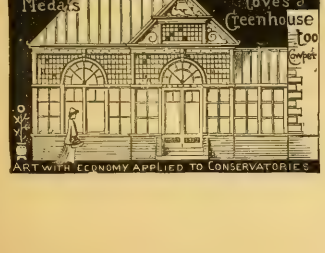
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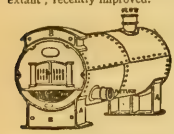


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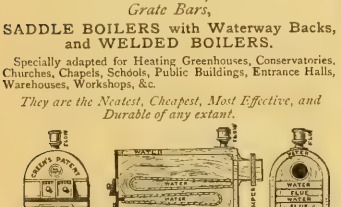
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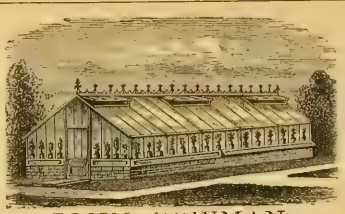
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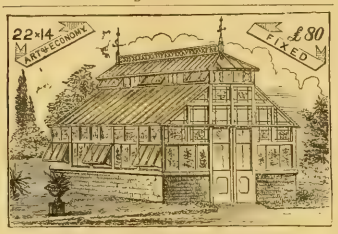
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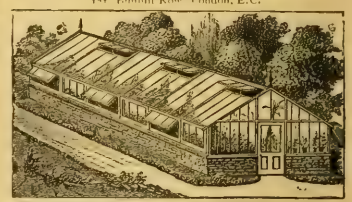
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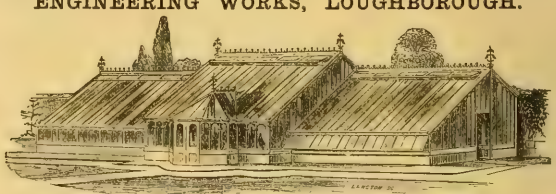
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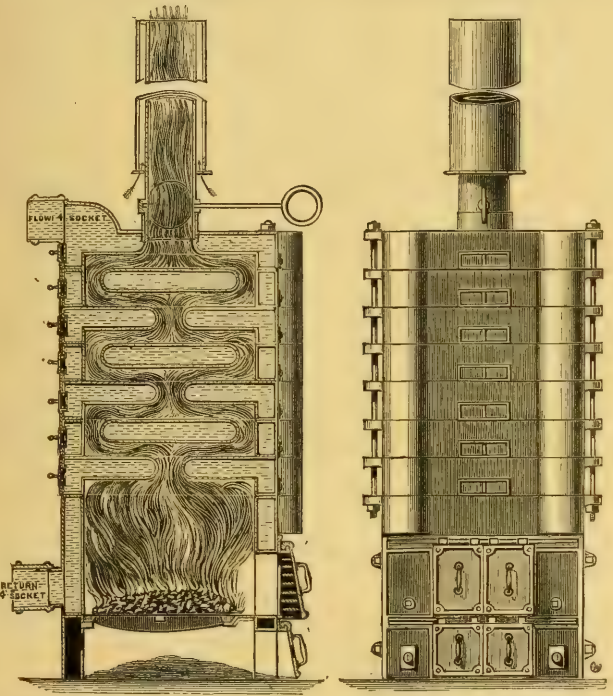
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260	8½ ,, 6½				
229	9 ,, 7				
203	9½ ,, 7½				
180	10 ,, 8	11 3	12 6	14 6	15 6
164	10½ ,, 8½				
145	11 ,, 9				
134	12 ,, 9				
124	13 ,, 9				
120	12 ,, 10				
111	13 ,, 10				
103	14 ,, 10				
97	11 ,, 10				
101	13 ,, 11				
91	14 ,, 11				
87	15 ,, 11	11 6	13 6	15 6	15 6
82	16 ,, 11				
92	13 ,, 12				
86	14 ,, 12				
80	15 ,, 12				
75	16 ,, 12				
71	17 ,, 12				
67	15 ,, 12				
60	20 ,, 12				
65	17 ,, 13				
55	20 ,, 13				
57	18 ,, 14				
51	20 ,, 14				
43	24 ,, 14	12 0	14 0	15 9	17 6
48	20 ,, 15				
44	22 ,, 15				
45	20 ,, 16				
41	22 ,, 16				
38	24 ,, 16				
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9 ,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10 ,,	..	..	0	6	0	21 ,,	..	..	0	11	6
11 ,,	..	..	0	6	6	22 ,,	..	..	0	12	0
12 ,,	..	..	0	7	0	23 ,,	..	..	0	12	6
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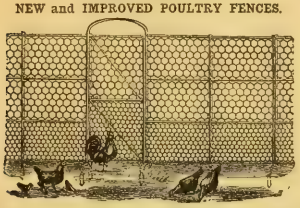
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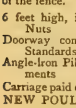
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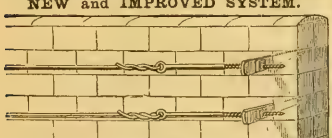
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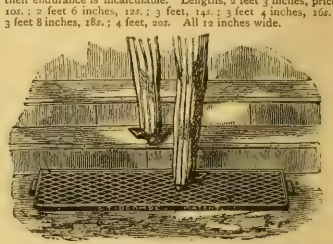
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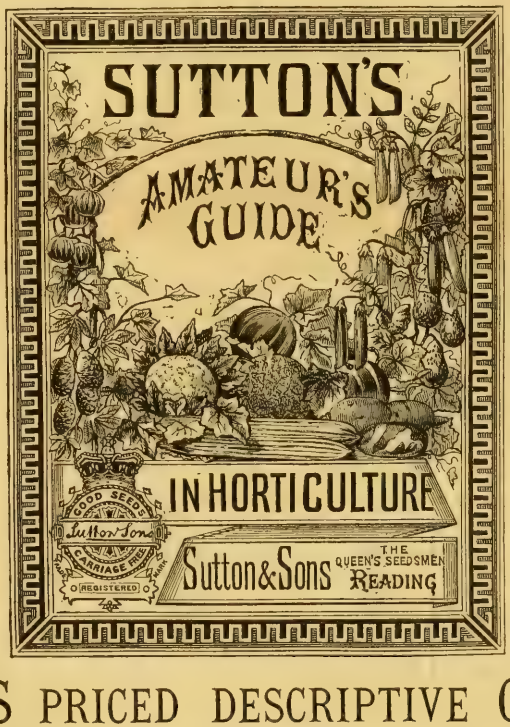
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With the best means of destroying them.

SUTTON'S PRICED DESCRIPTIVE CATALOGUE

Is also ready. It contains Descriptions with Prices of the Best Vegetables, Flowers and Potatos, in the form of an Order List—the most convenient mode of Ordering.

GRATIS AND POST-FREE.

N.B.—Garden Peas and other Seeds are well harvested and fine this season, and Prices very moderate.

THE QUEEN'S SEEDSMEN, *Sutton & Sons* READING, BERKS.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

GARDENERS' CHRONICLE.

Established 1841.

A WEEKLY ILLUSTRATED JOURNAL OF HORTICULTURE AND ALLIED SUBJECTS.

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The GARDENERS' CHRONICLE for Saturday next, Jan. 4, 1879, will contain a BEAUTIFULLY COLOURED ALMANAC.

For further particulars, see p. 808.

RICHMOND HORTICULTURAL SOCIETY.

President—H.S.H. the Duke of Teck, G.C.B.

The Fifth SUMMER EXHIBITION of Plants, Flowers, Fruit, &c., will be held in the Old Deer Park, Richmond, on THURSDAY, June 26, 1879.

The first AUTUMN SHOW of Chrysanthemums, Fruit, &c., will be held in the Assembly Rooms of the Castle Room, Richmond, on WEDNESDAY and THURSDAY, November 12 and 13, 1879.

Schedules can be obtained of the Honorary Secretary.

ALBERT CHANCELLOR, Hon. Sec.
1, King Street, Richmond, Surrey.—Dec. 18, 1878.

To the Trade.

CARTER, DUNNETT and BEALE'S General CATALOGUE of Garden, Flower and Agricultural Seeds, has been posted as usual to all their customers; should any fail to be delivered a duplicate copy will be sent on application, High Holborn, London, W.C.

To the Trade.

CHOICE GARDEN and FARM SEEDS, of reliable quality, for Market Gardeners and Seedsmen. Our Priced LIST is now ready, and will be sent post-free. Apply to HARRISON and SONS, Seed Growers, Leicester.

Notice.

OUR CATALOGUE of GARDEN SEEDS has been Posted to all our Customers. Should any not have received same, they will oblige by communicating at once.
HURST and SON, 6, Leadenhall Street, London, E.C.

To Seedsmen.

MILES' NEW HYBRID MIGNONETTE.—The grower of 6 lb. of the above (very true), solicits an offer for the lot, or part, per pound.
T. VIGOR, 2, Baker Street, Brighton.

FRUITING PLANTS of PEACHES, NECTARINES, APRICOTS, and GRAPE VINES, a large and fine stock, now offered for Sale.
THOMAS RIVERS and SON, Sawbridgeworth, Herts.

WEBB'S PRIZE COB FILBERTS AND OTHER NUTS.

Persons desirous of obtaining Trees of the above, grown by the late R. Webb, of Calcot, should give early orders to THE MANAGER, Calcot Gardens, Reading.
CATALOGUES post-free on application.

WEBB'S CHOICE POLYANTHUS AND OTHER SPRING PLANTS.

Early orders are solicited for the above choice plants. Apply to THE MANAGER, Calcot Gardens, Reading.

SUTTON'S MAGNUM BONUM POTATO, warranted true, sound, and a good sample.

SNOWFLAKE, just imported from America. A few tons each of the above to be sold cheap. A sample sack (168 lb.) of each sort on receipt of 27s. 6d., new sack included.

Trade List of other Seed Potatos on application.
D. BRINKWORTH and SONS, Seed Potato Growers, Reading.

To the Trade.

SEED POTATOS.—Our SPECIAL LIST, containing all the best English and American varieties grown by us the past season, may now be had, post-free, on application.
H. and F. SHARPE, Seed Growers, Wisbech.

Beautiful Lily.

LILIUM NEILGHERRENSE gives flowers nearly a foot long, deliciously fragrant. Fine bulbs that will flower, 10s. 6d. each, free by post.

Being an annual importer of many thousands of Lilies direct from their native habitats, Mr. William Bull can supply the best sorts in large or small quantities.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Plants for Winter Bedding.

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TUBEROUS ROOTED BEGONIAS.—Extra fine mixed Seed from the best named varieties, including Massange de Louvrex, Etna, Paul Masarel, Vesuvius, Magenta Queen, Aurora, Velours, &c.

In packets post-free for 18 stamps; large ditto, 30 stamps.
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JAMES DICKSON and SONS beg to draw attention to their very superior and very extensive Stock of hardily-grown and well-rooted TREES and PLANTS of every description. Priced CATALOGUES post-free.
"Newton" Nurseries, Chester.

Superbly Illustrated Chromolithographic

GARDENING GUIDE and SEED CATALOGUE for 1879. The most beautiful Chromolithographic Gardening Guide yet published. Post-free 12 stamps. To be deducted by purchaser when ordering.
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CHRISTMAS ROSES.—Helleborus niger, strong blooming plants. Sample and price on application to THOS. KITLEY, Oldfield Nursery, Bath.

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THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, respectfully request the attention of intending planters to their most extensive and superior stock of the above.
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Standard Tea Roses.

PAUL and SON have a splendid lot of fine STANDARDS of above, 30s. per dozen. The best way of growing these beautiful Roses.
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Fit for Immediate Working.

ROSA MANETTI and R. MULTIFLORA DE LA GRIFFERAIE, 25s per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Healthy Plants in Pots of

LILIUM AURATUM, the Golden-Rayed Japanese Lily, per dozen, 18s., 24s., and 30s.
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To the Trade.

NUTTING and SONS having now posted their Annual Wholesale Garden, Agricultural and Flower Seed CATALOGUE to all their friends, if not to hand, on application another shall be immediately forwarded.
NUTTING and SONS, Seed Merchants, 60, Barbican, London, E.C.

To the Trade.

EDMUND PHILIP DIXON'S New Trade CATALOGUE of Garden and Agricultural Seeds. Sent free on application.
EDMUND PHILIP DIXON, Seed Merchant, Hull.

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IRELAND and THOMSON, Craigleith Nursery, Edinburgh.

WANTED, SCOTCH FIR, 15 to 20 inches, and 1½ to 2 feet. State price per 1000, and quantity to offer.
FISHER, HOLMES, and CO., Handsworth Nurseries, Sheffield.

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RODGER McCLELLAND and CO., 64, Hill Street, Newry.

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A. BLACKITH and CO, Cox's Quay, Lower Thames Street, London, E.C.

Five Gold Medals, Paris, 1878.

Now Ready, price 1s. 3d

CARTER'S ILLUSTRATED VADE MECUM for 1879, containing Beautiful Lithographic Plates and Illustrations of the best sterling Vegetable and Floral Novelties of the year.
Gratis to Purchasers.
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HORNBEAM FENCES.—Established Hedges, 6 to 7 feet, beautifully trimmed, and perfect screens. Will move with safety. Price per running yard on application.
CRANSTON and CO., King's Acre Nurseries, Hereford.

SPRUCE FIRS for Christmas Trees, well formed, 2 to 3 feet high, 30s. per 100.
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English Yews—English Yews.

ENGLISH YEWS, 3½ to 4 feet, 12s. per doz., 8os. per 100; 4 to 4½ feet, 18s. per doz., 100s. per 100. All recently transplanted. Every plant a perfect specimen.
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CATALOGUES on application.
The Lawson Seed and Nursery Company (Limited) Edinburgh.

LARCH, 30,000, well transplanted, for Sale, 2½ to 3 feet. Address
GARDENER, Post-Office, Exeter.

HARDY EVERGREENS.—The hardily-grown, thoroughly transplanted, therefore well-rooted stock of Messrs. JAMES DICKSON & SONS, "Newton" Nurseries, Chester, is unequalled for variety, quality, and extent. Intending planters are invited to inspect.
Priced CATALOGUE and all information post-free.

WM. KNIGHT, of the Floral Nurseries, Hailsham, Sussex, offers from his large Stocks of Standard and Dwarf ROSES, FRUIT TREES of all sizes, Scarlet and other RHODODENDRONS well set with buds, CONIFERÆ and EVERGREENS, and DECIDUOUS TREES for Avenues, by the dozen, 100 or 1000, at very low prices for well-grown stuff.

EWING and CO. forward gratis and post-free to applicants, CATALOGUES of their extensive and well-grown stock of Standard and Dwarf Roses, Pot Roses, Clematises, Vines, Fruit Trees, Ornamental Trees, and Coniferæ.
The Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich.

To the Trade.—Erica gracilis, in good colour.

WM. CUTBUSH and SON have a very fine lot of the above, in 40-size pots, suitable for Christmas Decorations, 75s. per 100.
Highgate, London, N., and Barnet, Herts.

TWELVE CAMELLIAS, full of buds, 21s., beautiful plants, 1 to 1½ foot high, all finest sorts, in 5-inch pots. Also AZALEAS, finest sorts, full of buds, same price. Extra sizes of both, remarkably fine, 30s., 42s., and 60s. per dozen. Packages gratis for cash with order.
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ORCHIDS (winter flowering).—For Sale, cheap, a few plants of Cologyne cristata and a quantity of Pleione Wallichiana and Calanthe vestita rubro occulata. Price on application to
S. WOOLLEY, Cheshunt, Herts.

HAMPTON COURT BLACK HAMBURGH VINE.—Strong fruiting well ripened Canes of this well known Grape, 5s., 7s. 6d., and 10s. 6d. each; Planting Canes, 3s. 6d. each. Also a good stock of most of the best kinds.
T. JACKSON and SON, Nurseries, Kingston, Surrey.

Vines—Vines—Vines.

J. COWAN, The Vineyard, Garston, near Liverpool, is now offering a large and splendid stock of strong, short-jointed, and thoroughly ripened GRAPE VINES, suitable for fruiting in pots and planting Vineries. Catalogues free. The Trade supplied.

BLACK HAMBURGH VINES, and other leading sorts, in Fruiting and Planting Canes. Prices, &c., on application to
F. R. KINGHORN, Nurseries, Richmond, Surrey.

THE DESCRIPTIVE CATALOGUE of FRUIT TREES is now ready, and will be forwarded free by post, on receipt of three penny stamps.
CATALOGUES of ROSES and ORCHARD-HOUSE TREES post-free on application.
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FOR SALE, 2000 stools Victoria RHUBARB, also 2000 Fastolf RASPBERRY Bushes, Apply to JOHN LIVINGSTON, Market Gardener, 51, Holmscroft Street, Greenock, N.B.

ASPARAGUS ROOTS.—A superb lot of extra strong Connover's Colossal, for forcing; also a large quantity of 1, 2 and 3-yr.
RHUBARB.—Linnæus, Victoria, Scarlet Defiance, Prince Albert, extra fine stools.
CHARLES R. FREEMAN and FREEMAN, Seed Growers, Norwich.

SALES BY AUCTION.

By Order of the Mortgagees.—Tooting, Surrey, S.W.
¼ of a mile from Tooting Junction, and 1 mile from Balham Station.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Mortgagees to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, January 9, at 1 for 2 o'Clock precisely, the very attractive and almost unique FREEHOLD ESTATE, of 5 a. 0 r. 25 p., or thereabouts, distinguished as "The Nurseries," and known also as "Rollisson's Nurseries," Tooting, Surrey, S.W., established for upwards of half a century, enjoying a world-wide reputation, and considered to be one of the leading Nurseries in the kingdom, and offering as a going concern to any one desirous of embarking in a high-class Nurseryman's and Florist's Business an unprecedented opportunity. Comprises an excellent detached Residence, containing seven Rooms and Offices, spacious SEED WAREHOUSE, with capital Office and Store-room over — very large and handsomely designed Conservatory adjoining; the extensive ranges of GLASS, containing altogether 20,000 feet super. of Glass and Woodwork, and consisting of 26 GREENHOUSES, and several Brick-built PITS, the whole in good repair, and heated on the most approved principles by about 6500 feet of hot-water piping; 10 BOILERS, three of which have been recently fixed, suitable Tanks, Propagating Cases, and all requisite appliances for growing to the greatest perfection every class of Plants; 3 COTTAGES, PACKING SHED fitted with Crane, STABLING for 4 Horses, COACH-HOUSE, range of WORKSHOPS and other Outbuildings, the whole being brick-built and most complete in all their arrangements.

Particulars may be obtained at the Mart, of Messrs. GATLIFF AND HOWSE, Solicitors, 8, Finsbury Circus, E.C.; of Messrs. LEWIS, MUNNS AND LONGDEN, Solicitors, 8, Old Jewry, E.C.; of Mr. GEO. WHIFFIN, Accountant, 8, Old Jewry, E.C.; and of the Auctioneers and Estate Agents, 98, Gracechurch Street, E.C.

Tooting, S.W.
In Liquidation.—Mr. Wm. Rollisson & Sons.
HIGHLY IMPORTANT CLEARANCE SALE of INDOOR STOCK at the Nurseries, Tooting, ¼ of a mile from Tooting Junction, and 1 mile from Balham Station.

MESSRS. PROTHEROE AND MORRIS having been instructed by the Trustee to SELL by AUCTION the whole of the INDOOR STOCK (the contents of Fifty-six Greenhouses and Pits), without the slightest reservation, purpose holding the first Sale on the Premises, the Nurseries, Tooting, S.W., on MONDAY, January 13 and four following days, commencing at 12 o'Clock precisely each day. The stock to be offered will comprise the whole of the extensive and beautiful collection of established ORCHIDS, including several fine specimens, amongst which may be specially named Cattleya quadricolor, Mendelii, gigas, Trianæ, Regnelli and others; Lælia flava, purpurata, autumnalis, Perrinii; Oncidium sessile, Cymbidium eburneum, Odontoglossum vexillarium Roezlii; Saccolabium guttatum, Cypripedium Sedeni, Harrisianum, Chinshii, villosum, and superbiens; many fine Vandas, Cœlogyne cristata, Dendrobium Falconeri, filiforme; also upwards of 7000 medium-sized and smaller plants, including complete collections of VANDAS, including Parishii (very rare), suavis, Veitchii, and Rollissoni, tricolor, formosa, amœna, 50 cærulea, 50 cærulescens, 50 Goweræ (rare); Dendrobium Wardianum, 200 cambridgeanum, crassinode, suavissimum, thyrsiflorum and Farmeri; Camarotis purpurea, 100 Saccolabium ampullaceum, 200 S. curvifolium; 100 Aerides Lobbii, affine, superba (the finest variety blooming), 200 Cattleya Mossiæ, 200 citrina, 200 Lælia autumnalis, and a large and rich assortment of other Cattleyas and Lælias, complete collection of Miltonias, Masdevallias, Cypripediums, Lycaste Skinneri, Odontoglossums in great variety, including 36 O. Phalænopsis, 200 O. Alexandræ, 300 O. cirrhosum, 40 O. citrosmum, 200 O. Insleayi leopardinum; Anæctochilus of sorts, Spathiglottis Lobbii, and other rare and valuable kinds; a quantity of Phalænopsis Schilleriana and rosea; also a fine assortment of STOVE and GREENHOUSE PLANTS, including 50 handsome Tree Ferns, with splendid trunks and well-developed fronds, Dracænas, Crotons, etc., also a beautiful assortment of Crotons and Dracænas, including all the recent novelties; several choice Palms and Ferns, including Cyphokentia macrocarpa, Verschaffeltia splendida, Kentia, Wendlandi; Todea intermedia, grand specimen; several T. pellucida, Nephrolepsis Duffii; a considerable number of Camellias and Azaleas, mostly set with flower-buds; also the entire collection (believed to be the most complete of its kind) of half-specimen and quarter-specimen hard-wooded HEATHS; also the entire stock of young Heaths in No. 60 pots and stores, including 20,000 E. hyemalis, 15,000 E. grandiflora, 7000 E. Willmoreana, and other soft-wooded species; also 2000 choice hard-wooded Heaths in 60-pots in great variety, together with a selected assortment of NEW HOLLAND PLANTS, including Boronia elatior, Grevillea Pressii, Pultænia rosea, Leschenaultia formosa, Aphelexis macrantha purpurea, Gompholobium tulipifera, Sapageria alba and rosea, 500 Fruiting VINES in pots, together with collections of VEGETABLE and FLOWER SEEDS.

The stock may be viewed at any time. Catalogues may be had on the Premises; of GEORGE WHIFFIN, Accountant, 8, Old Jewry, E.C.; of Messrs. LEWIS, MUNNS, AND LONGDEN, Solicitors, 8, Old Jewry, E.C.; and of the Auctioneers and Valuers, 98, Gracechurch Street, E.C., and Leytonstone, E.

NOTE.—One week will be allowed for the clearance of the stock, but in the event of frost setting in the time will be extended to one month. Purchasers can arrange with the Manager, Mr. Gower, to have their lots packed and despatched. Gentlemen who cannot attend the Sale can have their commissions attended to by the Auctioneers.

Lilium auratum from Japan, Tigridia grandiflora from NEW JERSEY, and BULBS from HOLLAND.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, January 1, at half-past 12 o'Clock precisely, 5000 fine bulbs of LILIUM AURATUM, just arrived from Japan in a good condition; 3000 good roots of TIGRIDIA GRANDIFLORA, from New Jersey; a quantity of hardy English-grown LILIES, embracing some of the finest in cultivation; and the bulbs are remarkably fine, in some cases the largest that have ever been offered. Importations of LILIUMS, GLADIOLI, and other BULBS from Holland.

On view morning of Sale, and Catalogues had.

Nursery and Market Garden.

TO BE DISPOSED OF, a small NURSERY and MARKET GARDEN, with good connection, in a thriving neighbourhood. No other Nursery within 30 miles. For particulars apply to
H. W. HUMPHREYS, Seedsman, Bangor.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 93, Gracechurch Street, City, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application

To the Trade.

BELL'S ALNWICK SEEDLING GRAPE VINE EYES, for propagating, are now being sent out in prime condition. For terms apply to
H. F. BELL, Clive House, Alnwick.
First-class Certificates from the Royal Horticultural Society and the Crystal Palace Company.
N.B.—*No other variety true.*

Special Offer to the Trade.

WOOD AND INGRAM have just compiled a Special LIST of NURSERY STOCK, including a fine lot of extra transplanted British Oak, which they can offer in quantities, at a reduced rate Free on application.
The Nurseries, Huntingdon.

To the Trade.—Immense quantities of extra fine

SEEDLINGS and TRANSPLANTED PLANTS—Quicks, Scotch Firs, Alders, Fruit Trees, Shrubs, &c. For Descriptive CATALOGUE, apply to
LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France; or to their Agents, Messrs. R. SILBERRAD AND SON, 15, Harp Lane, Great Tower Street, London, E.C.

To the Trade. American Tuberoses.

HURST AND SON have now received their consignments of the above—both the ordinary Double variety and the Improved Double Pearl, and will be happy to send lowest price on application; also GLADIOLUS BRENCHLEYENSIS. The samples are good, and in fine condition.
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To the Trade.

H. AND F. SHARPE beg to announce that their Special LIST of GARDEN and AGRICULTURAL SEEDS is Now Ready, and may be obtained on application.
Seed Growing Establishment, Wisbech.

Roses, Fruit Trees, &c.

WILLIAM FLETCHER'S CATALOGUE for the present season is now ready, and may be had on application. The stock is very large and most healthy.
The Ottershaw Nursery, Chertsey.

Roses, Fruit Trees, and General Nursery Stock.

W. B. ROWE solicits the inspection by Nurserymen of his extensive stock of the above, which are well-grown, and fit for removal.
Barbourne Nurseries, Worcester.

AMERICAN GROWN TUBEROSES.—The undersigned offers Double Tuberoses, first-class Bulbs, packed and free to Liverpool at £5 per 1000, in quantities of not less than 1000.
JOHN SAUL, Washington, D.C.

To Gentlemen, Builders, and the Trade.

ROBERT AND GEORGE NEAL, Wandsworth Common and Garrett Lane Nurseries, beg respectfully to call attention to their large and varied Stock of HARDY ORNAMENTAL, FOREST, FRUIT TREES and SHRUBS, which are grown at their Nurseries, especially those Trees, &c., which are most suitable for growing in or near large towns. An early inspection invited. All goods delivered free on rail in London, or at own residence, within five miles of the Nurseries.
CATALOGUES free by post on application.

One Hundred Thousand

HOTEIA (SPIRÆA) JAPONICA, in very strong and sound condition.

HOTEIA (SPIRÆA) JAPONICA has been awarded several first prizes, and always considered best shown :	15s. to 20s. per 100.
SPIRÆA PALMATA, red, extra, 60s. to 90s. per 100.	
,, double white, 12s. to 16s. per 100.	
,, ULMARIA AUREA, fol. variegata, 40s. to 45s. per 100.	
DIELYTRA SPECTABILIS, 20s. to 25s. per 100.	
LILIUM HARRISII, a considerable number of these Lilies were free flowering, 30s. to 40s. per 100.	
,, ,, ROSEUM, 20s. to 26s. per 100.	
,, ,, RUBRUM, 20s. to 26s. per 100.	
,, CHINENSIS TIGRINUM, 5s. to 8s. per 100.	
CHRISTMAS ROSES (Helleborus niger), fine, 40s. to 16os. per 100.	

Trade CATALOGUE free on application. Post-office Orders or good references from unknown Correspondents.
BUDDENBORG BROTHERS, Nurserymen and Bulb Growers, Hillegom, near Haarlem, Holland.

To the Trade.
SPECIAL PRICES ON APPLICATION.

GEORGE COOPER, SEED MERCHANT, Hertford, begs to offer the following, of the choicest stocks:—

BEET, Red, Cooper's Excelsior	ONION, White Spanish
BROCCOLI, Hill's June	,, White Globe
CUCUMBER, Improved Telegraph [Matchless	,, Bedfordshire Champion
PARSLEY, Curled, Cooper's	CELERY, Cooper's Improved White
SWEDE, Cooper's Improved Large Purple-top	BROMPTON STOCK, Giant Scarlet
TURNIP, Improved Aberdeen Green-top Yellow	CYCLAMEN PERSICUM, from large flowers.

THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Herts, have a large and fine Stock of the following Trees, of all classes, for the Garden or Orchard:—
PEARS on the Quince and Pear stocks.
APPLES on the Paradise and Crab stocks.
CHERRIES on the Mahaleb and Cherry stocks.
CURRANTS and GOOSEBERRIES.
FIGS, fruiting trees in pots.
GRAPES, fruiting canes in pots.
PEACHES and NECTARINES, fruiting trees in pots, a fine stock; do., trained trees.
NUTS, standard and dwarf.
ORANGES and LEMONS.
PLUMS.
STRAWBERRIES, RASPBERRIES, &c.
ROSES, standard and dwarf, a very fine stock of the best kinds; do., in pots for forcing, stout and well grown plants
Descriptive Rose Catalogue free.
Descriptive and Illustrated Fruit Catalogue free by post, 3*d*.
Miniature Fruit Garden, 3*s*. 6*d*., free by post.

TO THE TRADE.
MANETTI STOCKS, 21*s*. per 1000.
MUSSEL STOCKS, 45*s*. per 1000.
CRAB STOCKS, 35*s*. per 1000.
Samples of the above may be had on application to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

GLADIOLI, DAHLIA, CANNA, ACHIMENES, and other MISCELLANEOUS BULBS.
Our Special CATALOGUE of the above for 1878-79 is Now Ready, and will be handed to all Gardeners and Amateurs, post-free, on application to
Messrs. MERTENS AND CO., 5, Billiter Square, London, E.C.; or to ourselves direct, ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

TWELVE NEW GLOXINIAS for 21*s*., including the grand new novelties shown at Paris Exhibition, small growing Bulbs in 2-inch pots, or dry, free by post; also large-flowering bulbs of fine AMARYLLIS, imported from Peru, 42*s*. per dozen.
JOHN H. LEY, Royal Nursery, Croydon.

Trees and Shrubs for Public Parks, Cemeteries, &c.

W. JACKSON AND CO., Nurseries, Bedale, Yorkshire, can supply the above in great variety and of good sizes, to give immediate effect. Properly grown and well transplanted. Prices very moderate.
CATALOGUES free on application.

To the Trade.
NEW POTATO, "PRIDE of ONTARIO."
H. and F. SHARPE are now sending out the above most prolific and handsome shaped new Potato. Full description and price may be had on application.
Seed Growing Establishment, Wisbech.

Pelargoniums.

PELARGONIUMS.—Special Offer to the Trade of Show, French, and Fancy Varieties. Strong healthy plants, established in single pots, 35*s*. per 100, packing included for cash.
JAMES HOLDER AND SON, Crown Nurseries, Reading.

TO THE TRADE.—VEGETABLE, FLOWER and AGRICULTURAL SEEDS, of sterling quality only. Our own, and carefully selected Novelties of the Season.—SANDER AND CO., Seed Growers, St. Albans.

The Largest Black Grape in Cultivation,
GROS GUILLAUME (ROBERTS' VARIETY).
W. TAIT AND CO. can now supply planting Canes of this wonderful Grape, which is quite distinct from the old Gros Guillaume and Barbarossa. For particulars see *Gardeners' Chronicle*, pp. 632 and 692. The Canes now offered are from eyes taken from Mr. Roberts' parent Vine at Charleville.
Planting Canes, 7*s*. 6*d*. each, stronger, 10*s*. 6*d*. each.
W. TAIT AND CO, Nurserymen and Seedsmen, Dublin.

LEE'S NEW VIOLET ODORATISSIMA.—Habit dwarf and compact, quite distinct from any other variety; colour, purplish azure, changing to pale azure when fully developed; form, fine; scent, exquisite. As the opinions of the Press, &c., have given last spring, they will not be repeated here. Plants at any time when the weather is favourable, at the following rates:—15*s*. per dozen, 8*s*. 6*d*. per half-dozen, 5*s*. per quarter-dozen. The Trade supplied when one dozen or more are taken on the usual terms.—GEORGE LEE, F.R.H.S., Market Gardener, Clevedon, Somerset.

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MESSRS. JOHN STANDISH AND CO. have a fine Stock of these for disposal, consisting of the following:— [per dozen.
AZALEA INDICA, fine plants, and well budded, 24*s*. to 42*s*.
BOUVARDIA, in variety, 18*s*. to 24*s*. per dozen.
CARNATION, Miss Jolliffe, La Belle, and others, 24*s*. per doz.
EPACRIS, in variety, 24*s*. to 30*s*. per dozen. [per dozen.
ERICA HYEMALIS, fine plants, full of bloom-bud, 15*s*. to 30*s*.
LILY OF THE VALLEY, single crowns, 8*s*. per 100.
PELARGONIUMS, 18*s*. to 24*s*. per dozen.
PINK, Lady Blanche, 9*s*. per dozen.
POINSETTIA PULCHERRIMA, 18*s*. per dozen.
ROSES, in pots, great variety, 24*s*. to 42*s*. per dozen.
SOLANEUMS, well berried, 12*s*. per dozen.
PALMS and DRACÆNAS, 24*s*. to 42*s*. per dozen.
ADIANTUM CUNEATUM, and many other FERNS, 30*s*. per dozen; besides a large general stock of STOVE and GREENHOUSE PLANTS.
CATALOGUES of which may be had on application.
Royal Nurseries, Ascot, Berks.

QUEEN OF LILIES, LILIUM AURATUM.—Imported Bulbs are now arriving, and orders are solicited. This lovely Lily is quite hardy, and should be generally grown. Before ordering send for Lily List, where all particulars are given.
Prices, size No. 1, 6*d*.; No. 2, 1*s*.; No. 3, 1*s*. 6*d*.; No. 4, 2*s*. each.
ORCHIDS.—Special offer of the following fine Orchids, for £5 5*s*.:—1 plant Phalænopsis Schilleriana, 2 plants Dendrobium formosum gigantheum, 1 plant Phalænopsis grandiflora aurea, 4 plants Dendrobium cretaceum, 1 plant Saccolabium guttatum, 1 plant Dendrobium barbatulum, 3 plants Calanthe rubra and luteo occulata, 1 plant Dendrobium Pierrardi, 1 pot Limatodes rosea.
All orders to be accompanied by a remittance Lily and Orchid LIST sent on application to
WILLIAM GORDON, 10, Cullum Street, London, E.C., Lily Bulb and Plant Importer.

Florists' Flowers, Roses, and Climbers.

THOMAS S. WARE'S CATALOGUE of the above, including, in the Florists' Flower portion, Daisies, Delphiniums, Dianthus, Pyrethrums, Pinks, Bedding Pansies and Violas, Show and Fancy Pansies, Potentillas, Border and Winter Flowering Carnations, Paeonies, Phloxes, and Sweet Violets, may now be had post-free on application.
Hale Farm Nurseries, Tottenham, London.

SPECIAL OFFERS TO THE TRADE.
MANETTI ROSE STOCKS, 400,000, fit for working.
MAIDEN PEARS on Pear stocks, 10,000, all the leading kinds, splendid plants.
STANDARD PEARS, extra fine.
PYRAMID and DWARF TRAINED PEARS.
STANDARD TRAINED JARGONELLE and other varieties.
STANDARD CHERRIES, extra fine.
STANDARD TRAINED MORELLO and MAY DUKE, &c.
Prices and List on application to
CRANSTON AND CO., King's Acre Nurseries, Hereford.

New Catalogue.

MAURICE YOUNG begs to inform Purchasers of Hardy Plants that his NEW DESCRIPTIVE CATALOGUE may now be had on application.

It contains lists of CONIFERÆ, RHODODENDRONS, and other AMERICAN PLANTS, Standard and Dwarf ROSES, ORNAMENTAL TREES, SHRUBS and EVERGREENS, CHEAP EVERGREENS for COVERS, PLANTS for WINTER BEDDING, CLEMATIS and other CLIMBERS, Transplanted FOREST TREES, &c., all in splendid condition for removal.

☞ The Nurseries are about one hour by rail from Waterloo Station.

Milford, near Godalming, Surrey.

Specimen and Half-specimen Ornamental and VARIEGATED PLANTS.

E. P. DIXON, The Nurseries, Hull, will Sell the following Plants cheap, to make room for young stock. Size and prices on application :—

THEOPHRASTA IMPERIALIS.
ANNANAS SATIVA VARIEGATA.
PANDANUS VEITCHII.
COCOS WEDDELLIANA.
DÆMONOROPS PLUMOSA.
DASYLIRION ACROTRICHE.
YUCCA QUADRICOLOR.
" STOKESI.
" ALOIFOLIA VARIEGATA.
VERSCHAFFELTIA MELANOCHÆTES.
THRINAX ELEGANS.
BOUGANVILLEA GLABRA.

Can also offer in quantity Dracæna Cooperii, Dracæna Baptistii, Eucharis amazonica, Anthurium Scherzerianum, Bignonia grandiflora, Araucaria excelsa, Azalea Mollis, Kalmia latifolia, Adiantum Capillus-veneris, Adiantum Capillus-veneris magnifica. Size and price on application to

E. P. DIXON, The Nurseries, Hull.

Plants, Special.

The present is the best time for planting

HARDY NORTH AMERICAN ORCHIDS, such as Cypripedium, Habenaria, Orchis, &c., in their many species, of which we offer a splendid stock of newly imported plants with strong flowering crowns. Also DISA GRANDIFLORA, in imported clumps, full of tubers, from 5s. each. This is the most beautiful of terrestrial Orchids, and ought to prove quite hardy in England.

N.B. The North American Orchids, grown as Cool-house Orchids, are most charming; and as their prices, for flowering plants, range from 2s. 6d. to 3s. 6d. each (and less when more are taken) they are within the reach of every one.

CATALOGUES post-free on application.

THE NEW PLANT AND BULB COMPANY, Colchester.

SPECIAL CHEAP OFFER of WINTER and SPRING BEDDING PLANTS.

AURICULA, Alpine, fine strain, in 60-pots, 12os. per 1000, 15s. per 100.
DAISY, Aucubæfolia, golden netted foliage, strong clumps, 30s. per 1000, 4s. per 100.
" Crown, fine, strong clumps, 25s. per 1000, 3s. per 100.
" Rob Roy, fine red, ditto, 25s. per 1000, 3s per 100.
" Bride, finest large white, ditto, 35s. per 1000, 4s. per 100.
MENTHA PULEGIUM, strong clumps, 15s. per 1000, 2s. per 100.
MYOSOTIS DISSITIFLORA, true, well rooted fine clumps, 40s. per 1000, 5s. per 100.
PANSY, Cliveden Blue, fine healthy plants, 50s. per 1000, 6s. per 100.
" Blue King, ditto, 50s. per 1000, 6s. per 100.
PRIMROSE, Single Lilac, strong, 6s. per 100.
" Double Yellow, ditto, 85s. per 1000, 10s. per 100.
ROCKETS, Double Purple, ditto, 10s. per 100.
" Double White, ditto, 8s. per 100.

CATALOGUE of General Nursery Stock on application.

W. BALL AND CO., Bedford Road Nursery, Northampton.

Cover Planting.

MESSRS. JOHN STANDISH AND CO. have the following Plants to offer, in large quantities, well rooted, suitable for Cover Planting :—

RHODODENDRON PONTICUM, 12 to 18 inches, and very bushy
BERBERIS DARWINII, 1½ to 2 feet.
" AQUIFOLIUM, and others.
LAUREL, common, 2½ to 4 feet.
" Portugal, 2 to 3 feet.
" caucasicum, 2 to 3 feet.
AUCUBAS, and other Plants.

When large quantities are taken a very liberal reduction will be made from the catalogue prices.

Samples and prices on application.
Royal Nurseries, Ascot, Berks.

WM. L. SKINNER, NURSERYMAN and SEEDSMAN, Silcoates, Wakefield, offers the following, all in fine condition. Prices on application :—

CUCUMBER, Rollisson's Telegraph, true, grown from Rollisson's seed : none else grown.
10,000 SEAKALE, strong.
10,000 " 2-yr. seedling.
1,000 CHESTNUT, scarlet, 6 to 8 feet, fine.
20,000 LIGUSTRUM OVALIFOLIUM, 2 to 3 feet.
10,000 AUCUBA JAPONICA, 1 to 2 feet.
5,000 RHODODENDRONS, 1 to 3 feet.
3,000 HOLLIES, green, fine roots, 1 to 3 feet.
1,500 " Golden Queen, fine roots, 1 to 2 feet.
10,000 PRIVET, common, 3 to 4 feet.
LAURUS ROTUNDIFOLIA, 4 feet.
" LATIFOLIA, 3 feet.
" COLCHICA, 2 feet.
" COMMON, 2 to 3 feet.
WILLOWS, Weeping, fine heads.
GOOSEBERRIES, strong.
POTATOS, Myatt's Prolific, per ton.
QUICKWOOD, 18 inches to 2 feet.

FRUIT TREES.—Pyramidal Pears, fruiting trees, 6 to 8 feet, my selection, 18s. per dozen; Currants, Black Naples, fruiting bushes, 16s. per 100; Standard Morello Cherries, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen; Standard Plums, 6 feet stems, bushy heads, in flower-bud, 18s. per dozen; Medlars and Walnuts, bushy heads, 18s. per dozen.

Fruit Tree CATALOGUE gratis.

J. GEORGE HILL (late John Scott), The Royal Nurseries, Merriott, Somerset.

GRAPE VINES.—Fine strong planting Canes of most of the leading sorts, 30s. and 36s. per dozen for cash.

T. MILNER AND SON, Nurserymen, Bradford, Yorkshire.

CRANSTON'S NURSERIES,
ESTABLISHED 1785.
EIGHTY ACRES.
ROSES, FRUIT TREES, CONIFERS,
FOREST TREES, &c.

Descriptive and Priced Catalogues for 1878 *now ready.*

Address—
CRANSTON & CO.,
KING'S ACRE, near HEREFORD.

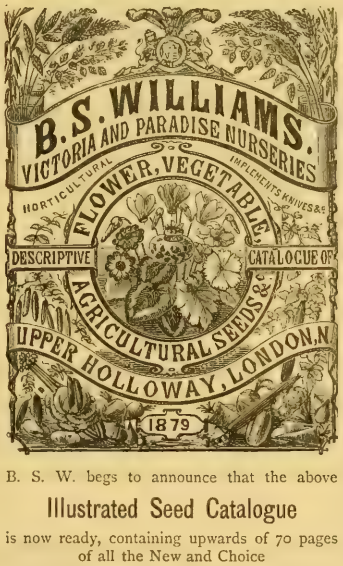
NEW CATALOGUE.
WILLIAM BARRON & SON'S
New DESCRIPTIVE CATALOGUE of Coniferæ, Hardy Ornamental Trees and General Nursery Stock, may now be had on application. A personal inspection of their unrivalled stock is solicited.

The Nurseries are three minutes' walk from the Borrowash Station, on the Midland (Derby and Nottingham) Railway.

ELVASTON NURSERIES, BORROWASH, DERBY.

WAITE, BURNELL, HUGGINS & CO.'S
GENERAL WHOLESALE CATALOGUE
Of Garden, Agricultural, and Flower Seeds is now ready, and will be forwarded post-free on application. A copy has this day been posted to all our friends, should it not be received we will forward another copy on receiving an intimation to that effect.—Dec. 20.
79, SOUTHWARK STREET, LONDON, S.E.

Now Ready, Post-free.



B. S. W. begs to announce that the above

Illustrated Seed Catalogue

is now ready, containing upwards of 70 pages of all the New and Choice

FLOWER and VEGETABLE SEEDS,

with Coloured Plate and numerous Engravings, also full Directions for Sowing, &c.

*** All Seeds amounting to 20s. Carriage Free to any Railway Station in England, and all of 40s. to any Railway Station in Scotland or Wales, or any Steam Port in Ireland.

Flower Seeds Free by Post, except heavy kinds.

VEGETABLE & FLOWER SEEDS
SEED POTATOS. TOOLS &c
BEST QUALITY - CARRIAGE FREE.
PRICED CATALOGUE - POST FREE.
JAMES DICKSON & SONS
SEED-GROWERS.
108 EASTGATE ST. CHESTER

CONIFERS, GREEN HOLLIES, and TREES.—Cedrus Deodara, 3 feet, 2s. 6d.; C. Libani, 3 feet, 2s. 6d.; Thujopsis borealis, 5 feet, 2s. 6d.; Thuja gigantea, 4 feet, 2s. 6d.; Cupressus Lawsoniana viridis, 4 feet, 2s. 6d.; Swedish Juniper, 4 feet, 1s. 6d., 6 feet, 2s. 6d.; Golden Retinospora, 2 feet, 2s. 6d.; Ericoides, 2 feet, 1s.; Gold and Silver Hollies, 2 feet, 2s.; Picea nobilis, 3 feet, 3s.; Pinsapo, 3 feet, 2s. 6d.; Nordmanniana, 3 feet, 2s. 6d., 4 feet, 4s., 5 feet, 5s.; Limes, 15 feet, 2s. 6d.; Birch, 15 feet, 1s.; Chestnuts in variety, 1s. each; Scarlet Oak, 15 feet, 1s.; Araucarias, 4 feet, 2os.; 5 feet, 30s.; Rhododendrons, scarlet, rose, white, 2 feet, 2s. 6d.; Green Hollies 1 to 1½ foot, 25s. per 100.

E. WALKER, Farnborough, Hants.

Established Upwards of a Century.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, 1, Waterloo Place, Edinburgh, beg to call the attention of those about to plant to their extensive Stock of FOREST TREES, SHRUBS for Game Coverts, FRUIT TREES, &c., which have been grown in exposed situations.

D. & Co. are now sending out their Bedding VIOLAS and PANSIES (of which they hold the largest stock in the country), Early and Late PHLOXES, &c.

Descriptive CATALOGUES free on application.

Special Offer.

W. BALL AND CO., Bedford Road Nursery, Northampton, having a very large Stock of the undermentioned Trees, &c., in fine condition for removal, have much pleasure in offering them at the following low prices :—

ASH, 2 to 2½ feet, fine, 20s. per 1000
" 3 to 5 feet, fine, 25s. per 1000
BERBERIS, Aquifolia, 1 to 1½ foot, very good, 12s. per 1000
CHESTNUT, Horse, 6 to 8 feet, fine heads, 6os. per 100
" Scarlet, 6 to 8 feet, fine heads, 100s. per 100
ELMS, Canadian, 8 to 10 feet, stems, with good heads, 100s. per 100
" English (upright), 6 feet, stems, with good heads, 100s. per 100
GORSE, single, 10s. per 1000, 1½ to 2 feet, strong.
HORNBEAM, 2 to 3 feet, very good, 20s. per 1000
LIMES, 6 to 8 feet, very fine, 50s. per 100; 9 to 10 feet, very fine, 70s. per 100
POPLAR, Black Italian, 5 to 6 feet, fine, 8s. per 100; 8 to 10 feet, fine, 12s. per 100
" Lombardy, extra fine trees, 8 to 10 feet, 30s. per 100
PRIVET, common, 2 feet, bushy, 10s. per 1000
" ovalifolium, 3 to 4 feet, 50s. per 1000
WALNUTS, extra quality, 6 to 8 feet, 60s. per 100
CHERRIES, Morello, dwarf trained, 6 to 7 shooted, extra fine 20s. per dozen
APRICOTS, Moor Park, dwarf trained, 6 to 7 shooted, strong, 24s. per dozen
ROSES, extra fine Standards, with large heads, fine varieties, 4 feet stems, own selection, 70s. per 100
APPLES, fine Standards, in variety, own selection, 60s. per 100
PEARS, fine Standards, in variety, own selection, 75s. per 100

CATALOGUES of General Nursery Stock on application.

FELTON & SONS'
SEED CATALOGUE FOR 1879
is now ready,

And contains the best Vegetables and Flowers, with Practical Directions for their Successful Cultivation.

Gratis and Post-free.

ROYAL NURSERIES AND SEED WAREHOUSE,
Harborne Road, Birmingham.
All Seeds we Sell are New and Unadulterated.

TEA ROSES
FOR
WINTER FLOWERING.

ADAM	ALBA ROSEA
BELLE LYONNAISE	CATHERINE MERMET
DEVONIENSIS	GLOIRE DE DIJON
JEAN DUCHER	MADAME FALCOT
MADAME MARGOTTIN	MADAME WILLERMOZ
MARIE VAN HOUTTE	NIPHETOS
PERLE DE LYON	SOUVENIR D'ELISE
SOUVENIR D'UN AMI	MARECHAL NIEL.

All in 8 and 9-inch pots, having well-trained flowering wood, to bloom throughout the winter.

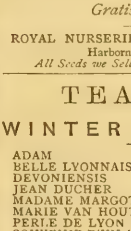
Price, 30s. to 42s. per dozen.

2,000 HYBRID PERPETUAL ROSES, in 9-inch pots, well ripened under glass, and fit for immediate forcing, 30s. to 36s. per dozen.

25,000 TEA SCENTED ROSES of all the leading kinds, in 5-inch pots, extra fine plants, 15s. to 18s. per dozen.

The Descriptive Catalogue of Roses for 1878 *is now ready.*

CRANSTON & CO.,
NURSERIES, KING'S ACRE, HEREFORD.



WM. PAUL & SON,
(Successors to the late A. Paul & Son, Established 1806.)
ROSE GROWERS,
TREE, PLANT, BULB, AND SEED MERCHANTS.
WALTHAM CROSS,
HERTS,
Adjoining the "Waltham" Station, Great Eastern Railway.

Inspection of Stock invited.
Priced Descriptive Catalogues free by post.

SPECIAL NOTICE.

THE GARDENERS' CHRONICLE

FOR NEXT SATURDAY, JANUARY 4, 1879,

WILL CONTAIN A

BEAUTIFULLY COLOURED ALMANAC,

(18 inches by 13 inches),

FROM AN ARTISTIC DESIGN BY FITCH.

PRICE FIVEPENCE.

POST-FREE $5\frac{1}{2}d.$; OR WITH ALMANAC ENCLOSED IN CASE, $7\frac{1}{2}d.$

Purchasers are specially recommended to order the Almanac in a Case, to prevent injury from folding. The cost of the Number with the Plate so protected will be 6d., if obtained through a Newsagent.

NOTICE TO ADVERTISERS.

As a large Extra Sale of this Number is guaranteed, it will be a very valuable medium for Advertisements.

APPLICATIONS FOR SPACE SHOULD BE SENT IN AS EARLY AS POSSIBLE.

W. RICHARDS,

41, WELLINGTON STREET STRAND, LONDON, W.C.

Vines—Vines—Vines.

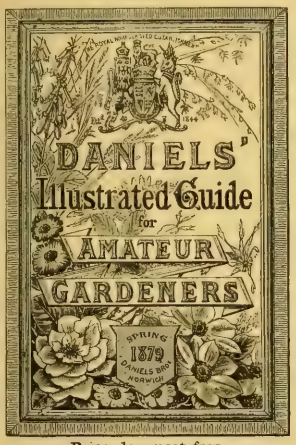
B. S. WILLIAMS begs to announce that his stock of VINES is this year unusually fine, and comprises all the leading kinds, including "Alnwick Seedling."
For descriptions and prices, see B. S. W.'s BULB CATALOGUE for this year.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

To the Trade.—Vines—Vines—Vines.

W. G. CALDWELL AND SONS have still extra strong fruiting Black Hamburgh VINES to offer, excellent stuff, at 5s. 6d. each. Also
AZALEA AMŒNA CALDWELLII, well set with buds, 18s. and 24s. per dozen.
APPLES, Standard, 40s. per 100.
,, Pyramid, 60s. per 100, in all leading varieties.
General CATALOGUE of Fruit Trees, Conifers, Roses, &c., post-free on application.
The Nurseries, Knutsford, Cheshire.

FOR SPRING, 1879.

For the Best List
OF
CHOICE KITCHEN GARDEN
AND
FLOWER SEEDS,
SEED POTATOS, &c.,
SEE



Price 1s., post-free.

Gratis to Customers and intending Purchasers.

Should be in the hands of every one having a Garden.

DANIELS BROS.,
Royal Norfolk Seed Establishment,
NORWICH.

East Lothian Stock, New Crimson.

TODD AND CO., SEEDSMEN, Maitland Street, Edinburgh, offer SEED of this splendid variety, saved from the original stock, which for years has produced 90 per cent. of double flowers. It is most brilliant in colour, and possesses the true East Lothian branching habit and perpetual blooming character.
For opinions of eminent horticulturists, who have seen and grown it, see *Gardeners' Chronicle* of December 7.
Retail price, 1s. and 2s. 6d. per packet.
Trade price per ounce on application.
TODD & Co. can also supply the Trade with carefully selected strains of the PURPLE, SCARLET and WHITE EAST LOTHIAN STOCKS.

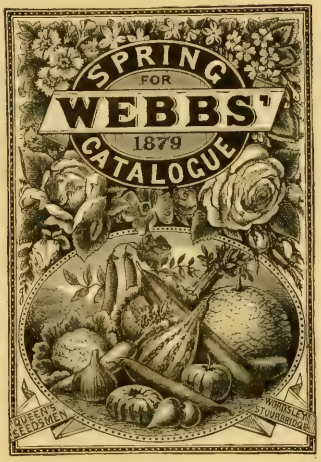
Kent, the Garden of England.
FRUIT TREES TRUE TO NAME.

THOS. BUNYARD AND SONS' new Descriptive CATALOGUE for 1878, may now be had on application. In these extensive Nurseries (nearly 100 acres) the Amateur may select his dozen, or the Market Grower his thousands of Trees, from a stock of 150,000 well-grown, beautifully rooted, healthy, and correctly named Trees. They will be packed for any part of the United Kingdom. Large quantities can be sent in a through truck at a trifling cost. The carriage will be paid to London or any nearer station, and a liberal discount given to those who prefer cash payments. Extra fine Kentish kinds of CHERRIES, KENT COB NUTS, and every variety of FRUIT noted in the county.
THOS. BUNYARD AND SONS, The Old-Established Nurseries, Maidstone; also at Ashford.

NOW READY.
Greatly Enlarged and Improved Edition.

Post-free One Shilling. Gratis to Customers.

ALL WHO WISH TO GROW
THE BEST VEGETABLES
AND
THE CHOICEST FLOWERS
SHOULD SEND FOR



Profusely illustrated with beautifully executed Coloured Plates, and hundreds of high-class Engravings, and containing

A SELECT LIST OF

THE BEST
VEGETABLE and FLOWER
SEEDS
(AT VERY MODERATE PRICES),

WITH

Complete Instructions for Successful Cultivation.

"This publication is alike remarkable for its extreme elegance and thorough usefulness."—*Gardeners' Magazine.*

"A most excellent specimen of the modern seed list and horticultural guide to successful cultivation." — *Midland Counties Herald.*

All Goods of 20s. value and upwards Carriage Free.
FIVE PER CENT. DISCOUNT FOR CASH.



THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE.



SATURDAY, DECEMBER 28, 1878.

EPPING FOREST.

MR. WALLACE'S pamphlet on the re-planting of Epping Forest, republished from the *Fortnightly Review* under the title of "On Epping Forest, and How Best to Deal with It," is a contribution of much value at this crisis of the Forest.

The brief prelude describing past litigation need not be here alluded to, suffice it that the legislature has placed the management of the Forest in the hands of a committee composed of twelve members of the Corporation of London and four verderers, who are four country gentlemen living in the neighbourhood or on the outskirts of the Forest. The committee is therefore new to the work, not having hitherto had, like the Metropolitan Board of Works, to deal with the formation of parks or open spaces. The City, however, has been so uniformly successful in dealing with any large matters to which it has applied itself, that in this too it will probably act energetically, and with some distinct aim.

Mr. Wallace, starting practically with the question, "How can the wide tracts of land be best dealt with for the future recreation of the public?" points out that the Epping Forest Act empowers the committee to form play and cricket grounds in suitable places, but thinks a very few acres will serve for this purpose, or are indeed at all suitable for it; adding that there remains by far the larger portion of the space to be dealt with.

We think Mr. Wallace rather overlooks what throughout has been the evident intention of Parliament—that the whole space was to remain as common, subject to the rights of pasturage, pannage, &c., hitherto enjoyed by the inhabitants of the twelve parishes in which the wastes are situated.

Still the Act gives the committee power to make bye-laws to regulate the exercise of these rights, and also distinctly allows the committee to enclose, "temporarily," certain portions for replanting. To this, in further examining Mr. Wallace's suggestions, we may have to allude. Considering that all was originally forest, and that Parliament retains it as a forest, he goes on to say, that on the ground of the retention of the rainfall, and the comparative scarcity of forest scenery amongst our many open heaths, the restoration of this land to forest is desirable; but he asks, of what kind? He objects to the replanting with the ordinary native trees, such as Beech, Oak, &c., as being for the next generation uninteresting woodland, and equally urges reasons for not making in one part a gigantic arboretum, necessarily second to Kew. The plan Mr. Wallace proposes, and which he claims as "novel, perfectly practicable, intensely interesting as a great arboricultural experiment, attractive alike to the uneducated and to the scientific, not more expensive than any other plan, and perfectly in harmony with the domain as essentially forest," is to "form several distinct portions of forest, each composed solely of trees and shrubs which are natives of one of the great forest regions of the temperate zone."

Quoting from Professor Asa Gray's works, Mr. Wallace points out the comparatively greater richness of the western forests of Asia, Europe and America, than of the eastern forests of these continents. The native trees of Britain

numbering only twenty-eight—of which twenty are common—the choice would be extremely limited were the space only planted with native trees, while the same authority says that "England can grow double or treble the number of trees the United States can." The forests of the several zones proposed to be here represented are :—

1. The Eastern American forest with its many deciduous trees, either free-flowering or with fine autumnal tinted leaves.

2. The Western American forest, with its rich and numerous Conifers.

3. The forests of Eastern Europe and Western Asia, with the plants of the Mediterranean coasts.

4. The most remarkable of all the forest regions of the temperate zone—that of Eastern Asia and Japan. This Mr. Wallace proposes to increase by adding the plants of the temperate regions of the higher Himalayas.

5. The forests of the temperate southern hemisphere, with the plants of Chili and Patagonia, Australia and New Zealand.

Referring to the earlier parts of Mr. Wallace's pamphlet, it is evident from his description that the portion of the Forest nearest to London already so feels the effect of the smoke from many factories of the East-end that planting in the way he suggests would be useless in that part.

Proceeding northwards the ground rises in height somewhat above sea-level, but the soil is principally of a heavy nature until we reach the large tract of undulating rising ground which, beginning north of Buckhurst Hill, and bounded on the east by the long straggling village of Loughton, rises till it forms a plateau with an elevation of 600 to 700 feet above sea-level at High Beech—thence stretching a distance of 4 miles to the old market town of Epping.

Here, if anywhere, is the situation for the forest Mr. Wallace suggests. The soil is various. On the hill-top a surface soil, about 2 feet deep, is of light sandy loam, in the open covered with heather or bracken of some years' growth—amongst the pollarded Hornbeam and Oak the surface soil having a deposit of the leaves of many past years. Below the loam there seems to be, or to have been, some varying depths of gravel; below this sand, or clay without sand. The soil of the intervening valleys seems to consist principally of the clay, with washed down deposits of the gravel in the watercourses, the springs of which rise in bogs abounding with Drosera and other bog plants.

Where the plateau becomes broader, towards Epping, some of the wider undrained open spaces are covered with a heavy sour peat. There are in this portion some large groves of high Beech trees, which are one of the most popular resorts; but most of the land is open, or at least covered with the pollards already alluded to.

A nursery in this neighbourhood, established some eighteen years since for the culture of such plants, seems to have almost anticipated Mr. Wallace's scheme, or at least stands ready to bear witness to the fitness of the soil and site for his experiments. Taking his several zones, the plants of each which have been found to thrive extraordinarily well there can be cited.

Of the trees and shrubs of his first or Eastern American zone, of course Rhododendrons, Azaleas, and other lower growing shrubs, as Kalmias, Andromedas, are thoroughly at home, while the bog plants, the Cranberries, the Rhodoras thrive. In the bogs likewise, side by side with our native Droseras, the Sarracenias thrive, flower, and seed. The herbaceous plants of these woods, the Trilliums and Spergulas, as well as the glorious North American Liliums, superbum and others, grow, flower, and increase as if at home.

Of the forest trees of the zone which have taken kindly to the place we can instance the Scarlet Oaks (which in one year grow as much as in the lower Lea valley in three). The Tulip-tree, in its several forms, the Robinias, the beautiful Acers, such as saccharinum, dasycarpum, and others; Gymnocladus, Gleditschias, and Liquidambar; while the deciduous Magnolias, such as M. glauca, M. acuminata, all attain tree-like growth. The deciduous Cypress is at home, and the evergreen Firs of the zone, P. rigida and P. Strobus, succeed well.

George Paxtel.

(To be continued.)

New Garden Plants.

CYCAS SIAMENSIS, Miq.*

A species resembling C. circinalis. The specimen before us has a stout, glabrescent, oblong stock, 16 inches in circumference, marked with circular furrows, almost as in the root of Bryonia dioica. The leaves measure about 30 inches by 8 inches, are oblong in form, flat or slightly revolute at the edges, and pinnately divided into about sixty-five pairs and one terminal segment. The lower thirteen or fourteen segments are represented by spines which extend nearly to the base of the stalk, there being no intermediate form between the leaf-segment and the spine. The rachis is puberulous, rounded above, more so beneath. The segments in the centre of the leaf measure about 4 inches by ¼ inch, and gradually diminish in size towards the apex and towards the base; all are linear-lanceolate, abruptly spine-pointed at the apex, and decurrent at the base along the rachis; the midrib is prominent on both surfaces.

The species was imported from Cochin China, and is now in the collection of Mr. Bull. *M. T. M.*

ZAMIA? AMPLIFOLIA, *Hort. Bull*, n. 1473.†

This is a handsome species, with an oblong obtuse glabrous caudex. The leaf-stalks are erect, terete, purplish, puberulous, 15—16 inches long, about the thickness of the little finger, and with scattered minute prickles. The blade is unequally pinnatisect, 4½ inches long, the segments in two pairs; each segment is about 11 by 3—4 inches, glabrous, coriaceous, yellowish green, broadly ovate, lanceolate, acuminate, obliquely wedge-shaped at the thickened base, entire, strongly ribbed on both sides, rachis angular.

This seems to differ from any species in cultivation, and is not referable to any form described in books or herbaria. Possibly, however, when better known it may prove to be a variety of Zamia Roezlii or Z. muricata. *M. T. M.*

ENCEPHALARTOS ACANTHA, *sp. nov.*‡

This is a very distinct looking species, presumably an Encephalartos, though the fructification is not yet known. It was introduced to Mr. Bull's nursery from Graham's Town, and there is at Kew a small specimen in cultivation, but it is not represented in the herbarium, unless a fragment from Natal be referable to the same species. The stock is subglobose (4—6 inches in circumference), afterwards becoming cylindrical, with ash-grey woolly tomentum, and marked above with the prominent triangular bases of fallen leaves and with perulæ.

The leaves, which are arranged in a terminal crown, measure some 28—30 inches (inclusive of the petiole, 4 inches), by 3—4 inches, and are oblong-obtuse, arching and conduplicate. The petiole and rachis are terete or somewhat flattened on the upper surface, destitute of spines but covered with woolly down at first, the segments closely crowded, nearly opposite, in 120 pairs, ascending, those in the middle of the leaf 3 inches by ⅛ inch, the others gradually diminishing in size towards the base and apex, all linear oblong, scarcely tapering at the base, ending suddenly at the apex in a short translucent spine, somewhat glaucous above, marked beneath by five prominent nerves, and with thickened margins. The name acantha = spina piscis, is applied from the resemblance of the leaves to the vertebral column of a fish. *M. T. M.*

STANHOPEA TRICORNIS, *Lindl.*

A delicate pallid small Stanhopea plant of the usual shape, with a pendent peduncle with two flowers of extraordinary size, when compared with the small bulbs. The flowers are quite astonishing. Nobody could decide at a distance they belonged to a Stanhopea. The lateral sepals are spread, the odd one is bent backwards over the ovary. The lip cannot be seen, for the petals make a cover over it, leaving part only of the broadly winged column to be seen between them. The petals are commonly inflexed at their tops, as if to protect the anthers against the insects, to speak in modern manner. The lip has a nearly half-globular hypochile, ligulate acute horns, with a tooth on the inferior side, and an oblong retuse epichile, that has a sort of a goitre under its apex, just as one sees in Vanda alpina and its allies of the cristata group, or in Renanthera labrosa (Arrhynchium labrosum, Renanthera bilinguis). A triangular depressed blade stands at the base of the epichile, showing a few indications of obtuse teeth. The column has broad oblong wings. When I saw the flowers fresh they were of a whitish ochre colour, having their tips a little darker. Crimson spots stand internally on the disk and base of petals and on the very base of sepals, shining through the rather pellucid hyaline tissue. The ochre-coloured hypochile has white longitudinal lines externally. It is rough internally, showing at once some rather dark purple dots. The horns and epichile are of a darker ochre colour, verging to light undecided orange. Wings of column of most pallid ochre, body green.

These were the colours of the just expanded flowers. I took them to Ems, and when I there opened my precious box I was exceedingly puzzled to see the petals and base of the lip of a light copper colour, as in Phajus cupreus, Rchb. f. (Limatodes mishmensis, Lindl.), where they are other times light purple. A woodcut showing a flower and a lip had been published both in these columns, 1850, p. 295, and in Paxton's *Flower Garden*, i., p. 31. I could well understand the correct representation as soon as I had seen the living flowers. The discoverer of the species (my late celebrated friend, J. Von Warscewicz) had sketched pink petals, other parts white. No doubt he saw the flowers only at a later period. They appear to last a good while longer than is usually customary with Stanhopeas. The species has been collected quite lately (April, 1877) by Mr. Low's excellent collector, my German countryman, Mr. F. C. Lehmann. He found the flowers yellowish white, coming, no doubt, when they just had expanded.

This very rare and very extraordinary plant was once in the garden of old Horticultural Society at Chiswick. I possess a very good specimen, with Dr. Lindley's autographic label, sent in 1855. The plant is also very well represented in his herbarium. I never saw the plant alive. Thus you may imagine my pleasure and satisfaction when I saw it in September flowering at Burford Lodge, Box Hill, near Dorking, in Sir Trevor Lawrence's collection which might be called an orchidic *féerie*. My gratification even increased when the two flowers were in my possession, well packed in a box. They were sketched at Kew and sketched at Ems, and I dried them quite reluctantly, sorry to lose sight of their interesting features. I had some scrupulous thoughts in naming it, the more since Dr. Lindley's types in his own collection show very different, far straighter, narrower horns. Yet my seven specimens show all transitions, and I finally can state that those organs show great variation. Sir Trevor Lawrence kindly informed me that his plant was obtained at a Klabochian sale ensconced between the stems of a Bollea cœlestis, and probably quite overlooked or despised by the other visitors. *H. G. Rchb. f.*

CYMBIDIUM AFFINE, *Griff., saltem Lindl.**

This is in the way of Cymbidium eburneum and C. Mastersii in growth, with flowers more like those of the last species in a rich raceme. The lip supplies the difference. The flowers are white, with a few purplish dots on the anterior part of the lip. As to the hairiness of the lip it only appears afterwards, when the specimen is dried. I have seen it in the very types of at least Dr. Lindley's C. affine. I believe myself right in combining this with C. micromeron, Lindl. As to Dr. Griffith's representation, tab. 291, it (might be better not to quote it at all. It looks so much like the common C. Mastersii, and the inner surface of the lip not

* *Cycas siamensis*, Miquel ex A. D.C. Prod. xvi., ii., p. 528; Regel, Cycadearum Gen. et Spec. Revisio, p. 10.

† *Zamia? amplifolia*, Hort. Bull.—Petiolis pubescentibus sparse aculeatis; foliis 2-jugis segmentis subsessilibus late oblique ovato-lanceolatis acuminatis integris basi cuneatis incrassatis, utrinque prominenter plicato-nervosis glabris 11×3 poll.—Ex. Nov. Granat. in hort. Bull. introduct.

‡ *Encephalartos acantha*, Mast., n. sp.—Caudice subgloboso, serius cylindrato, elato, cinereo-lanuginoso superne foliorum defluxorum reliquiis crassis trigonis notato; foliis (petiolo 4—5 poll. incluso) 28—30 poll. × 3—4 poll. oblongo-obtusis arcuatis complicatis pinnatisectis, petiolo inermi rachique teretibus vel superne parum complanatis lanuginosis glabrescentibus; segmentis numerosissimis (ad 120-jugis) subopposititis ascendentibus oblongo-linearibus integris basi vix attenuatis apice subito in spinulam desinentibus, superne subglaucis subtus prominenter 5-nerviis, marginibus incrassatis vix revolutis in medio folii 3 poll. long. ¼ poll. lat. basin et apicem versus gradatim decrescentibus; strobilis hucusque ignotis. — Ex Graham's Town, Afr. Aust. in hort. Bull introduct. Specimina 4 vidi.

* *Cymbidium affine*, Griff. Not. iii., 3, saltem Lindl., Cont. n. 180.—Foliis linearibus acuminatis loratis rigidis; racemo erecto seu prono subæqualibus; racemo vaginis acuminatis densis vestito apice plurifloro; bracteis triangulis obtusatis; sepalis ligulatis acutis; tepalis linearibus acutis, labello flabellato apice trifido, laciniis lateralibus triangulis antrorsis; lacinia media cuneata oblonga undulata, carinis geminis a medio disco usque ante basin laciniæ mediæ, ibi semiovato dilatatis; columna trigona anguste alata apice inclinata basi cum labello connata.—*Cymbidium micromeron*, Lindl. Cont. d. 184. *H. G. Rchb. f.*

being represented at all, it cannot be judged. It might perhaps be wise to call it C. affine, Lindl., if Dr. Lindley had not apparently described it a second time. It is at once the second C. densiflorum of Griffith. Grave mistakes have been connected with this plant. I have to acknowledge the late Dr. Lindley's assistance and to thank Mr. Low for various materials. Lately I had an excellent inflorescence from Messrs. Jacob-Makoy, Liège. *H. G. Rchb. f.*

THE WEATHER AND GARDEN PETS.

The weather during the first half of the month of December has been very severe, very much more so than it has been for several years past. Ever since the month commenced the ground has been covered with snow, and the minimum temperature has never exceeded 32°, or freezing-point, and on the night of the 13th the mercury fell to 10°, or 22° of frost, and the temperature has on several occasions been only 28°. So, while the necessary protection is being very properly accorded, as far as is possible, to all tender, or supposed tender, plants, I should like to say a word in behalf of certain birds and animals, whose misfortune, I may say, has placed them in the position of what are known and have been alluded to in your columns as garden pets, and which, when severe weather such as we are at present experiencing sets in, are too frequently, I fear, left to their fate, which means a miserable death from cold and starvation. Now this ought not to be the case, for many of them are very useful in their places, and all of them are more or less interesting; and besides that, we have taken it upon ourselves to deprive them by some means of their liberty, consequently they are entitled to our consideration and protection. Soft-billed and insectivorous birds are generally selected for this purpose, and to prevent their escape they are usually pinioned, or the strong feathers of one wing removed. And when such are turned into walled-in gardens they are seldom any further trouble, as they will generally contrive to get their own living, unless it be during very severe weather, when the ground is frost-bound, and a supply of insect food is not to be obtained. During such weather it is necessary to give them the protection of a shed of some kind; or even an orchard-house or similar structure, where they will do no harm to trees or plants the house may contain. While during their necessary confinement they should be supplied with food as nearly approaching in character to their natural supply as possible, with access to water, and as soon as a favourable change in the weather takes place, they should be restored to their partial liberty, namely, the run of the garden. Treated thus, birds will live to the full or natural term of their existence, enjoy life, and become familiar with their protectors, and evidently appreciate the kindness shown to them.

Of birds suitable to be adopted as garden pets are various kinds of ornamental water-fowls, ducks, seagulls, teals, and even the stork. But in the case of most of the above feeding will be necessary, as the extent of an enclosed garden will be unlikely to afford an adequate supply of insect food; and there is also an objection to large web-footed birds on account of their treading upon flower-beds, &c. But this objection does not apply to the smaller species of gulls and other seabirds, the water or moor-hen, the curlew, the lapwing, &c., all of which tread so lightly that injury from the same is hardly possible to the most delicate plant or flower, and the amount of insects of various kinds which some of them will consume is very considerable, and, as has been already stated, they will only require attention in the way of feeding and protection during periods of very inclement weather. Birds of the sea-gull species generally become very tame, and will follow about those who are in the habit of feeding them; and the pretty little lapwing is readily induced to do the same. The curlew, however, although a very pretty bird, with an exquisitely beautiful eye, does not by any means appear to be vain as regards his personal appearance, and keeps as much as possible out of sight, and on account of his peculiar shade of colour it is somehow not very easy to perceive him at a distance, nor even when at hand. And apparently in possession of a knowledge of this fact he takes advantage of it, and instinctively throws himself flat upon the ground, with view of avoiding observation, and so certain does he appear to be of having succeeded in doing so, that he will not unfrequently allow himself to be picked up. Altogether he is one of the shyest of birds, and even when cold and hunger induce most of our feathered pets to become more familiar, and to seek for food and shelter still, as it were, from the hand of man, the curlew declines to do so, but will seek a sheltered spot, and quietly lay himself down to die when his supply of food entirely fails him. Consequently he should be looked up when the weather becomes fairly frost-bound, and turned into a structure of some kind, where he will be found to take kindly to beet, mutton, or an animal diet of any kind, which should be cut into conveniently small pieces. His natural food is earthworms, caterpillars and grubs of all kinds, ants, and I believe slugs—in fact few things come amiss to him so it may well be supposed that he is a really useful garden pet, and, unlike most of them, he feeds principally during the night. *P. Grieve, Culford, Dec.* 18.

ARTIFICIAL HEAT.

Along with the season of Advent and Christmas, we have to make preparation for withstanding the cold weather, for our variable clime is subject to serious changes, grievously affecting young plants in the nurseryman's hands, and threatening things more established; in short, trying every green thing. It was but the other day that we read in the newspapers of her Majesty taking an airing in a sledge through the deep snow in Aberdeenshire, and this may be regarded as "Coming events casting their shadows before," for when foul weather has got a footing in one country, it may be looked for in the neighbouring localities, and may be truly called a sign of the times. The safest prophecies are those that come after the event; they never err, because they do not forecast. The coming good we may hope for, but the past is a matter of history, and runs no risk of failure; therefore, we may safely say that the winter of 1878 has begun to show its teeth early, and plants call for protection, covering, heat, &c., to tide over a long and severe winter, should such be our fate, and to live where coals are cheap. At Oakhill, East Barnet, in the late Sir Simon Clarke's time, there were three Pine-stoves, quite models of perfection, with copper styles between the squares of glass, and the iron rafters were perforated, so that two bolts held each light from sliding, and these were worked by a catch, so that air could be given or taken away *instanter*, which is a matter of the greatest importance in changeable weather; but the greatest improvement in the artificial heating was in the way the Pine-stoves were protected from the cold and wet at night. I speak advisedly when I name keeping off the wet, for if the glass is wetted with rain or hoar-frost the cold at once begins to tell. These stoves were duly thatched every night during cold weather with reeds mounted on light frames, and fitted with casters to save friction on the sashes. The saving of fuel was worthy of consideration, but the snug way that moisture was retained during the dark hours of night was quite sufficient to give the preference to this mode of covering over that of Russian mats, &c.

Artificial heat is not desirable, and many plants do well with straw coverings in all sorts of ways, but when actual firing has to be resorted to, it is no easy matter to imitate a mild climate. When it is only to keep out frost, as with a house of Pelargoniums, dry heat is best; with sturdy exotics like Pine-apples, moisture is wanted as well as heat, but the plants being short in stature are easily managed in low pits. It is quite different, however, with such rambling plants as the Vine, which require the heat and moisture, one way for growth and another for flowering and fruiting. Mr. Pince's foreman (Lucombe, Pince & Co.) had a roll of straw in the form of a web, tied at one end by twine, so that it could be easily rolled on to the cold frames or off, and being light could be worked by boys. The plants thus covered were not quite in darkness, as some light passed through the straw covering, such as one may see under deep snow. The late Dr. Lindley had an idea that in order to cultivate the rare alpine plants we should imitate the snow on the mountains by covering the cold frames with mats, &c., for a time in the depth of winter; and this was tried at Chiswick along with Ferns on rockwork made of castaway bricks; and it was no easy matter to know such plants as Osmunda regalis, a true aquatic, 6 or 7 feet high, in a standing pool in its native habitat, from the dry-land specimens at Chiswick.

But to return to the reed covering. Reeds are far preferable to straw, as they are longer and stronger than straw, and so very light and wear so well. Those at Oakhill were made by a carpenter, and were no makeshift things, and to my knowledge they had done good service for twenty years, and had saved their cost in fuel. It is the wind that is always the trying point with artificial heat: it is easily maintained in calm. Captain Parry's crew found the wind unbearable in the northern regions, and every gardener knows to his cost the value of shelter, and how small a protection makes all the odds between life and death to a plant quite hardy in one place and tender in another. *Alex. Forsyth, Salford.*

PEARS FOR LATE USE.

At p. 697 Mr. Keetley alluded to the culture of Pears at this place, and asked for information. I find it very difficult to lay down any straight line of proceeding for the culture of winter Pears — the whole thing is wrapped up in so many circumstances, the greatest of all being atmospheric changes. We never get too much heat, but often too much cold and too much wet, in the absence of heat; moisture and sun-heat are two essential elements in the culture of good Pears. The soil, which is various in different localities, has a wonderful effect on the growth of Pears. No doubt a good strong rich loam is the best suited for Pear culture. The border should be as rich as a Vine border, both for making good strong spurs and for growing the fruit to a good size and full of quality. The spurs should be as near the wall as possible, to allow the fruit to get the benefit of the heat contained in the wall.

Root-pruning the Pear I have a great objection to, because the fruit must be small if the feeders are cut away. If my trees are too vigorous to make fruit-spurs, I ring the branches by taking out about one-eighth of an inch of bark all round with a sharp knife. This will have the desired effect of producing spurs, and the following season fruit is almost certain, the weather being favourable. The ring in the bark should be made as early as possible, when the bark will separate from the wood, and by autumn the two barks will be united, and ready to assist the swelling of the fruit in the following summer. If once a good quantity of spurs and fruit is produced, ringing is hardly ever necessary afterwards, as Nature will do its own work, and the tree bears fruit in consequence.

The varieties I now grow are very limited, and it must be taken into consideration that I am situated 40 miles north of York, and I find so many of the varieties so highly recommended by writers in the South to be quite useless here—some are too small, and others not at all suited for the climate. It would be difficult for me to name a promising variety that I have not tried here, quantities of them have now disappeared and are almost forgotten, and have given place to a few favourites.

Marie Louise is the greatest favourite of all, and no wonder, for I can supply the table with this Pear through the months of October, November, December, and a little into the new year; the size, if not very large, runs up to 10 oz., and it is exceedingly handsome. Our daily average use in November is about thirty Pears. I have the Marie Louise Pear grafted and ingrafted four times over in some places, and I must say the stock has a wonderful influence on the fruit. One grafted on the white Doyenné Pear comes in very early, and often ripens on the tree by the last week in September; the next for earliness is twice grafted on the Autumn Bergamot, the one after this is three times worked, the last on the Swan's Egg Pear. I have a fine lot from this stock generally, and they are the best we have in quality. Those ingrafted on Gansel's Bergamot are great bearers and grow to a good size; those ingrafted on the Beurré Rance are in use now, and will continue through the month.

Winter Nelis is the next favourite sort to follow the Marie Louise. It is four times grafted, the last time on Uvedale's St. Germain's. This sort has wonderful vigour so grafted, always bears plenty of fruit, is always good, and never cracks. This sort is no use here on the Quince stock, it grows too weak.

Glou Morceau twice grafted, the last time on Beurré Rance and on a south wall, is generally good and comes in for January and early in February; they are not so fine as I have had them other years: the

earliest blooms were killed in the spring, consequently they did not grow so large as usual. They are fine for stewing, and for that purpose they are being used this year.

Easter Beurré is the next favourite, and a grand old Pear it is, always good; if not left to spoil itself on the trees, with a little management this Pear might be had in use for a long time. This sort I have grafted on various stocks, but none on the Quince. The sorts I have named will carry me through a winter, but I have many other good useful sorts to fill up a gap if needed. The common early summer Pears are no use here for table.

The Jargonelle is the first to be of use to me: this is grafted on the Pear stock, and is very fine generally; on the Quince it is subject to canker and useless. Marie Louise ingrafted on the Jargonelle never bears any fruit worth naming, and what it does bear is very small. I expected great things from this stock, and grafted three trees, two of which are now destroyed—the other I will give another trial, as it has a good promise of fruit-buds, after being very liberally treated at the roots, to give it strength. The blooms of this tree are very tender, and stand no frost when in flower.

The next to follow the Jargonelle is that monster Pear, Souvenir du Congrès, two fruits of which will make a dish, and if eaten just when it is ripe it is delicious. It has a nice colour, and is very handsome on the table.

Williams' Bon Chrétien comes in about the same time, and like Souvenir du Congrès requires to be gathered before it is ripe to have it fine in flavour.

Beurré d'Amanlis ingrafted on Hacon's Incomparable is always very large and excellent in flavour, and will ripen on the tree or in the fruit-room.

Louise Bonne of Jersey is another fine-flavoured Pear, but should always be on a vigorous stock. It is poor on the Quince stock, and apt to crack.

The Seckle Pear I have tried on various strong stocks, but to no purpose; it is highly perfumed, but only required to be sent to table here once or twice in a season: it is too small.

When I added Doyenné du Comice to my stock, I thought I had a great catch. I ingrafted it on various strong-growing stocks, and tried to palm it off as superior to Marie Louise, but Mr. Milbank pronounced it too sweet and wanting the fine aroma of the Marie Louise; however, it is a good useful sort for our climate and soil, and does well on any stock except the Jargonelle.

Beurré Diel ingrafted on the Swan's Egg Pear is delicious and very large, but always a little gritty.

Duchesse d'Angoulême is never first-rate here, neither is Beurré Clairgeau.

Dunmore is a large, handsome Pear, and well suited to this climate; although it is not of the first quality, it is a good Pear.

Hacon's Incomparable is a large handsome Pear of first-rate quality on the old Pear stock, but is rather shy in bearing, though it bears well on the Quince, but the fruit is rather small.

Josephine de Malines is very uncertain in quality, but bears well on any stock; not thoroughly good except in very fine seasons, but useful for the kitchen.

Beurré Hardy is a most delicious Pear ingrafted on the Pear. Beurré Sterckmans, Knight's Monarch, and Ne Plus Meuris, are only very moderate sorts here. Beurré Rance never ripens here, and is only good for stewing.

Beurré Superfin is a good useful autumn Pear, if grafted on the Quince; grafted on the Pear here it is very poor in every way. Bergamot Esperen in fine seasons is very useful.

The gathering of Pears requires to be studied very particularly. The melting Pears will mostly bear hanging long on the trees without losing the flavour, while the gritty sorts should be gathered as soon as they show signs of ripeness, and are much improved if finished off in a warm temperature. *William Culverwell, Thorpe Perrow.*

ON THE CULTURE OF PELARGONIUMS FOR AUTUMN AND EARLY WINTER FLOWERING.

(*Concluded from p. 784.*)

THE pots and their preparation will be the next matter for consideration. The size I use is 8-inch. These, if new, are previously soaked in clean water, or if they have been in use are well washed both outside and in, and drained by placing one large piece of broken pot over the hole in the centre, and a few pieces placed carefully round about it. I may here say that I am by no means an advocate for the traditional 2 inches of drainage which used to be the universal precept and practice as well when I first began to crock pots. I am persuaded that a few pieces of drainage carefully placed in the pot serve the purpose as well if not better than any quantity thrown in promiscuously, and at the same time preserve for the use of the plant additional feeding space where it is most wanted.

The plants are now taken to the potting bench and turned out, the old drainage removed with as little injury to the roots as possible, and any loose or exhausted soil about the top of the ball cleared off. A few rough pieces of the compost are now placed over the drainage and pressed down firmly, leaving the soil in the bottom of the pot in a slightly conical shape. On this cone the ball is placed with the loose roots hanging round its sides—not doubled up under the ball, as is too often done by careless operators. The compost is now filled in and firmly pressed down with the potting stick and finished, so that there is a clear space of an inch left for water. I may here observe that in all the potting operations I have with Pelargoniums, hard potting is the rule. This induces a stiff habit of growth, the formation of flower-buds in greater profusion, and enables the plant to hold out much longer. The plants after being potted are again returned to the cold frames, and placed so wide apart that each plant stands a few inches clear of its neighbour. They then receive a copious watering, which by the way is the only care they will require for the next six weeks.

If greenfly put in an appearance during the summer it must be instantly suppressed. My plan to destroy this pest on plants growing in cold frames, is to dip them in a composition made up by dissolving soft-soap in rain-water in the proportion of 2 oz. to the gallon; to every 10 gallons of this liquid 1 gallon of tobacco liquor is added, and strained through a piece of double tiffany. I have a barrel filled with composition always at hand, into which any plant infested with thrips or greenfly is dipped overhead as soon as observed, and I have had no trouble with greenfly since I adopted this plan. If, however, our plants are grown freely, and guarded against checks of any kind, insects should not give much trouble.

By the beginning of August our subjects are arriving at maturity and showing their flower-buds in great abundance, and this is the time to have them tied out. With the compact growing sorts of the Digby Grand type I simply insert one stake in the centre of the plant, tie the longest shoot to it, and loop the others to it with a strand of matting. The taller growing varieties have, in addition to the centre stick, from four to seven round the side of the pot to which the side shoots are tied, care being taken that the sticks are not longer than the foliage will hide. In short, when this operation is properly done the sticks are little seen, and the stick nuisance reduced to the minimum. By the end of the month I prepare to have them taken indoors, by having them dipped as already described, the pots washed clean, and the drainage seen to be in good order. They are then placed in the position they are to occupy during the winter, which should always be the driest and lightest part of the greenhouse or conservatory, where they will for the next three months amply reward the cultivator for all the care bestowed upon them.

The treatment they require under glass does not differ in principle from that which I have already described. Plenty of pure air, judicious watering, freedom from insects and damp, constitute the sum total of their requirements. At the same time it would be folly to say that during the dull and often sunless days of September, October, and November, the application of these principles is as easy as during the summer months. No, it requires considerable discrimination and care to know when to give air and when to close, when to give water and when to withhold; and as for insects there is but one way with them at all seasons, viz., extermination. For the benefit of my younger brethren I will make one or two observations on each of these heads.

With air I will associate temperature, and say that between 50° and 60° I consider the safe medium for plants of this class in flower or coming into flower during these months. Air is admitted every day, and in mild weather at night as well, but in less quantity. If, as often happens at this season of the year, we should have wet and sunless weather, I turn on the heat for a few hours during the day, leaving the ventilators open. This counteracts the tendency to damp that obtains so largely with plants grown in the open air. Avoid by all means a close and moist atmosphere, for Pelargonium flowers cannot be kept many hours in condition in a close atmosphere surcharged with moisture. Cold draughts are equally to be avoided, for in addition to the direct injury done to the plants greenfly invariably follows.

The water should always be of the same temperature as that of the house, and never be administered until the plants are in want of it. Aim at keeping the roots always in the same condition as to moisture; nothing brings disappointment and failure so soon as extremes of watering. Weak guano-water will be beneficial when the plants have been in flower for some time, or a pinch of Standen's manure may be sprinkled on the surface of the pot once a month.

If the air, temperature, and water have been carefully attended to insects will not be troublesome. If they should appear a gentle fumigating on a dull calm afternoon when they are dry, or a dip in the soapy-water barrel will keep them in check. In every stage of their growth greenfly is their deadly enemy, but at this season it is positively fatal, and there can be no success while they are tolerated.

It will be necessary at this season to go frequently over the plants and pick off the foliage any fallen petals, or dead leaves, which, if left on, will soon communicate their own taint to the healthy parts. Early in December I induce them to rest by withholding all stimulus to grow. By the third week in January they are again encouraged to grow, and by the middle of March they will again flower, and by generous treatment will bloom in profusion during the spring and summer, and even until their successors are ready the following August. I have plants at present, treated as I have described, which have been in flower for more than twelve months, and that is more than I can say for any other plant I grow.

I will now mention a few of the sorts I find most useful, and which I can recommend to every one who wishes to grow these lovely flowers.

Madame Toulongeon.—A variety not so well known as it deserves to be. The flowers are large, rosy carmine, shaded with violet in the throat, and suffused with white. A great producer; the habit is somewhat loose, but withal it is a splendid variety.

Digby Grand.—Flowers pearly white, with veined spot on the upper petals, and fringed edges. A well known and free-blooming variety, and one of the best habited Pelargoniums in cultivation.

Marie Lemoine.—One of the most useful and charming of its class. Its blooms are of the purest white, with feathered spot of delicate pink on the upper petals, and of excellent habit. Though not so profuse a bloomer as the preceding yet, from the chaste beauty of its flowers, it is invaluable wherever cut flowers are required.

Triomphe de St. Maude.—A light purplish crimson flower, with dark spot on the upper petals. Large flower, of great substance, produced in bold trusses, fine stiff habit, a most desirable variety.

Bridal Bouquet.—An extremely free-flowering and attractive variety, producing fine large trusses of beautiful pure white flowers, with delicate rose spot on upper petals, and finely fringed.

Annie.—Pure white flowers with feathered pink spot; large truss, robust habit, and abundant bloomer.

Fire King.—Deep magenta with crimson-purple shade; a fine large crisped or double variety of good habit. The flowers are the most persistent of any Pelargonium I know.

Mrs. Bradshaw.—A French variety, with white flowers and dark spot on each petal, produced in great profusion; a dwarf-habited and useful variety.

Marchioness of Lothian or *Magnet.*—A light purplish crimson variety, with dark spot on upper petals; a free-blooming and useful variety, though the form of the individual flowers will not pass muster with florists of the Glenny school.

Grande.—Pure white flowers, without spot or wrinkle, of dwarf compact habit; indispensable wherever white flowers are required.

Floribundum.—Bright rosy crimson flowers, produced in great profusion. Habit is all that could be wished, though the size of the flowers is smaller than most of the preceding, yet a most useful variety.

Red Gauntlet.—Bright rosy carmine flowers. A well known variety.

Alex. McKenzie, Warriston Nursery, Edinburgh.

ICE-WELLS AND ICE-HOUSES.

AT this season of the year, and especially this year, when King Frost is asserting his old authority over the earth and the water, the following illustrations of various structures for preserving ice may be of use to some of our readers:—

Fig. 131 represents an ice-well which is said to cost from £14 to £16. Such a well is perfectly adapted for use in either a chalky or a clayey soil, but in porous soils, or where water is found near the surface, an ice-house above-ground, with double walls, must be substituted. If the soil be wet and stiff clay or chalk, the sides should be brick or concrete, and well wattled before the ice is put in. There is a small door opposite the large one, 2½ feet square; this door and a small one of 15 inches in the large one is to be opened every evening, and shut before daylight.

Fig. 132 is another ice-well set beside a deep ditch. This illustates one very important principle in keeping ice, which is that the water formed by the melted ice must be got away, and that without the possibility of the air finding its way in by the drain-hole. The best plan of securing this is to use a bent pipe as at A in this figure. A shows the well, 8 or 10 feet deep, the adjacent ditch being deeper; B are faggots placed on the bottom, C is the curved pipe already mentioned; D is earth taken from the well to make the sides higher. The sides should be lined with dry Barley straw.

Fig. 133 shows another form of well. A B is a conical hole in the ground; C D are stones or rubble 18 inches deep to act as a drain; A D are slabs 4 feet high above the surface; E is the door; F is a trap-door to answer a similar one on the opposite side, to be opened in a dry state of the air and carefully closed when the atmosphere is damp. Both this and the former plan are said to be cheap and effective.

Fig. 134 is an ice-house of a different character. Here in the diagram A is the centre of an arch 10 feet in diameter, and at this point a post 15 feet above the ground level is set up; B B represent fifteen posts 9 feet high and about 2 feet apart; C C C are fifty-four posts 5 feet high: the 4-feet space between

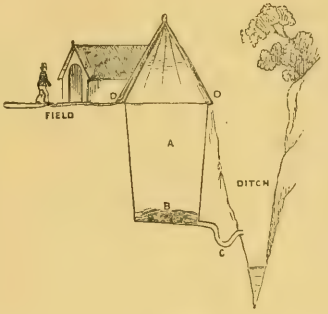


FIG. 132.—ICE-WELL.

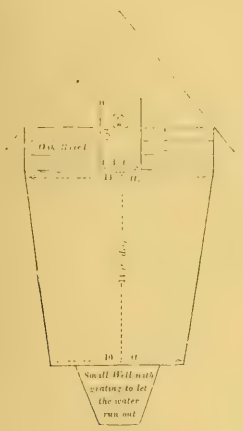


FIG. 131.—ICE-WELL.

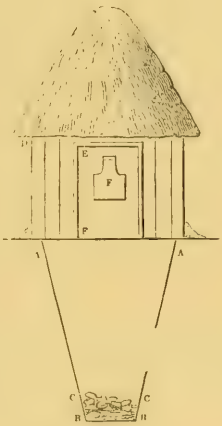


FIG. 133.—ICE-WELL.

these circles of posts is packed firmly with straw; E is a passage through the wall, D being the outer and F the inner door. B shows a section where, as at N N, the straw is shown to be dense and firm. C is a view of the roof, which is formed of well prepared Wheat or Rye straw, 4 feet thick.

Fig. 135 shows in section a natural contrivance for preserving ice. In this figure A represents the ice, B a wall of fern 3 feet to 4 feet in thickness, C the thatch. The walls are first built up, then shored and secured with hurdles. A little clean straw is first strewn over the ice, then 18 inches of fern, and after that comes a waterproof straw thatch. An ice-house of this kind answers perfectly when placed on an incline so that water may naturally drain away. The necessity for this natural drainage indicates that in the case of artificial excavations they should be made in dry soil, or in that which is perfectly well drained both from surface and subsoil water. In an icehouse on a bank, such as that shown in the figure, shade is desirable but not essential.

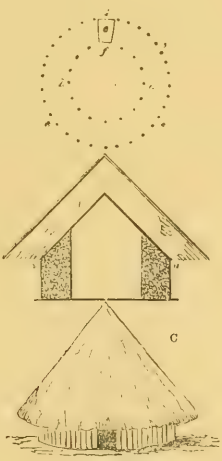


FIG. 134.—ICE-HOUSE.

SALVIA SPLENDENS, ETC.

PERMIT me to endorse the high estimate given of this fine old plant in a recent number of the *Gardeners' Chronicle*. It is assuredly one of the most valuable of all plants for the winter decoration of the conservatory, cool stove or intermediate house. The practice of planting out in the summer and lifting in the autumn also suits this and kindred Salvias remarkably well, though they also flower freely when grown in pots in the open air from May to September. Another good mode of treating this Salvia is to strike late cuttings in June, pot in rich soil, stop two or three times, give a final shift into 6, 8, or 10-inch pots in August, and by this means secure dwarf plants that hide the pots with their fine vigorous foliage and dazzling spikes of brilliant scarlet throughout the most flowerless months of late autumn and winter. These look fresher and better than older plants. This Salvia also does well kept as dwarf as possible and pegged down as a basket plant. Those most familiar with its brittle character, however, will at once recognise that this style of treatment needs considerable care and caution, for the shoots break like glass unless carefully handled. But to succeed in basketing the Salvia splendens is worth some extra pains and labour, as few sights are more gorgeously rich and beautiful than a well-filled basket of this fine Salvia, with its bending plume-like spikes, filling the eye of the beholder as he looks up to it. Tall plants are also most useful, and form a rich and brilliant contrast at this dead season of the year to the prevailing colour of Chrysanthemums and other plants. A white variety is advertised, which I have not yet grown, which will prove useful as a contrast, and the more so as white flowers of that character are extremely rare.

From the fugitive character of the separate flowers after the spike is cut, and the difficulty of mounting them separately or in masses, this Salvia is of less value for cutting than might be expected. It forms, however, a rich mixture and contrast with other flowers while it lasts; and as new spikes and fresh flowers are produced in succession for a long time it is, as you say, a plant from which the decorator may cut freely, and come again and again for more on each succeeding morrow. But it is as a decorative plant in pot, tub, basket, or planted out in conservatory bed or border that the Salvia splendens appears in its truest and best character, and almost without a rival among plants.



FIG. 135.—ICE-HOUSE.

The Salvia gesneriflora flowers very much later than the splendens, though almost as brilliant and useful in its season. It bears heat also as well or better. The finest specimens I have ever had of this Salvia were planted out in June, lifted and potted in September, allowed to stand in a cool house till the middle of November; they were then placed in an early vinery at work about the end of the year. The sudden change of temperature and treatment caused nearly the whole of the ample foliage to fall off. This caused much disappointment for the moment, but as the huge plants in 12-inch pots made haste to break into young shoots, it was decided to leave them where they were. The result was the noblest specimens of this grand Salvia ever seen before or since. They were almost too brilliant to be looked at, the dazzling spikes of scarlet being all the more prominent as they stood well out from the young leaves. The plants were removed about the end of January to the conservatory, and alternated with white Camellias and white Azaleas, and not even a noble specimen of Rhododendron arborea, with fifty trusses of its glorious blossoms, could eclipse the dazzling brightness of these specimens of Salvia gesneriflora, which went on flowering from January to April. We have had them of different sizes, good, since then, but none equal to these, our first specimens, though we have tried to repeat the practice. So difficult is it in horticulture to reach the high level of one's accidental best.

There is one other Salvia, grown under the name of Heerii, which comes in well with or after gesneriflora. It is hardier than either of the others, and flowers remarkably well in 6-inch or 8-inch pots, on the con-

servatory or greenhouse shelf, without any special culture or treatment whatever.

Retarded plants of Salvia patens, or those produced from late cuttings, may also be forced to throw in their inimitable shade of blue with those bright shades of scarlet and crimson, and thus, with the addition of the white variety of splendens, furnish the rich trio of popular and universally admired colours—red, white, and blue—throughout the dead season. *D. T. Fish.*

THE WILDERNESS, NEAR READING.

WHEN that once famous and magnificent estate of the Churchills, Whiteknights, situate near the Berkshire capital of Reading, was cut up into several allotments, that portion of it known in old time as the Wilderness passed into the hands of a building speculator, who erected thereon a handsome residence, and converted the somewhat uncouth grounds into the appurtenances of a family residence, without materially affecting the established features, or removing those fine objects that have for many years been the prominent characteristics of the place. The property is now tenanted by a lady of taste, the Hon. Mrs. Marsland, and she is fortunate in having in Mr. Lees, her gardener, a man of intelligence and capacity to understand the prominent features of old Whiteknights, and to improve in a garden sense, without defacing the memorials of the past. When, in years long past, this noble estate passed from the hands of the then Duke of Marlborough, it became the property of the late Sir Isaac Goldsmid, who allowed the estate to be at the free disposal of the inhabitants of Reading for many years, but it was eventually cut up into six lots and leased for building, the extent of the allotments varying from fifty to one hundred acres. The grounds are flat, and those of the Wilderness especially would be deficient in beauty and variety were it not for the grand specimens of many rare trees and shrubs that dot the lawn, and also for the noble trees and huge masses of Rhododendrons and other flowering shrubs that border and decorate the extensive pleasure grounds.

Whilst yet the estate was Whiteknights, and an appanage of the Duchess of Marlborough, there stood in the park, just outside the Wilderness, a huge accumulation of gigantic boulders that had been, at a vast expense, brought from the Marlborough Downs, in Wiltshire. These the taste of the Duke of Marlborough had formed into a miniature Stonehenge, presenting perhaps the nearest resemblance to that ancient and mysterious formation to be found in the kingdom. As these had in many cases fallen from their high estate, and presented a somewhat ruinous aspect, it occurred to Mr. Lees last winter that in these boulders were the elements of a gigantic rockwork or fernery; and therefore all were, with a great expenditure of labour, carted into a hollow place in the pleasure grounds, surrounded with trees and shrubs, and there fashioned into the massive arrangement now presented. When in years to come the Ferns and other suitable plants that intersect these stones have made a full development, the rockwork will be a fine feature in the place. As a geological fact, it may be of interest to state that these stones, to the number of 104, and many now weighing over a ton each, were, it is believed, floated to Marlborough Downs in prehistoric days from the Welsh hills by means of floating masses of ice, and there deposited. How many thousands of years have passed since they took this involuntary voyage it would be difficult to guess, but in the presence of these ancient *voyageurs* Saxon and Norman remains become but things as of yesterday.

Of trees of note that dot the lawns there is a noble pyramidal Oak (Quercus pyramidalis), of some 80 feet high—a very handsome specimen; a beautiful example of Fraxinus sylvatica [? Ornus], or the blooming Ash, the flowers of which resemble a silver plume not unlike the feathery tufts of the Pampas-grass, the foliage also being singularly handsome. A peculiar feature in this tree is the enormous development made of the stock of the common Ash in which it is grafted as compared with the stem of the tree itself; the bark of the stock is rough and uneven, and that of the scion tree perfectly smooth. A huge specimen of one of the varieties of the Hazel-nut is a very interesting tree. It has several large stems, and the tree has a circumference of about 150 feet. Near to this is an old gnarled specimen of that most deterring of Thorns, the Gleditschia horrida, on the stem of which are growing spines of some 4 inches to 6 inches in length, that form a perfect *chevaux de frise* against predatory climbers. This Thorn is not uncommonly known as the "Christ's Thorn" of the Crucifixion, but this is a mistake, as the Gleditschia is of American origin. There is a large specimen of the Fern-leaved Beech (Fagus heterophylla), the foliage of which is singularly handsome and striking. In this tree is a curious instance of sportiveness, a single branch having reverted to the form of the common Beech. There are some very fine examples of the deciduous Cypress, large specimen Magnolias in variety, huge masses of Ponticum Rhododendrons, facing which have been planted most of the finest new kinds.

In the small portion of the ornamental water enclosed in the grounds are varieties of the common Flag, the yellow kind (Iris Pseudacorus) being abundant, but the chief interest centres in the sweet-scented kind, Acorus Calamus, the foliage of which is of a paler hue than is that of its commoner neighbour, but which, when crushed in the hand, emits a most delicious perfume. One of the beds on the lawn was remarkable for the effective appearance presented by a number of the herbaceous Phlox planted amidst Kalmias ; the fine heads of bloom of the Phloxes just overtopped the shrubs, and were extremely handsome and telling. In other garden features the place owes much to the perseverance of Mr. Lees, who is a good plant cultivator, and is now a successful exhibitor, and making his mark at the local exhibitions. Of Fuchsias a large collection is grown, and it is pleasing to find that here at least is one who is in reference to this fine old exhibition plant ably endeavouring to follow in the footsteps of the famous western growers. The huge pyramids that stood taking their ease in well-earned retirement, after winning prizes at the shows, gave evidence of the ability of the cultivator, and the good example here displayed may perchance tend to induce other gardeners to follow in the wake. Mr. Lees grows most of Lye's newer varieties, all of which are of excellent natural habit, very floriferous, and, not least valuable, do not quickly drop their flowers in travelling. Such an excellent characteristic will far outweigh other properties in the eyes of the exhibitor. Of good sorts now in cultivation at the Wilderness are, of red kinds, Gazelle, Warrior Queen, Elegance, Charming, and Lizzie Hexham; and of whites, Wiltshire Lass, Letty Lye, Arabella, Beauty of Wilts, Blushing Bride, and Albo-coccinea. The building up of a good pyramid Fuchsia is a work of slow growth, but when such a plant is obtained it may, with care, be made serviceable for several years.

Heaths are largely grown, both for exhibition and for conservatory decoration; and the well-built specimens standing out in sheltered nooks and pits show that the gardener has a thorough comprehension of the requirements of these denizens of far-off regions. As shown at the Wilderness, it is evident that some kinds of Ericas may well be classed amongst carnivorous plants, with the exception that although they catch insects by myriads, there is no evidence that they digest their captives. Such kinds as E. æmula and Wilsoni emit a glutinous substance during the summer months that is singularly adhesive, so much so that last year a plant of the latter kind caught at intervals three sparrows, and held them fast as with birdlime. One of the most charming kinds in flower in the month of August was Erica verticillata rubra, the flowers of which were of a beautiful carmine; this is one of the best summer-blooming Heaths. In the plant-houses were some excellent show specimens of stove and greenhouse culture, all of good flowering qualities, and some specimens of kinds not common on the exhibition table. The pretty Pentas carnea, with its woolly foliage and numerous trusses of pale mauve flowers, like to those in form of the old Cuphea. The Chironia ixcifera is another exhibition specimen far from common; the flowers are of a charming rosy pink hue, and singularly striking; as an autumn show plant it is most valuable, but requiring in the winter stove treatment. Stigmaphyllon aureum is a charming climber that will train into a capital specimen, Mr. Lees' plant having done frequent duty but was yet fresh and vigorous. This plant has curious five-petalled flowers, yellow in colour. In other specimens we find Ixoras, Allamandas, &c., such as are common enough in collections of stove and greenhouse plants on the exhibition table, and therefore there is more interest centred in the one or two old plants than in the plants with which frequent meeting has made one familiar.

Grapes, stove fruits, Melons, and all the ordinary fruits of the garden, are grown here in sufficient quantity to suit the requirements of a moderate family, and all these are good. In Peach culture under glass Mr. Lees takes out all spare shoots as soon as the fruit is gathered, as in his estimation it greatly facilitates the ripening of the fruiting wood. Allusion has already been made to the excellent crop of good table Grapes produced in one of the houses from a temporary plant of Pearson's new Golden Queen, without doubt the best of all new white Grapes; and the simple treatment to which it had been subjected in a Black Hamburgh house leads to the inference that it is easy of cultivation, and well worthy the attention of amateur cultivators. The kitchen garden quarters are good and well filled, Potatos especially turning out well on the sandy loam of this Berkshire locality.

All the appointments of the place are excellent, and all neatly and cleanly kept. The Wilderness is no rival of the great show places of the kingdom, but, such as it is, it is not deficient of many features of interest, and is during the summer months well worthy a visit. *A. D.*

VARIATION IN PLANTS.

HERR HOFFMANN has contributed the results of another series of cultural experiments to the *Botanische Zeitung*. We have already given abstracts of some of his former papers. A dwarf form of Æthusa Cynapium, 1½ to 2 inches high, had been observed for twenty years past on the plateau of Königsberg near Giessen. It grew in a most barren, stony soil, and produced perfect seed. Last year seed taken from some of the smallest plants was sowed in pots. The seeds of one plant grew into seed-bearing plants from 3½ to 7½ inches high, whilst the largest from another attained nearly 10 inches. So here was a case in which, under not very favourable conditions, there was a reversion to the typical form in one generation.

A yellow-fruited variety of Atropa Belladonna produced black fruit in the fourth generation, and yellow again in the fifth. The writer remarks, however, that there was a possibility, though little probability, of its having been effected by bees.

Some experiments with a wild form of Brassica oleracea gave some interesting results. The wild form employed was from the Black Forest, and grows ordinarily 4—6 feet high without branching. It is a very marked, probably climatic, form, and has been under cultivation since 1864. Succeeding generations were gradually dwarfer, the leaves relatively larger, and the general resemblance to common Cabbage greater. The 1869 generation, however, still retained many of the peculiarities of the wild form, but the plants did not exceed 4 feet in height. Seedlings from the 1869 generation were of much the same character. In 1871 the plants were only 2 feet high, and in one of them the heart was blown at the beginning of September, and the following winter it exhibited the characteristics of Brussels Sprouts. Short shoots were produced in the axils of the upper leaves. In 1872 the original character was almost entirely lost; the plants were scarcely 3 feet high. Moreover, the majority of the plants had more the character of Cabbage; some of them, however, were more like the Savoy and Brussels Sprouts. In 1877 the progeny had something the character of Savoy, though not exactly that of any commonly cultivated sort, and the original character of the wild form was quite obliterated. Experiments with the variety laciniata, Will., were undertaken to test whether it was really fixed. Two plants out of four of the fourth generation had flat leaves, and were almost identical with the wild seacoast so-called parent form. In 1877 all the characteristics of the variety had disappeared.

Of seedlings raised from Fragaria vesca var. monophylla, some had two and some three leaflets, though the majority had only one.

The fruit of Medicago helix is spirally twisted to the right in some plants, whilst in others it is twisted to the left. Hoffman found the two forms tolerably constant, though seedlings of one sometimes produced the other. He also observed pods coiled in contrary directions in its upper and lower halves.

Experiments were undertaken with Mercurialis annua to ascertain the proportion of male and female

plants according to the age of the seed. It appears that usually there is an increasingly larger proportion of female plants as the seed gets older, though this does not hold good for all plants.

The dimorphic fruits of the ray and disk flowers of Zinnia, separately sown, produced identical flower-heads, bearing both disk and ray flowers.



Notices of Books.

Untersuchungen uber die Ringelkrankheit und den Russthau. Von Dr. Paul Sorauer. Berlin and Leipzig, 1878, 8vo, pp. 55; mit 19 figuren in holzschneit und 1 chromol. tafel. (The Diseases of Hyacinths, &c.)

It is perhaps not quite generally known that there is at Berlin a very extensive cultivation of Hyacinth bulbs for the market, as well as in Holland. The annual produce is said to be above a million and a half, but that it decreases yearly in consequence of disease. A pamphlet has lately been published at Berlin and Leipzig by Dr. Paul Sorauer, in which he treats of the several diseases to which the bulbs are subject. They are known under various names, but they are reducible to three, the leaf-disease, the ring-disease, and the black rust, of the two latter of which the memoir treats more especially. Every cultivator of Hyacinths in this country is aware that when his bulbs are taken up many appear with the outer coats loose and distorted, while the sound portions of the bulb within are in an unpromising condition. Very frequently there is mould about the base, and sometimes more or less extensive decomposition within. In this latter condition a careful examination shows that the bulbs are affected with the Ringelkrankheit, or ring disease. This may occur, however, in bulbs which are apparently perfectly healthy externally. The disease is very insidious. It commences at the top of one of the inner or rather median coats, in the shape of a slight brown spot; this gradually spreads downwards and all round, till it reaches the vegetative base, destroys the tissue from whence the roots spring, and eventually developes masses of Penicillium, very frequently in that form which is figured by Greville under the name of Coremium. Every gardener knows that in selecting bulbs, especially those of high price, he must examine the base and reject those which show the slightest symptoms of disease or mouldiness there, however slight, or he will be sure to be disappointed. In all such cases he has probably met with bulbs affected by ring disease. We do not, however, agree with Dr. Sorauer that the Penicillium has really anything to do with the disease. The fungus is clearly an after-growth, which may aggravate constitutional disease already present.* Our belief from the whole of the account is, that the constitution of the bulbs has in the process of time been deteriorated by the use of too nitrogenous manures, aggravated by lifting the bulbs when not quite perfectly mature. Whether, however, we are right or wrong about this matter, we feel convinced that the black-rust (Russthau) is not in the least due to any of the various moulds or organisms which are so copiously developed. Pleospora herbarum in its various forms, and complicated mycelia, is abundant everywhere on dying or diseased vegetables, even seaweed not being exempt; and we must therefore look to some more hidden cause. In either disease the little yellow blisters which occur on the coats are very curious. The treatise will be read with profit by wholesale cultivators of bulbs, as it contains several useful suggestions. In this country we are rather consumers than producers. *M. J. B.*

* In the sectional figure which gives the structure of the blisters on the coats, the mycelium is omitted for the sake of clearness It is necessary to make this remark, to avoid a mistake which might very easily be made.

Publications Received.—Systematisches Verzeichniss der in den Gärten der Königl. Preuss. Forstakademie zu Münden kultivirten Pflanzen. Angestellt von H. Zabel, Münden. (Systematic Catalogue of Plants cultivated in the Royal Prussian Forest School at Münden.) A list of 2320 species and varieties of hardy trees, shrubs, and under-shrubs; 1050 krantartigen—hardy plants; 250 topflanzen: the whole comprised in 845 genera. A good catalogue, well printed. — New Commercial Plants, by Thomas Christy.—The Christmas Number of the Masonic Magazine.—Monatsschrift des Vereines zur Beförderung des Gartenbaues in d. K. P. Staaten.—American Agriculturist.—Vick's Illustrated Monthly.—Bulletin de la Fédération des Sociétés d'Horticulture de Belgique.—Grevillea—Bulletin d'Arboriculture.—Moniteur Horticole Belge.—Live Stock Journal Almanac. — Agricultural Gazette Almanac. — The Gardeners' Monthly.

Garden Operations.

HARDY FRUIT GARDEN.

Although the Strawberry is generally looked on as very hardy and enduring it often occurs that the plants suffer much in severe winters, the biting winds and frosts together acting most injuriously on the exposed crowns, which, if the cold is of long continuance, are in a great measure robbed of their vitality. A dressing of soft decomposed manure put on the beds now, will not only prevent this by the excellent shelter it affords, but will greatly improve the health and vigour of the plants in the spring by the manner it enriches the soil and encourages surface roots, which to perennials of this class are the principal feeders that are renewed regularly every year. To dig among Strawberries at this season, or indeed at any other, is a great mistake, as it causes a wholesale destruction of these, and renders the plants much less able to contend with adverse weather than they would be if left undisturbed. The removal of the old foliage, too, which is their natural protection, is likewise detrimental to their welfare, as it lays bare the most tender part to every blast, and if these sere leaves were not required we may be sure they would be cast off in the same way as others are, instead of which, as if to protest against being rudely severed, they always cling to their position with the greatest tenacity, and only loose their hold when the young ones appear in the spring. Next to Strawberries in point of importance among what are generally considered the common kinds of hardy fruits, Raspberries are, perhaps, in the greatest esteem; for however small a garden may be, almost every one endeavours to grow at least a few canes; but the difficulty with many, where stakes are not to be had, is how to support them. At the low price iron now brings, there can be no question that in the long run rods of this metal are by far the cheapest, as those of ½ or ¾ inch are quite large enough, and if tarred before being used, to keep them from rusting, would last a lifetime. Besides being so durable, they are far neater than wood, which not only are clumsy-looking but soon rots in the ground and snaps off at the surface, thus entailing a constantly recurring expense to keep them renewed. Two or three strained wires answer very well for training Raspberries on, but the gain in using them is small, as they must have supports of some strength at the ends with others at intervals along the rows, besides which they are not so portable when it is desired to make fresh plantations, or so convenient to get amongst for the purpose of gathering the crop and manuring and getting about on the ground. A low, half shady wall or dead fence that is not available to grow anything else except Gooseberries or Currants forms a capital place for Raspberries, the roots of which delight in the cool and moisture such a position affords, and the canes are easily supported by giving them a tack-up by means of a few nails and shreds.

Raspberries, like Strawberries, are surface-rooted plants, and should be disturbed as little as possible. No system of cultivation suits them better than having the soil just pricked over for the purpose of cleaning it, and then giving a good mulching of half-rotten manure to lie during the spring and summer, the effect of which is to intercept evaporation of the moisture contained in the land, and add considerably to the yield. If it were not for the more tidy and dressed appearance it gives to gardens, the ground between Gooseberries and Currants would be the better left as it is, at least so far as the bushes are concerned, and what digging takes place among them should be done with a fork, and not be carried to any depth to loosen or interfere with their hold.

The more stirring work of thinning-out overgrown trees in orchards may with advantage be carried out during dry weather, when it would be much too cold for ordinary pruning to be done with any degree of comfort to those engaged in it. The thing to aim at with all standard Apples is to keep the centres thin and open, and the branches from crossing and interlacing each other, by doing which not only is the symmetry of the trees spoiled, but the light and air is shut out, and the fruit they bear never attains anything like the size or colour it should. A sharp saw, with a quick eye and ready decision on the part of those using it, will soon improve matters even in the most neglected place, but in order to get the wounds made to heal over quickly and properly, they should be smoothed off with a keen-edged knife or large chisel, which will prevent wet from entering and carrying decay with it, Next to proper and judicious thinning, nothing tends so much to the welfare and health of orchard trees as keeping their bark free from mossy growth—a parasite to which, in some soils away from the influence of the smoke and the atmosphere that prevails near towns, some are particularly liable. Where it occurs to any extent, the best way is to scrape the trunks and main stems with some blunt instrument, such as a small narrow hoe, and then paint them over with thick limewash, used as fresh as it can be got. The smaller branches can be dealt with by squirting it on from a Read's syringe, a few well directed streams from which will cover every part, and bring about a thorough cleansing of the whole. Standard Plums, Damsons, and such-like, that in some localities are annually stripped of the greater part of their flower buds, pay well for a little attention in the same way. *J. Sheppard, Woolverstone.*

FRUIT HOUSES.

Cucumbers.—Every opportunity should be taken on bright days (which of late have been "few and far between") to entrap the sun's rays by shutting up the house early in the afternoon—say at one o'clock, sprinkling the house at the same time with tepid water. The house, pathways, and the plants (using a very fine spray for the latter), should be damped over every morning, otherwise spider will be troublesome, in consequence of the continued severe firing which has been rendered necessary through the severe nature of the weather, and which to Cucumber-growers, in the generality of places, is a trying ordeal through which to pass with anything like ordinary results. Let tepid liquid-manure, in a weak state, be given to plants which are making a free growth; but on the other hand, should the plant show the least signs of a stagnant growth, it will be advisable to withhold the liquid manure until they have again shown unmistakable signs of free growth. A top-dressing, composed of the following ingredients, viz., one part of peat, two of loam, and one of horse-droppings, having been previously warmed to the same temperature of the soil in which the plants are growing, by placing it in the same house for twenty-four hours, will have beneficial and invigorating influences upon the plants. Some fermenting materials, consisting of two pots of Oak or Chestnut leaves, and one of stable dung (including the horse-droppings), should be thrown together forthwith, wherewith to make a hotbed next month in which, where no better means is at hand, to raise young plants, and subsequently to plant them in. *H. W. Ward, Longford Castle Gardens.*

—— Testing the Growth of Seeds.—The horticultural world is sometimes hard on seedsmen, and is occasionally apt to charge them with sending out seeds, not only of indifferent growth, but of poor quality. The seedsman often has to bear the sins of others, and though strictly honourable himself, is occasionally the victim of wrong-doing, of which he has no knowledge. The wholesale seedmen, in so far as they can, prove the growth and test the quality of seeds to their utmost extent, before sending stocks out; but it is frequently obligatory on them to send out stocks before they can be proved: they are yet tested at the earliest opportunity. Just now the wholesale seed houses are very active in the matter of testing the growths of seeds before sending them out. The trial-room at Messrs. Hurst & Sons, at 6, Leadenhall Street, E.C., may be taken as suggestive of the care-taking propensities of the seed trade. In the centre of the room is a square stove for burning coke, and on the top a shallow pan for holding water, but with cross-pieces so arranged as that pots can be stood on it when necessary. The pots containing the samples are stood on a broad shelf about breast-high. There is no bottom-heat, but an atmospheric temperature of from 50° to 60° is maintained. One hundred seeds of each sample to be tested are counted out in two lots of fifty seeds each, and two pots are sown, so as to ensure the most reliable average. Only twenty-five seeds of Mangel and Beet are put into a pot, and they are regularly dibbled in, so as to get at the individual growth of each. Mangels and Beets will produce two and three or even more growths to a seed, and a record is kept of the number of seeds that germinate, as well as the number of growths put forth in the aggregate. The samples are carefully counted out, and sown in a light sandy soil, in wide-mouthed pots made for the purpose; the whole work being done in the most careful, systematic, and reliable manner. All proofs of quality are made at the trial grounds at Croydon.

THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 28, 1878.

GLOOMILY the year ends. Wars and rumours of war in place of peace on earth. A real old-fashioned Christmas come at last, but—sad accompaniment—an extra amount of distress and misery. Sorrow in high places finds a sympathetic response amid all classes, proving once more the eternal truth of SHAKESPEARE'S dictum,—"One touch of Nature makes the whole world kin." At such a time it is well not to dwell too much on the present, but to look back to the past and see if lessons of hope, courage, duty, may not be found for the future. And indeed the RETROSPECT OF THE YEAR now waning is full of interest, full of hope; if dashed with sorrow and disappointment, it is at least radiant with promise—promise, too, that is so near to fruition as to belie anticipation even. Not to speak of politics, when in the history of civilisation have such surprises and such vast results been shown by science? Microphones which render audible the tramp of a fly—phonographs which register the speech of the moment, and will reproduce it elsewhere—on the other side of the world—it may be six months hence, it may be as many centuries—telephones which put our old speaking-tubes to shame by their efficiency—electric lights which light our streets with an effulgence not equalled by the moon at her brightest—spectroscopes which cause the sun to reveal the secrets of its composition and condense the very elements till it seems as if the dreams of the alchemist were at length about to be realised, nay, they have in a measure been already realised—vacuum tubes in which a new kingdom of Nature, we know not what to call it, is revealed, which is not solid, nor liquid, nor gaseous, but something different from all, "ultra gaseous." Surely these, which are recent gains of science, mark a rate and depth of progress such as the world has never known even in the nineteenth century. And what hope in all this! The possibilities of good, the ever extending bounds of knowledge, the ever increasing benefit to mankind—truly, we should be ungrateful if we allowed a temporary feeling of gloom induced by present circumstances to assume permanent sway. The results to our own speciality of these astounding discoveries may be remote, but they are none the less certain: the theory and practice of manuring will in future be modified by them, while as to the electric light it is no mere fancy to suppose that a time may come when in the gloomy days of winter the heat and moisture of the forcing houses will be supplemented by the light of the electric lamp, for it is known that the electric light exerts, in a degree, precisely the same effect as the solar ray, so that forcing by the electric light is quite one of the possibilities of the future.

And the weather—well, we can't get away from it; and those who have to contend against its evil effects—those who have to dread its fatal power—as much as the gardeners do, will note the contrast between the present Christmas and that of last year, when, as is recorded in our columns, over 100 species were in bloom in the open air in a Cornish garden. Contrast that with the letter of the Hon. and Rev. J. T. BOSCAWEN in our present issue as to the state of things in the same county at present, and it will be admitted that we have a climate of extremes.

Of the new plants, new fruits, new vegetables of the year we shall, according to our custom, speak more at length by-and-bye, meanwhile we do not think that it will fall to our lot in many years to be the means of publishing to the world the measurements of so gigantic an Aroid as that we mentioned last week, or of so diminutive an Orchid as that described in our present issue. Neither can we hope in many years to publish the details of so curious a piece of architecture as that practised by the bird gardener who builds his nest of Orchid-stems, and forms a garden of flowers in front of it!

Reverting to the discoveries of the year we may mention one which may be of direct interest to the gardener, we mean the demonstration which Mr. F. DARWIN has given of the use to the plant of a flesh diet absorbed by the leaves. It will be remembered that while some questioned the fact that Droseras, Dionæas, and other so-called carnivorous plants had any such property at all as was imputed to them, explaining the observed facts in other ways, others, acknowledging the fact, doubted whether any use accrued to the plant from this digestive process. The report in our columns, 1878, vol. ix., p. 112, effectually disposes of that objection. We may also note the conclusive experiments of the Rev. GEORGE HENSLOW on the absorptive power of leaves as a matter of direct interest to gardeners.

The opening of the new laboratory at Kew will, we trust, be the means of elucidating many a similar problem in vegetable physiology, for whether the practical men acknowledge it or not, the fact remains that the soundest practice is the outcome of the soundest insight—intuitive perhaps—into vegetable physiology. And so we hail with satisfaction the signs around us that vegetable physiology, so long neglected in this country, is being anew studied by the rising botanists of the day, and Germany will not be allowed to monopolise, as she has done of late years, the particular branch of botanical science in which England took the lead, and for a time kept it, and on which the progress of agriculture and horticulture so intimately depend. In the same connection we may be permitted to recal with satisfaction the progressive step made by the Society of Apothecaries in instituting an examination in botany for young women, while the University of London has thrown open all its degrees to women as well as to men, so that we may hope that the teachings of physiology and other sciences may be brought to bear more efficiently than ever on the business of life and the health and comfort of mankind.

The exhibitions of the season have been as numerous as ever—too numerous perhaps—and their quality has been generally good. It becomes a question whether the host of small societies for the advancement of the cultivation of this, that, and the other hobby-horse would not do well to merge their shows with those of the larger bodies while retaining so much independence as may ensure the fulfilment of the requirements of their promoters. At any rate we trust we shall see no more special societies instituted. The country shows, as at Manchester, York, and many others that might be cited, are formidable competitors with the London exhibitions, and the provincial show of the Royal Horticultural Society at Preston—so unsatisfactory in many ways—was at least a horticultural success. Across the water our Ghent friends celebrated their quinquennial show with a little less *éclat* than usual, but with a very fine exhibition nevertheless. In Paris the system of fortnightly shows proved as great a failure as in 1867—the alliance of horticulture with these big exhibitions is evidently not felicitous. The arrangements were bad, and many complaints rife: most of these would have been obviated had the horticulturists been allowed to have managed their own department in their own way. At the same time the Roses, the fruit trees, the Caladiums, and the numerous exhibits of MM. VILMORIN throughout the entire season are worthy of a place in the merest summary of the events of the year. Our own countrymen did not exhibit in numbers in the horticultural sections, but Mr. WILLS covered himself with honour by his unquenchable zeal and enterprise, which quailed at no trouble and flinched at no expenditure. The records of the successes achieved by this exhibitor at the Versailles show, as also by Messrs. VEITCH, CARTER, SUTTON, and other exhibitors are they not written in our columns? Still, after all, the horticultural department of the Paris Exhibition but poorly represented the gardening of the world.

Of making books there is no end, so that we cannot undertake to name a fraction of the books of the year; but one or two call for special notice. The completion of the *Flora Australiensis*, by Mr. BENTHAM, with loyal aid from Baron VON MUELLER, is an event upon which British botany may be congratulated, and which is in every way a remarkable feat. The new edition of *White's Selborne*, by Professor BELL, revealed to the delighted public what may be termed an entirely new volume of WHITE'S delightful book—a volume, too, as full of charm as its well-known predecessor. American botany also has received valuable additions in the continuation of Dr. GRAY'S *Flora of the United States* and in the *Synoptical Flora* published by Mr. SERENO WATSON. Of more general interest is the resumption of the publication of DE CANDOLLE'S *Prodromus* in an amended form. Of horticultural works proper we may allude to the new edition of THOMPSON'S *Gardeners' Assistant*, an encyclopædia of horticultural knowledge; to the commencement of a sumptuous work on *Fruits*, under the auspices of the Woolhope Club; and, though small in size and simple in subject, fresh and delightful, a *Monograph on Water Cress* by Mr. SHIRLEY HIBBERD.

The legislation of the year, so far as it concerns horticulturists in particular, includes an Act for the amendment of the Adulteration of Seeds Act—an Act rendered necessary by a technical flaw in the indictment of a very gross case. The flaw would never have occurred had the legislators listened to the recommendations of the seedsmen in the first instance, but the parliamentary luminaries thought they knew the business of the seedsmen better than the proprietors themselves, and hence the breakdown. However, that is now, we trust, set right. As to the Weights and Measures Act, with its absurd and unworkable provisions, we can only say that the intent is better than the fulfilment. We trust neither ourselves nor our readers will incur the penalties threatened or supposed to be threatened, for the officials themselves do not seem to know which, against those who infringe its provisions.

Three portraits of men whom Horticulture delights to honour have been added to the galleries of the Horticultural and of the Linnean Society, those of the late G. URE SKINNER and JOHN CLAUDIUS LOUDON, who have passed away; and that of the Rev. M. J. BERKELEY, who happily is still with us to help us on with his apparently inexhaustible fund of knowledge and his genial encouragement.

The obituary record is a long one, and it includes names that are not likely soon to be forgotten. THOMAS THOMSON, the botanist, the friend and companion of HOOKER in those Himalayan wanderings to which our gardens are so much indebted. FRIES, the veteran mycologist, representative of a state of knowledge now undergoing rapid transformation. DUMORTIER, the chivalrous and courteous Belgian, to whose devotion to his loved science Brussels owes the reorganisation of its botanical museum and garden. KURZ, the keen botanist who explored for our behoof the forests of Birma. ANDREW MURRAY, the versatile naturalist, the quaint humourist, the warm friend who helped us so much by his essays on Conifers and on the insects destructive to our crops. JOHN KEYNES and VICTOR VERDIER, of Rose cele-

brity. William Menzies, the poetic forester, and James M'Nab, but lately taken from us. Alas! many more—whose work ceased not with their lives, but still animates and impels others to progress in the same career of usefulness.

Did we not say well, in drawing a lesson of hope for the future, the year's work has on the whole been well done, and it is not to be effaced by any temporary gloom. May we add another instance, showing the wide interest taken in horticultural pursuits? It is taken from the record of our "foreign correspondence" by which we find that our columns have been enriched by communications, not only from quarters whence we might fairly expect to receive information—from Caithness to Cornwall and Kent to Galway, but from localities far and wide indeed, from the Riviera and from the Rocky Mountains, from Swan River and Sweden, Perak and Auckland, Cyprus and Affghanistan, St. Kilda and St. Helena, Ascension and the Scilly Isles, Delagoa Bay and King George's Sound, Canada and the Transvaal, Jamaica and New Guinea, Egypt and Fiji. In our own special duties we can but feel encouragement from such facts as these, and while gratefully acknowledging the assistance rendered us by our correspondents at home and abroad—assistance which has been the means of extending the circulation of this journal beyond precedent during the past year—we earnestly trust that they will co-operate as zealously with us in the future, and year after year reciprocate our wishes for a "happy and prosperous New Year."

—— Dendrobium Bensoniæ.—The accompanying illustration (fig. 136) represents one of several superb plants of this choice Dendrobe, which bloomed last spring in the collection of W. S. Leach, Esq., of Fallowfield, under the care of his very successful gardener, Mr. Swan. The plant, it will be remembered, is a native of Moulmein, and was named after Mrs. Benson, wife of Colonel Benson, by whom it was sent to England. From its tufted habit of growth it will be seen that it forms handsome specimens, while its delicate colour renders it at all times pleasing and welcome. The colour is snow-white, with a broad stain of rich deep yellow over the disk, and two purple blotches near the base of the lip, which is orbicular, convolute at the neck and denticulate at the edge. Botanically its nearest ally is Dendrobium nodatum. From a decorative point of view it is one of the most charming species of a genus which abounds in species of first-class merit.



Fig. 136.—Dendrobium Bensoniæ.

—— The Frost.—Already the tale of woe has begun, and we fear it is likely to be a long one, for months must elapse ere the full complement of killed and wounded can be determined. The following note will show how the pinch has been felt in Cornwall:—

"I left home Monday, the 9th inst.: that morning there were 16° of frost; Monday and Tuesday 24°, that is, the thermometer stood at 8°; Wednesday morning at 6°—or 26°. I find a Lapageria rosea, 25 feet high, quite dead to the ground; the Blue Gum—Eucalyptus globulus—from 25 to 30 feet, quite dead; all the Laurustinus dead; many Camellias, no doubt, dead—others uncertain; Erica codonodes dead, 10 and 12 feet high; many Rhododendrons twenty years old are killed to the ground. I will write and tell you of all casualties when the frost is gone. There was skating under my house last week, but I hear that at Penzance that there is no ice on the pool there, but we had 14° of frost last night. 'The sun is shining brightly at this moment. I must add that my bees were out on Friday the 13th after the severe frost of Tuesday and Wednesday. Verily this climate is a most treacherous one. *J. Townshend Boscawen.*"

—— The Smallest Orchid in the World.—Last week we were privileged to give a figure and description of the largest Aroid known, and which will probably turn out to be a Brachyspatha. Contrast its

spadix, 6 feet long, and its leaf, covering an area of 45 feet, with the tiny Orchid with leaves and flowers each about one-eighth of an inch in diameter, mentioned by Baron VON MUELLER in the following letter :—

"More than twenty years ago the late W. S. MCLEAY showed to the writer a very minute creeping Orchid, from the vicinity of Port Jackson, highly remarkable for its extremely small disk-like leaves. The little plant in Mr. MCLEAY's conservatory was at the time not in flower, nor could subsequently any flowers be obtained, as the plant seems to have been lost. He told me, however, that he had examined it in a flowering state, and had found it to be a Dendrobium; hence temporary notice was taken of this singular plant as Dendrobium minutissimum in the *Fragmenta* and also in the *Flora Australiensis*. The plant was lost sight of until very recently Mr. FAWCETT rediscovered it on the Richmond River, and forwarded fruiting specimens. At my request this zealous investigator of the Richmond River vegetation secured at last the flowers of this pigmy plant, which prove it to be a true Bolbophyllum, to which the name B. minutissimum is now given. The leaves are sessile, on a creeping rhizome, often forming braadlike series, on which account the name B. moniliforme might be employed for the species, as first adopted by Mr. MCLEAY, though that name is preoccupied in Dendrobium. The leaves are orbicular, flat, horizontal, and only one-eighth or one-sixth of an inch in diameter! Thus this Orchid has the smallest leaves of all in the whole order. Indeed, seeing the plant creeping among mosses, the observer might take it for a species of the Hepaticæ. The flowers are singly produced on peduncles hardly longer than the leaves, while the wee red flowers measure also only one-sixth of an inch. The affinity of this Bolbophyllum is with B. lichenastrum, but its dimensions are much less, and the disk-like leaves are thinly cartilaginous and adnate to the centre. While thus East Australia possesses the dwarfest of all Orchids, it counts among its plants also the one with minutest flowers, namely, Oberonia palmicola."

—— THE LATE MR. M'NAB.—The following story is going the round of the Press—credited to the *World*:—

"A story is sent to me about the late Mr. M'NAB, curator of the Edinburgh Botanical Gardens. When DUBUFE'S celebrated paintings of ADAM and EVE were on exhibition, Mr. M'NAB was taken to see them, and was asked for his opinion. 'I think no great things of the painter,' said the great gardener. 'Why, man, EVE's temptin' ADAM with a Pippin of a variety that wasna known until about twinty years ago.' As genuine a bit of criticism as that of the farmer, who told GEORGE MORLAND that he had never seen eight little pigs feeding without one of them having his feet in the trough. MORLAND altered the picture."

The story has a basis of truth in it, but the anachronism complained of was a hybrid perpetual Rose—the product of the skill of the gardener—not an Apple—which formed part of the flora of the Garden of Eden. After all, we know so very little of the contents of the Garden of Eden and of the skill of the "grand old gardener," that the painter might retort upon the gardener of to-day that he knew nothing of the doings of his great ancestor. That Mr. M'NAB was consulted on such matters we ourselves can personally testify. Some few years since we were in a shop in Edinburgh with Mr. M'NAB, when a gentleman, whom we afterwards found to be Sir NOEL PATON, hearing Mr. M'NAB's name mentioned, inquired of the shopman if that was the celebrated Mr. M'NAB, and on being told that it was, the painter proceeded to ask some question as to the plant which had furnished the "Crown of Thorns," when a conversation ensued as to the anachronisms of GUIDO, CORREGGIO, and other painters, who introduced the spines of Gleditschia, an American tree, into their pictures, in illustration of an event which occurred fifteen or sixteen centuries before the discovery of America. If we remember rightly it was Paliurus aculeatus which Mr. M'NAB considered to have probably furnished the Crown of Thorns.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The annual general meeting of the members of this Society is announced to be held at the Bedford Hotel, Covent Garden, on Thursday, January 16 next, for the purpose of receiving the report of the committee and the accounts of the Institution for the present year, and electing officers for the ensuing year, and also for placing seven pensioners on the funds. The committee recommend that the following seven applicants—whose cases have been investigated and found in every way satisfactory, and who, or their husbands, have been subscribers for over fifteen years—be placed on the pension list without the trouble or expense of an election, in accordance with Rule No. 6.

JOHN CAMIS, of Bramdean, Alresford, aged 80, subscriber of £1 1s. yearly for twenty years.

THOMAS FREEMAN, of Spath, Uttoxeter, aged 61, subscriber of £1 1s. yearly for sixteen years.

WILLIAM GARDENER, of Manorfield, Aberdeen, aged 76, subscriber of £1 1s. yearly for twenty-four years.

ANN GODFREY, of Terling, Witham, Essex (widow of the late JAMES GODFREY), aged 79, subscriber of £1 1s. yearly for thirty-four years.

MARY KIMP, of Brompton (widow of the late B. KIMP, of Exeter), aged 64, subscriber of £1 1s. yearly for twenty-eight years.

JOHN MARTIN, of Farningham, Kent, aged 68, subscriber of £1 1s. yearly for thirty-five years.

ADAM TAYLOR, of Foots Cray, Kent, aged 68, subscriber of £1 1s. yearly for eighteen years.

—— CARNIVOROUS PLANTS.—Mr. PETER HENDERSON, according to the *Gardeners' Monthly*, has been repeating Mr. DARWIN's experiments on feeding the leaves of Dionæa Muscipula with flies. The most careful examination and comparison failed to show the slightest difference between one hundred plants that had been fed and one hundred that had not been fed. Mr. HENDERSON, however, does not tell us in what his most careful examination consisted. It seems probable from the opening paragraph of his letter that he has only read a brief abstract of Mr. F. DARWIN's observations, and has not seen the record of facts and figures which to our thinking prove very conclusively that a benefit does result, although it is not obvious to the mere casual observation. Meanwhile it is certain that the function of digestion does not conduce to the long life of the particular leaf or pitcher. In going through a nursery the other day we noticed several pitchers of Darlingtonia rotten from the decay engendered by an accumulation of dead insects.

—— NITRO-PHOSPHATE AND ODAMS' CHEMICAL MANURE COMPANY.—We are requested to state that the chief offices of this company have been removed to more commodious premises at 116, Fenchurch Street, facing the top of Mark Lane.

—— TWO NEW EXPERIENCES.—A long life leads some to exclaim there is no new thing under the sun. What, then, must be the feelings of Cleopatra's Needle, whose prismatic summit now bears a cap of snow such as it probably never wore before, and whose sides are now nightly illumined by the electric light! The effect of the capping of snow, and of the drift in the incised figures, is weird and striking; and among all the varied experiences to which this obelisk has been subjected, these must surely be the most novel.

—— ODONTOGLOSSUM LINDENI and the rare Saccolabium pertusum, also Oncidium ornithorhynchum albiflorum (deliciously sweet) are amongst the many novelties in flower at Parkfield Hallow, Worcester (C. W. LEA, Esq.), under the charge of Mr. JOHN COX.

—— THE LATE LIVERPOOL CHRYSANTHEMUM SHOW.—We have received from Mr. J. KENTISH, secretary of the Maidstone Gardeners' Mutual Improvement Society, a copy of a letter which has been sent on behalf of that Society to Mr. OLLERHEAD, thanking him "for exposing the very disgraceful conduct at the recent Liverpool Chrysanthemum show." The Society also thanks the Editors of this journal for publishing Mr. OLLERHEAD's statement.

—— THE GARDENERS' MAGAZINE.—The Christmas number of our contemporary is filled with a great variety of illustrations, some of a very amusing character, albeit a little satirical. The letterpress is similarly varied; sound teaching, bubbling fun, good nonsense, and sentimental romance, all find a place in our contemporary's Christmas number, which moreover is further adorned by an almanac in colours.

—— TODEA WILKESIANA.—A very fine specimen of this superb species, a native of the Fiji Islands, introduced and sent out a few years ago by Messrs. VEITCH & SONS, of Chelsea, may be seen in the fernery at Davenham Bank, Malvern Links, the seat of J. D. PERRIN, Esq. It is over 3 feet in diameter, and is planted in the rockwork, where it stands on a very prominent point, its beautiful fronds forming a graceful plume-like head, which is very attractive. The plant is undoubtedly one of the finest of the species, and well worthy the attention of those planting.

—— A GERMAN VIEW OF ENGLISH GARDENING.—Our comments in a recent number (p. 757) on some articles on English gardening &c., which appeared in the *Deutsche Gärtner-Zeitung*, have been the cause of our receiving a letter from the author, wherein he states that he was animated by no bad motives, that he wrote from a German point of view for Germans, and that we have misrepresented him. We find that we unintentionally made him say that the greater part of the Asparagus sold in Covent Garden is imported from Paris, whereas he was alluding to forced Asparagus at Christmastide. The author also reminds us that he has written articles which have been highly appreciated in this country. We do not doubt it for a moment, but we had not those articles under consideration; and we still maintain that he was wrong in the assertion pointed out, though he declares our adverse criticisms arose from a defective knowledge of the German language. Celery, he states, is called Celeriac in some parts of Germany; Mistleto is rare in England as compared with Germany, and he wrote of cooking by and for the labouring classes. Let those who are interested in the matter, and understand German better than we, judge between us.

—— CRASSULA LACTEA.—For the decoration of a conservatory at this season of the year this is a most lovely plant, and it is also useful for cutting from. We saw it the other day in large quantities at the nurseries of Messrs. E. & J. PERKINS, of Leominster. Plants in 48-pots were producing as many as six beautiful spikes of lovely white flowers, so valuable at this season of the year; and as it is also easy to grow it is well worthy the attention of those requiring a good useful decorative plant.

—— NORTH AMERICAN WILLOWS.—Professor C. S. SARGENT, Director of the Botanic Garden of Harvard University, Cambridge, Mass., informs us that cuttings of the following North American Willows can now be supplied by mail to the correspondents of that establishment. They have been grown and determined by Mr. M. S. BEBB, of Illinois, who has devoted many years to the study and collection of the genus Salix. Applications, indicating by number the species or varieties desired, should be received before February 1, 1879.

1. Salix nigra, Marsh. ♂ and ♀.
2. S. amygdaloides, Anders.
3. S. lucida, Muhl., var. lanifolia. ♂ and ♀.
4. S. lasiandra, Benth. ♂ and ♀.
5. S. longifolia, Muhl. ♂ and ♀.
6. S. discolor, Muhl. ♂ and ♀.
7. ,, var. eriocephala. Amentis molliter villosis densifloris, foliis subtus rufescenti-tomentosis.
8. S. rostrata, Richards, var. obovata, Anders. ♂ and ♀.
9. ,, Forma foliis oblanceolatis basi attenuatis, stipulis semi-ovatis serratis. ♀.
10. S. myrtilloides, L., var. pedicellaris.
11. S. ,, petiolaris, Smith. forma typica. ♀.
12. ,, var. gracilis, Anders. ♂ and ♀.
13. ,, Forma monstrosa.
14. S. sericea, Marsh. ♂ and ♀.
15. ,, Forma amentis cylindricis, 1 — 1½ poll. longis.
16. ,, Forma amentis brevioribus ½ poll. longis.
17. S. humilis, Marsh. ♂ and ♀.
18. ,, var. longifolia, Anders. ♂ and ♀.
19. S. tristis, Ait.
20. S. cordata, Muhl. ♂ and ♀.
21. ,, var. rufescens, Hort.
22. ,, var. rufescens. Foliis initio tomentosis, capsulis e basi crassa breviter ovato conicis.
23. S. pyrifolia, Anders. ♂ and ♀.
24. S. adenophylla, Hook. ♀.
25. S. Barclayi, Anders. ♂ and ♀.
26. S. myricoides, Muhl. ♀ (sericea × cordata).
27. ,, var. angustata Capsulis primo tenuiter sericeis, demum, glabratis. ♀.
28. ,, var. subsericea. Capsulis griseo-tomentosis. ♀.
29. S. rubella, Bebb. ♂ (candida × cordata).
30. S. candida, Willd.
31. S. Clarkii, Bebb. ♀ (petiolaris × candida).
32. ,, var. subpetiolaris. Foliis subtus demum glabriusculis. ♀.
33. ,, var. subcandida. Foliis subtus niveo-tomentosis.

Mr. SARGENT will be glad to receive cuttings of other species, including all Asiatic species and forms, in exchange.

—— A CAUTION TO GARDENERS AND NURSERYMEN.—We learn from a Sussex paper that the interesting individual against whose practices we cautioned our readers at p. 727, paid a visit to Chichester last week, and called on Mr. H. H. MOORE, florist, Orchard Street, in that town, giving the name of Mr. MILES, the well-known nurseryman of Cliftonville,

and requesting the loan of 2*s.* 6*d.* to carry him home, at the same time offering, not his umbrella, but his gaiters as security. But Mr. Moore had read his *Gardeners' Chronicle*, and at once recognising the person who was addressing him, quickly presented to the gaze of the astonished swindler the paragraph relating to his transactions. It is needless to say that after this he "made tracks," and quickly shook off the dust from his feet over Chichester. The Superintendent of Police at East Grinstead informs us that the man is "wanted" at that place, and he would be much obliged should he call upon any of our readers if they would give him into custody, and call the attention of the police to the *Police Gazette* of Dec. 16 under the heading of "Larceny." Warrant issued.

—— Orchids in Flower at Davenham Bank, Malvern Links. — Amongst the many grand examples of good cultivation at this place the following are in flower, and testify to the abilities of Mr. Jacques, the gardener :—

Angræcum eburneum
Calanthe vestita var. several
,, Veitchi var. several
Cattleya maxima, two distinct varieties
Cypripedium insigne, several very fine specimens
,, Sedeni—grand for winter work — several fine flowers
,, longifolium
,, Maulei
Dendrobium formosum giganteum
Epidendrum ibaguense
Lælia præstans
Lycaste Skinneri, fine varieties
,, lanipes
Maxillaria picta
Masdevallia tovarensis, fine
Maxillaria venusta
,, punctata striata
Masdevallia Veitchi
,, Harryana
,, Chimæra
Odontoglossum Alexandræ, several—one a most superb variety, with fourteen grand flowers
,, insleayi leopardinum
,, Rossi majus, fine var.
,, Uro-Skinneri
,, Pescatorei
Oncidium ornithorhynchum
,, crispum
,, Krameri
,, pelicanum
,, tigrinum
Pescatorea Roezlii, very delicate
Phalænopsis intermedia, a good variety, fine spike, very close
,, amabilis
,, grandiflora
Restrepia antennifera
Syphronitis grandiflora, several
Vanda cœrulea
,, suavis, Veitch's variety, and a fine one also.

These are beautifully arranged, and make a very fine display.

—— Wintering Dahlia Roots. — The sharp frosts of the past fortnight make it necessary that Dahlia cultivators keep a good look-out that no harm comes to their store roots. It is not that they require a warm, drying atmosphere, but simply protection from frost in cool, dry quarters ; and now that outdoor operations are in suspension the grower should avail himself of the opportunity of looking over the roots, to see that damp and decay have not reached them. There sometimes happens an outbreak of moisture about the crown, and this frequently leads to decay. When this is discovered the affected parts should be cut away and powdered with charcoal dust, and the roots put in a dry room, or, if practicable, exposed to the atmosphere for a few days, to stop the decaying process as far as possible. The roots of some sorts are much more difficult to keep through the winter than others, and it shows itself by the appearance of damp, when others about them will remain quite dry. It not unfrequently happens that some of the best varieties of Dahlias are of delicate constitution, and need constant watchfulness on the part of the cultivator to keep them in good and plump condition for propagating purposes in spring. There is no cessation of the responsibilites to which the gardener is subject.

—— American Apples for Europe. — Ten thousand five hundred barrels contain a good many Apples—yet, according to the December number of the *American Agriculturist*, this quantity left New York city for Europe on a recent Saturday. "There is always a demand for American Apples abroad," says our informant, "even in years of plenty there, as our fruit is much fairer and finer than theirs, as well as higher flavoured. While we are glad that the Europeans get our fruit, we regret that but little of the profit of the shipment reaches the hands of our farmers. In this case the shippers make the money."

—— The Weather. — A Midlothian correspondent, writing on December 18, states that the frost is very severe and the snow deep. "It has been snowing all day, and the ground is covered to a depth of 9 inches. On the night of Saturday we had 22°, on Sunday 13°, on Monday 16°, and on Tuesday 19° of frost. The thermometer has not stood above freezing point till to-day since the 9th inst., and to-night a keen frost has set in again. As I write, 8 P.M., the thermometer stands at 18°—14° of frost. Hard lines for early forcing, but a rare time for curlers and for filling icehouses. The snow is thoroughly protecting the crops and all tender things, and the ground being dry when the storm set in there appears to be no serious harm done yet."—Mr. Tillery, writing on the weather in North Notts, says :—"The frost in the past week has been very severe at times. On the 12th 15° of frost was registered, and on the 15th 19°, in Welbeck gardens. The severe frost still continues, for this morning 14° was registered, with the barometer rising, so that it is likely to continue. Owing to the mild growing weather in October the main crops of Broccoli were in a very growing and succulent state ; I had, therefore, in November all laid down with their heads to the north and the stems well covered with earth. I hope, therefore, if we have no killing frost, as in 1860-61, they will escape. Some of the latest Veitch's Autumn Giant Cauliflower and Veitch's Self-protecting Autumn Broccoli, between 400 and 500 plants, I had laid in a cold pit filled with Oak leaves and soil put on the roots. This was done just before the frost set in, and we are now cutting a good supply from them when wanted."—Mr. Caie, writing from Inverary, states that on December 9 there was 10° of frost, 11° on the 10th, 12° on the 11th, 18° on the 12th, 21° on the 13th, 8° on the 14th, 6° on the 15th, 13° on the 16th, and 1° on the 18th, on which day snow was falling in large flakes and the wind still northerly.

Home Correspondence.

Rhubarb for Market.—In seasons of scarcity a good substitute for Apples is frequently *a welcome one* in most houses, and is generally found in forced Rhubarb, which has already made its appearance in the



Fig. 137.— A market bundle of rhubarb.

neighbouring market in very fair quantities. In former seasons the earliest supply has always come from the growers for market round London, but this year the first consignments came from Leeds and Manchester. It is forced in very large quantities, and, as in the case of that grown in the open air, is bundled for market in the manner shown in fig. 137 ; each bundle containing from nine to twenty "sticks," according to their length and thickness.

Paulownia imperialis.—I have read in your journal for December 21 a very interesting letter, from Mr. Thomas Carlton, relative to the growth of Paulownia imperialis. I would much like to know whether the fine tree in Ashtead Park has ever received, or continues to receive, protection during the winter months, what is the condition of the soil, and the situation ? Surely there must be something exceptionally favourable that the tree at Ashtead Park should be such a free bloomer, the experience of most gardeners elsewhere being, I believe, that it rarely blossoms. The spring of 1876 was conducive to its flowering ; trees in Gloucestershire, and other parts of England, which had never blossomed before, proved very prolific that year. Mongredien states that "the buds are produced in autumn, and consequently are often injured by the winter frosts, otherwise they expand in early spring before the foliage is developed." Hemsley also writes : "In consequence of the flowers being formed in the autumn preceding the spring, when they should expand, they are often destroyed by frost." During a visit last April to some philanthropic institutions at La Force, in the rich valley of the Dordogne, I noticed some very fine Paulownias in the ground covered with beautiful pink blossoms of exquisite Violet-like perfume : the finest vineyards in Europe were also there. The flowers appeared to have had scarcely any peduncles, but to grow on or out of the bark. The Catalpa grows well in London, and I think Paulownia might do so too. What would be its protector against winter or spring frosts ? Evidently frost is the chief factor in preventing its blooming in England. *John Colebrook.*

Potatos to Look at and to Eat.—The letter of your correspondent, "Pict," is a very sensible one, as there is no doubt that a great many of the new Potatos, especially the American ones, are not fit to put on the table in a boiled state ; and though they are superior to many of the good old kinds in produce and in power of resisting disease, I do not think they are worth growing in this country. I have tried a good many new sorts, and never, if I can help it, eat any of them. Early Ashleaf varieties for summer and autumn, and Paterson's Victorias, Flukes, or Regents, for winter and spring use, are in most people's opinion incomparably superior. There can be no doubt that an exhibition of Potatos, to be of any practical value, ought to be accompanied by a dish of boiled tubers of each variety exhibited, for there can be no greater folly than awarding prizes to sorts which are only pretty to look at. With respect to appearance, the only points which I think worth consideration are the absence of deep eyes, which cause waste in paring, and the size, provided that size and weight are not accompanied by a loss of flavour or deterioration of flesh. Soils and seasons no doubt affect the eating qualities of Potatos considerably, and some varieties which are uneatable in October are tolerable in May. I do not know whether a chemical analysis has ever been made of the different varieties, but it might be of far more practical use in judging them than the mere colour and appearance. *H. J. Elwes.*

Decorative Pelargonium Mermerus (p. 786).—The name of this Pelargonium is rightly spelt. It was a fancy of the raiser, Mr. W. Brown, of Hendon, to name it so, I think, after a ship in which a son or friend of his once took a passage. During the past summer it was shown on two or three occasions at the meetings of the Royal Horticultural Society under this name. I imagine the word should be rightly spelt Mermeros, a centaur, also a Trojan name [meaning, anxious] ; but Mr. Brown has circulated his Pelargonium under the name of Mermerus, and it is well to follow his lead. *R. Dean.*

Truffles in America.—I read in the report of a botanical club, whose meetings are held in "Columbia College," that Truffles are not quite so rare in America as one has always imagined them to be, for a member exhibited a tuber found at Staten Island, close to the city of New York, and said that he thought Truffles were only deemed rare in the New World because they had not been looked for. Some enterprising persons will now probably get a few Truffle dogs over to hunt for them, and we may soon expect to hear of rivals in size to the famed tubers of the South of France. *Mrs. Alfred Watney.*

The Weather Question.—Chiming in with the weather discussion in these pages comes an interesting article on the subject of mild and severe winters in a recent number of the *Echo*, from the pen of that eminent observer, Mr. Richard Proctor. Its special value as a contribution is found in its complete disposal of the migratory bird theory as bearing on the probable nature of the winter weather, and in the proposition that the actual cause of severe winters is to be found in the extension in a southward direction of the Arctic ice-fields, and that it is the influence exercised by those that produce severe cold. Mr. Proctor urges that rather than waste time on the observation of the habits of migratory birds as showing evidence of the probable nature of the coming winter, meteorologists should turn their attention to the arctic regions, the home of frost and snow. If the early autumn shows an unusual extension of ice southwardly it may be accepted as conclusive that a severe winter will follow. It must however be evident that even the ascertaining of so much as this does but touch the fringe of the subject, because even unknown and unexplored ice-fields are not governed by erratic laws, but owe their existence, as well as occasional expansion or contraction, to some defined causes which it is necessary we should know before we can grasp the vast subject contained in the reasons why winters are sometimes severe and sometimes mild.

It will probably further be found that more or less ice in the northern regions does not alone govern our winter temperatures. We do not now believe so implicitly in the powerful influence exerted on our western coasts by the Gulf Stream, but whether that stream is at times potent for warmth or not, at least when westerly winds prevail we invariably have a soft mild time. Whence do these westerly winds originate? and do they temper the cold currents sent forth from the northern ice-fields, or do they come because the ice-fields are more remote and less capable of influencing our English climate? In considering all these varied causes of severity or mildness—if causes they are—we get into a far more practical field of inquiry than is found in speculations upon cold cycles, all of which some diverse arrangement in Nature may at any moment upset. Mr. Proctor is rather hard upon the believers in sun-spots and their weather influences. It is not so long since that the Potato disease was attributed to cosmical influences, as governed by sun-spots; but no one preaches that theory now. We know more about the disease and its operations, and have not found that the presence or absence of sun-spots have influenced it one atom. Time will very likely show that both sun and moon have comparatively little to do with the winter weather. It may be that from the earth itself, and alone, come all the causes that tend to produce heat and cold, wet and drought. It may be that there are occasional shiftings in the heat-centres of the earth, and that from these subterranean changes come the fitful waves of warmth, or the bitter blasts of cold and frost. That there are clearly defined and comprehensive causes for all that takes place in Nature no one doubts, but so far we find the further we inquire the greater is our apparent ignorance. *A. D.*

Keeping Grapes.—Referring to the notes that have recently appeared, I have this day (December 21) harvested as many as our Grape-room will hold, and had I room I would cut the lot, for the simple reason that, being fully ripe, no advantage would be gained by leaving them on the Vines longer; besides, experience has taught me that it is "risky" to do so, *i.e.*, if intended for bottling. Two or three years ago I did not harvest them till the sap had began to work, and the consequence was many of the Grapes cracked, and all kept but indifferently: last year they were cut about this time, and we had Lady Downe's plump and fresh till the beginning of June. In cutting the bunches off the Vine I like to have all the wood I can get, and therefore cut close "home," and the wood in front of the bunch is sacredly preserved. As to foliage, there is none to preserve, nor ought there to be at this season. I attach the greatest importance to leaving the wood beyond the bunch intact. I know it looks untidy, but what of that? "Utility rather than neatness" must have sway here, for, little though it seems, it just makes the difference between the Grapes keeping well and indifferently. The wood serves as a safeguard to divert an excess of moisture being taken up by the fruit; when cut off close to the fruit (I have tried it repeatedly) cracking goes on *ad libitum*. *W. Wildsmith, Heckfield Gardens, Winchfield.*

Pity the Poor Birds.—At times of hard frost, when the snow covers the ground and food is scarce, we may compassionate the hungry members of the feathered tribe, and condone something of the mischievous propensities they are apt to exhibit in spring and summer. I have now quite a little colony of sparrows, robins, thrushes, and blackbirds, that look out daily for the crumbs and house refuse thrown out for them. The two latter come very near to our dwellings in rough weather, and every crevice where some insect may have taken up its winter quarters is closely watched, and many a marauder, all unconscious of the presence of its enemy, devoured. Looking away across the snow-covered fields the birds appear to be the only representatives of life in the landscape, and that is something to be grateful for. Let it be remembered, too, that the birds become thirsty as well as hungry, and a saucerful of tepid water put out occasionally will prove a great boon to the feathered tribe.

> "Though hate is strong, and mocks the song
> Of peace on earth, goodwill to men,"

let the blessed Christmas-time stir some warmth of sympathy in human hearts, and the birds be the sharers of a little of it at least. *R. D.*

The Beauty and Protective Power of Hoar-Frost.—Seldom if ever have trees been covered so thickly or so long as this winter with hoar-frost. For more than a week at a stretch every plant was veiled from head to foot in spotless white, and all the trees were brides. The sight was beautiful beyond description, seen imperfectly through the shifting fog, but when the sun burst forth, as it did at rare intervals, and each frost-crystal became a pearl or a tangled mass of white coral, lit up with light and radiant with glory, and the whole framework of deciduous trees were transformed into masses of frosted silver, the sight was rich and beautiful beyond description. The frost-crystals were piled up, heaped on in such manner that in cases where the trees overhung the main walks a temporary change of weather brought down the hoar-frost in such quantities as to cover these two inches deep. I have never noticed so much frost on trees and shrubs before, and one of the greatest peculiarities of it was, that every tiny bough was covered not only on its upper surface as with snow but on either side and on their under-surfaces. Neither did the overhanging of the upper branches of deciduous trees seem sensibly to reduce the supply of hoar-frost to those under them, as might have been expected. In fact, from many careful observations it does not seem as if these frost-crystals on trees were the result of mere radiation; if so they would necessarily, I presume, be thickest and longest on the upper surfaces of the boughs; but as already observed this did not seem to be the case. As far as the eye could measure with any exactness, the hoar-frost was pretty equally distributed all round the boughs. The air was doubtless fully charged with moisture, and as this was all-embracing round the tree, each branch and twig was decked all round with its fretted network of silver. Crystals were more linear in form, too, than ever I remember to have seen them. The protective power of such loose masses of frozen vapour is doubtless very considerable. Nature seems an adept in the practice of homœopathic principles—like cures or mitigates the evils of like. Cold is her most powerful antidote against more cold; and thus ministers to conservation of heat. This is powerfully illustrated in the protective power of snow — that is a complete protection to the roots of plants, and also a partial and effective protection to the top, as far as so applied. But the hoar-frost hugs the plants closer, embraces every part, and probably affords them even more protection. What say our scientists to the protective ministry of hoar-frosts? The subject is seasonable, and its discussion could hardly fail to prove useful. I should also be glad and grateful of further information on the law that governs the distribution of hoar; the form and rationale of its formation, and wherein these differ from the distribution of dew, excepting in the fact of the vapour being frozen. The distribution of rime or frost on trees is surely different from that of dew; the latter being deposited on the upper sides chiefly—owing to these being the coldest. An essay on hoar-frost on the same lines as Wells' inimitable essay on dew, is much wanted, and could not fail to prove useful. *D. T. Fish.*

Anthurium Dechardi.—It becomes more and more clear to me that there are in cultivation two distinct species under the name of Spathiphyllum cannæfolium. Which is the true Simon Pure?—that is the question. The plant I knew under that name, and which induced me to regard my Anthurium Dechardi as new, was determined by the late M. Brongniart, and has been cultivated at the Museum for many years. Moreover, M. de la Devansaye, a great lover of Aroids, informs me that he also possesses Spathiphyllum cannæfolium side by side with Anthurium Dechardi, and that the two plants are as unlike one to another as the day is to the night. He writes that he will bring me a leaf and a spathe of his Spathiphyllum cannæfolium when he returns to Paris. I will then send the leaf and spathe to Mr. Brown after I have examined them, and we shall then be able to throw some light upon the matter. I send you M. de la Devansaye's letter, begging you to return it after perusal. You will there see that his synonymy differs markedly from that given by Mr. Brown, and that it is much more extended. *Ed. André*, 67, *Rue Blanche, Paris.*

Young Gardeners' Lodges.—I hope the illustration and description of the young gardeners' lodge at Trentham is only the first of a series, descriptive of the accommodation provided for the young men in various gardens throughout the country, where they are lodged with some degree of comfort, and in accordance with the laws of health and common decency. Young gardeners as a class are not so well remunerated as those engaged in most other occupations. The majority of them are intelligent, well-educated young men; their duties, especially in the management of the glass departments, are usually trying and arduous, still they have not as a body resorted to the questionable tactics of unions and strikes for the bettering of their condition, but have as a rule left it to the laws of supply and demand, and the sense of justice of their employers and chiefs. They have thus, it appears to me, a strong claim to be lodged in a way conducive to their health and comfort, although it is notorious that in many places they are lodged in a manner conducive to neither. A series of such papers and illustrations, showing what is being done in various parts of the country in the way of providing proper accommodation for young gardeners, would do a world of good, and be a real service to the gardening community. In many cases where alterations have been gone about they have been left to estate authorities, who, while appreciating and enjoying comfortable quarters for themselves, seem slow to recognise the necessity of introducing a bit of comfort into the bothy. In many cases this may arise through ignorance of what is being done in this matter in other places. Were this want to be supplied through the medium of the *Gardeners' Chronicle*, there is no doubt it would in time bear good fruit, and where alterations are to be gone about, in many cases the work would be done in a more liberal spirit, and put on a more satisfactory footing, by seeing what others had done in the same field. The young gardeners' lodge at Trentham is well worth the attention of those who have their young gardeners lodged in back sheds. This lodge is placed in a conspicuous, cheerful position, is comfortable and well-fitted in every way for the purpose for which it is intended; it is an ornament to, and in harmony with, its princely surroundings at Trentham, and is altogether creditable to his Grace of Sutherland, while it has settled the bothy question at Trentham for generations to come. *Comme il faut.*

Bottom-heat for Pot and Other Vines.—I have no doubt that in the course of a few years the practice of applying bottom-heat to Vines will, like many other old-fashioned ways of conducting forcing operations, become obsolete. No one would now think of making huge heaps of fermenting material over their Seakale and Rhubarb beds, and yet at one time that was the only way ever thought of to produce those favourite esculents during the winter, but at the present time it is found they can be got with much greater certainty and with only a tithe of the labour and bother by digging the roots up and packing them close in a Mushroom-house or other place where a little warmth can be afforded. This was thought a great innovation at the time it was began, but the superiority of the system soon proved itself, as forcing Vines without bottom-heat will if it only has a fair trial. There is an old homely saying that the proof of the pudding is in the eating, and I have long since proved to my own satisfaction by practical experience that Vines can be kept in better health without bottom-heat than they can by its use, as the excitement the roots undergo when it is applied is quite disproportionate to that of the tops, and has a weakening tendency. The closer Nature is followed in all her doings, whether they belong to the animal or vegetable world, the better; and if her laws are violated in any case the penalty has to be paid in some way or other. It may be objected that forcing is not natural, but I maintain that it is, at least most of us engaged at it try to make it so, by imitating as closely as we can the different seasons through which the class of plants we cultivate have to pass in their own native habitat. All we do is to get things out of their ordinary course by starting at a different time of year to what they would if left to come of themselves. When Vines do this the ground the roots occupy is not a hotbed of 80° or more, neither is it necessary or desirable that a border should be so, for when covered with fermenting material, independent of the harm heat does used in this way, the soil is rendered close and inert by the compression it undergoes and the steam and moisture confined in it. Air is the great purifier and sweetener of the earth, but in a border hermetically sealed as it is with a mass of dung and leaves on the top, how is it possible for air to get at it? This evil some have tried to remedy by using hot-water pipes underneath, and surely if bottom-heat were such a good thing it ought to answer here, but what has been the result? Those who have gone to the expense know how useless it is, and would be glad had they never embarked in such a visionary undertaking that has yielded no return for the labour. In regard to pot Vines, I believe that Mr. Gilbert of Burghley and some of our best cultivators have given up the use of bottom-heat, and find that they start stronger and produce better fruit than they got under the less natural system of growing them with their toes constantly in a warm bath. If bottom-heat is so necessary for Vines as some appear to suppose it is, why not equally so for Figs and Peaches that are forced? And yet one scarcely ever thinks of subjecting them to the same treatment; but the Vine is of a very enduring, accommodating sort of nature, and puts up with it all for a time, and is very slow in showing its resentment of bad treatment. It will, I think, be readily admitted that Mr. Baines grew plants as well as most people, and if I mistake not he came to the conclusion that bottom-heat in most cases did more harm than good; and if so with such subjects as the occupants of stoves, how much more so with a hardy plant like the Vine? I note that your correspondent, Mr. Hinds, writing on this same subject, speaks of stored-up sap, as if Vines and other trees supplied themselves with that commodity to hybernate on for the winter. [And so they do. EDS.]. As well might people talk of stored-up blood, when it is a well-known fact that a fresh supply of that fluid in animals

and sap in plants is being constantly manufactured to keep up the loss of the tissues. There is, I believe, a closer analogy between the animal and vegetable kingdom than many suppose; but be that as it may, certain it is that roots during the whole winter and the entire period of their existence are pumping up sap [water] to meet the demand made by the weather and other circumstances, and that they are always in a state of greater or less activity, so long as there is life in them. Cut off the said roots at this season, and how long does the stored-up sap last? and how many days will the roots so disconnected from their support be before they become dry sticks? Vine prunings that ought to be full of this stored-up sap soon want some more, and have to be stuck in the ground if kept only a few weeks, or they would be worthless for affording eyes for striking. Depend on it, roots have their functions to perform in winter as at any other time, and instead of, as Mr. Hinds says, having nothing to support, they have the whole fabric of the plant to keep alive and nourish; and be it a Vine or whatever else, they cannot in any way do without them, as though leafless there is no real rest, and there are daily losses to make good and fresh organisms to build up. *J. Sheppard.*

Carbolic Acid and Soluble Phenyle as Insecticides.—In reference to the inquiries of your correspondent, "W. G. B. A." on the subject of carbolic acid in various forms as a safe insecticide, it may be of interest to him to mention that the mixture known as Soluble Phenyle has been found by a nursery gardener, to whom I gave some for experiment, to answer perfectly well in keeping the Stephanotis free from scale. It has been tried now for some months. The fluid, I am told, was used in a very dilute form—about a teaspoonful to a gallon of water, and was sponged over the plant and leaves, and (on making inquiries again to-day on the subject) I am told that it has completely cleared the scale, and no injury has resulted to the foliage. In my own experiments through the summer I used a much stronger solution, as I was chiefly endeavouring to ascertain the action of the Phenyle on plant life by absorption in solution through the roots, and thence (when absorbed into the plant system) on the insect-feeder. I found the roots would bear a much stronger solution thay the preparation above-named, and that plants of ordinary habits benefited by it, and also (as far as I saw) it was harmless to bark, excepting in a soft state on young shoots, where I cannot speak as to its effects. I should conjecture that as the fluid certainly disfigured and injured foliage excepting when (as mentioned before) extremely diluted, it would similarly injure quite young bark, but in this diluted form I have used it with great success for keeping off attacks of Celery-fly from the young plants just pricked out. The scent of the fluid acts in some degree as an insect deterrent, but I believe the great value of the remedy is by its absorption into the plant, making it utterly distasteful to its feeder. Should your correspondent wish for any details as to my experiments with the Soluble Phenyle, I should be most happy to give him every information in my power. *O.*

A Plea for our Little Songsters.—At this festive season, when our hearts are inclined to benevolence and goodwill perhaps more than at any other time, let us not forget our little birds. Now that the country is deeply clad in her wintry robe, one can notice daily how the poor little birds, which enjoy our hearts with their cheerful song in the spring and free our orchards from damaging insects, cluster mournfully together suffering from hunger and cold. Thousands could be saved from starvation if every mistress of the house will give instructions to sweep a small space free from snow, and throw to them every morning a few crumbs. There are few kind actions which can be done more cheaply and easily. *W. H.*

Arbutus procera.—I am happy to inform your correspondent "F. C.," that the Arbutus procera he refers to at p. 731 still bears immense crops of its clustered berries, in fact it has not missed doing so since the year he mentioned (1868). This year it has been particularly fine, there being scarcely a branch but what bore a bunch of its beautiful orange-scarlet-coloured berries; but ripening its fruit before any other kind of Arbutus they soon get devoured by birds, unless protected, the plant is now about 25 feet high, and 14 feet through. *Jas. Harris, The Gardens, Singleton, Swansea.*

The Boscobel Oak.—Your correspondent "H. E." in his remarks upon this tree appears to throw discredit on the measurements given of it in Mr. de Bunsen's *Boscobel*. As I was the person who took the measurements in 1857 I wish to assure "H. E." that those measurements were correctly taken and that they are correctly stated in the book *Boscobel*. It is almost impossible for any mistake to have happened as I was closely watched by the late Beriah Botfield, Esq., my then employer, and the Rev. J. Brooke. These gentlemen took the measurements down at the time. I was not there this year when the tree was measured by Mr. Kemp, but I have no reason to doubt his doing it correctly. Allow me to state that I consider this measurement evidence the most trustworthy in settling the question as to whether or not this is the tree in which King Charles II. hid himself. Seeing that the tree has increased 11 inches in circumference in the last twenty-one years (not in eleven as stated by "H. E."), and that when it "has the appearance of a tree that has done growing," what must it have increased in such a period, when it was in the vigour of its youth? I find that young Oak trees on this estate have increased over 2 feet in circumference during the last twenty-two years. In 1857, after measuring the Boscobel Oak, I examined a number of Oaks here, by taking their circumferences and counting their annual rings of growth, so as to enable me to form an opinion of the age of the Boscobel tree. The conclusion I then came to was that it could not be 200 years old, and I must say that the knowledge gained of its growth during the twenty-one years since has confirmed me in that opinion. The Boscobel Oak has the appearance of having grown quickly while young; it shows no sign of being starved by an uncongenial soil. It has been thought by some that the present tree is a shoot from the old stool of the original tree. To test this I dug down about a foot and a-half by the side of the tree, but found no sign of any old stump; I found a brick, which I think rather shows that the present tree was very close to the wall which once surrounded it, as is stated by several of the witnesses mentioned in Boscobel, and is a point against it being the original tree. *John Barnett, Gr., Decker Hill, Shifnal.*

—— In the short article I sent with the photograph of the so-called Royal Oak, I gave very plainly these figures:—In February, 1857, the tree measured 11 feet 4 inches in circumference, at 4 feet from the ground; in July, 1878, at the same height, 12 feet 3 inches in circumference; and I calculated that the tree had increased about half an inch annually for the last twente-one years, and not 11 inches in eleven years, as misquoted by "H. E." I do not believe in the dictum advanced accounting for the said increase in size; and if the lead that covers an old wound were removed I think this part of the mystery might be cleared up. There is an old Oak near the farm that looks much older than the Royal Oak, not far from a pit or horse-wash, which at 4 feet from the ground gave 13 feet 3 inches. The soil about the Royal Oak, as upheaved by the rabbits, seemed to be a sandy loam, but probably this may have been composed of soil carted there for top-dressing. In the garden adjoining it seemed of a more sandy nature, with a sprinkling of fine gravel. That Oaks vary much in size at the same age is well known; we have several examples on the estate at hand. Years ago my employer went to a good deal of trouble in securing the dimensions of different Oaks from timber merchants, and they invariably were more in circumference than the Royal Oak, *i.e.*, those containing 200 annular rings. Again, why should we despise King Charles's account of the tree being lopped? Perhaps on the same score as the housekeeper at Boscobel, Mrs. Stubbs, who said, "He" (King Charles) "didn't know whether it was an Oak or an Elm that sheltered him, and he cared much less, but the Pendrells could not be mistaken." I am not disloyal, but I nearly wish the tree would fall, so that we could thoroughly convince the "believers" in the tree of their error. If "H. E." has not been to see the evidence in the Bodleian library, I would advise him to go. *A. S. K.*

—— I have some very wee Royal Boscobel Oaks in my garden, and value them greatly, though I believe them to be only the grandchildren of the very tree in which King Charles was protected. I may be mistaken, but I think the person who gave me the acorns said he was told at Boscobel that the real Royal Oak was dead and gone, but that a young tree was reared from it, and that from this tree my acorns were gathered. That my acorns were gathered from what is called the Royal Oak I am as certain as if I had gathered them with my own hand, as Henry Skinner's word is not to be doubted, and he went miles to get them for me. He would not accept those offered him by the people in charge of the house, but gathered them from the tree. I shall write and ask if I am right in what I say, and I feel certain any one who will write to the people in charge of Boscobel House will be told what is correct. Of course I should like best to have had the children of the Royal tree, but I value the grandchildren very much. *Elizabeth Chillingworth, Whitlench, Hartlebury.*

—— The Rev. W. A. Leighton, Luciefelde, Shrewsbury, sends us the following communication on this subject:—

"As such diversity of opinion exists as to the identity of the present Boscobel Oak, founded only on oral tradition, it may be well to place on record my own reminiscences. In 1820, when a boy of fifteen years old, I was a pupil at Wolverhampton Free Grammar School, under the head master, Rev. Wm. Tindal. At the Easter and shorter holidays I used to visit an aunt of my mother's, Mrs. Lucy Careless, who resided at Brewood, about 2 miles from Boscobel. During these visits I was more than once taken to see Boscobel House and the 'Royal Oak.' But I was expressly told, both by my aunt and all the families around with whom she visited, that the present tree was not the original Oak, but a sapling which grew near to the original tree, which itself had long ago gone to decay. The original tree was an old pollarded Oak, and, when in decay, had been removed piecemeal by visitors, and she gave me a small rotten piece of 'touchwood,' which she stated was a fragment of the original 'Royal Oak,' and which she herself had taken from it. This also was the universal tradition of the neighbourhood. The present tree was, when I saw it in 1820, enclosed with a square brick wall 7 or 8 feet high, in one side of which was a wooden door, and over it, let into the brickwork, a brass plate, on which was engraved an inscription in Latin; but there were no remains of the old tree. The stone table, now broken and embedded in the ground near a gate in the garden, was then entire, and in the alcove on the mound. My aunt was baptised in 1757, and her husband, Mr. Thomas Careless, in 1750, and both lived to nearly eighty years of age at Brewood. Mr. Careless' father was an assistant master at Brewood Grammar School, and of course could not but be acquainted with the traditions of the locality, which probably he handed on to his son. Supposing then that he was born about 1730, we have, down to the present year, an uninterrupted oral tradition of 148 years, founded on a credible basis, and as worthy of belief as any other similar tradition. Mrs. Careless' description of the trees tallies in all respects with what Dr. Stukely saw on his visit, and confirms the Doctor's statements. No one, on inspecting the present tree, can hesitate in observing that it can never have been pollarded, though some of the lower boughs have been roughly pruned off. See *Beauties of England and Wales, Shropshire* (1813), p. 312, as to the present tree and the Latin inscription. Boscobel House was in 1820 either occupied by or was the property of Mr. Lockley, 'a mighty hunter' in his day. *W. A. Leighton, F.L.S.*'

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING TUESDAY, Dec 24, 1878.

Month and Day.	Barometer: Mean Reading at 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 18 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat = 100.	Wind: Average Direction.	Rainfall.
Dec.	In.	In.	°	°	°	°	°	°			In.
19	29 12	—0 71	38.5	29.7	8.8	34.5	—5 5	30.5	84	S.W. : WNW	0.00
20	29 39	—0 45	32.8	27.0	5.8	30 5	—9 2	28 6	92	N. : NNE	0.00
21	29 66	—0.19	32.8	26 4	6.4	29.7	—9.6	25.1	84	WSW : WNW	0.00
22	29 62	—0.22	32.9	26.0	6.9	30.0	—8.8	27.9	91	N.W. : WNW : W	0.25
23	29 77	—0.08	31.7	21.1	10.6	26.2	—12.2	22.7	87	W. : WSW : WNW	0.00
*24	30.18	+0.32	27.5	18.2	9	23.5	—14 7	20.0	87	W. : WSW	0.00
Mean	29.62	—0.22	32.7	24.7	8.0	29.1	—10.0	25 8	88	W.	sum 0.25

Dec. 19.—A fine bright day, partially cloudy. Still cold.
— 20.—Overcast, dull, and slight fog throughout. Hoar-frost. Very cold.
— 21.—Overcast till 9 A.M. Fine, cloudy after. Sunshine at times. Cloudless at night. Very cold.
— 22.—A bad day. Very dull and dark throughout Gas necessary nearly all day. Cloudless after 9 P.M. Heavy fall of snow between 9 A.M. and 4 P.M. Very cold.
— 23.—A fine bright day. Hoar-frost. Bitterly cold.
— 24.—Fine, though dull and gloomy. Slight fog. Coldest day this winter, up to this date.

Note.—The mean daily temperature of the air for the fifty-nine days, Oct. 27–Dec. 24, was 36¼°, being 6¼° below the average. The mean reading of the barometer for the thirty days, Nov. 24—Dec. 23, was 29 53 inches, being 0.24 inch below the average.

* 24.—The mean daily reading of the barometer (30.18 inches) is the highest mean reading since November 20.

LONDON: *Barometer.*—During the week ending Saturday, December 21, in the suburbs of London the reading of the barometer at the level of the sea increased from 29.67 inches at the beginning of the week to 29.71 inches by the morning of the 15th, decreased to 29.46 inches by the afternoon of the 16th, increased to 29.55 inches by the night of the 17th, decreased to 29.21 inches by the morning of the 19th, and increased to 29.87 inches by the end of the week. The mean daily readings were below their averages on every day in the week, and the amounts in defect were as follows:—15th, 0.35 inch; 16th, 0.52 inch

17th, 0.50 inch; 18th, 0.72 inch; 19th, 0.71 inch; 20th, 0.45 inch; 21st, 0.19 inch. The mean reading for the week at sea-level was 29.51 inches, being 0.20 inch below that of the preceding week, and 0.49 inch below the average.

Temperature.—The highest temperatures of the air observed by day varied from 39½° on the 18th and 38½° on the 19th, to 32½° on the 17th and 32¾° on the 20th and 21st; the mean value for the week was 35°. The lowest temperatures of the air observed by night were as follows:—15th, 22°; 16th, 27°.3; 17th, 25°.4; 18th, 23°.9; 19th, 29°.7; 20th, 27°; 21st, 26°.4; the mean value was 26°. The mean daily range of temperature in the week was 9°, the greatest range in the day was 15½° on the 18th, and the least 5¾° on the 20th.

The mean daily temperatures of the air and the departures from their respective averages were as follows:—15th, 30°, —10°.7; 16th, 31°.1, —9°.6; 17th, 28°.9, —11°.6; 18th, 33°.6, —6°.6; 19th, 34°.5, —5°.5; 20th, 30°.5, —9°.2; 21st, 29°.7, —9°.6. The mean temperature of the air for the week was 31°.2, being 9° below the average of sixty years' observations, and 10¾° lower than the value for the corresponding week in 1877.

The highest readings of a thermometer with blackened bulb in vacuo, placed in sun's rays, were 65½° on the 18th, and 51½° on the 15th and 19th; on other days the sky was generally overcast, and there was no sunshine. The lowest readings of a thermometer on grass, with its bulb exposed to the sky, were 19° on the 15th, 20° on the 18th; on other days the readings ranged between 21° and 24°; the mean for the week was 22½°.

Wind.—The direction of the wind was variable, and its strength gentle. The weather during the week was very cold, but somewhat brighter than the preceding week.

Snow fell on the 15th and 16th, and *fog* prevailed on the 16th, 17th, and 20th.

Rain.—A little rain and snow fell on the 15th and 16th; the amount measured was 0.06 inch.

ENGLAND: *Temperature.*—During the week ending Saturday, December 21, the weather was again severe and very cold. The highest temperatures of the air observed by day were 46° at Truro, 42° at Plymouth, and 41½° at Brighton; the highest temperature of the air at Bolton and Bradford was 35½°, and at Hull was 36°; the mean value from all places was 38½°. The lowest temperatures of the air observed by night were 17¾° at Bolton, 13° at Hull, 13½° at Nottingham, 17° at Norwich, 17½° at Bristol and Bradord, and 18° at Sunderland; the lowest temperature of the air at Liverpool was 23¾°, at Blackheath was 22°, and at Brighton, Sheffield, and Leeds was 21°; the mean value from all stations was 18½° only. The range of temperature in the week was the greatest at Bolton, 28°, and the least at Liverpool, 15½°; the mean range from all places was 20½°.

The mean of the seven high day temperatures was the highest at Truro, 43°, and Plymouth, 38½°; and the lowest at Bolton, 31¾°, and Hull, 32½°; the mean from all stations was 35½°. The mean of the seven low night temperatures was the lowest at Bolton, 17½°, Hull 19½°, Nottingham 19⅝°, Norwich 21½°, and other places about 24°; the general mean from all places was 24½°. The mean daily range of temperature in the week was the least at Liverpool, 6¾°, and the greatest at Truro, 14⅝°, and Bolton, 14½°; the mean daily range of temperature from all stations was 11°.

The mean temperature of the air for the week from all places was 29½°, being 1⅞° higher than that of the preceding week, and 12½° lower than the value for the corresponding week in 1877. The mean temperature of the air was the highest at Truro, 35½°, Liverpool 33°, Plymouth and Brighton both 32°, and Sheffield 31⅜°; and the lowest at Bolton, 24½°, Hull 26°, Nottingham 26¼°, Norwich 27⅛°, and Leicester and Bradford both 28¼°.

Rain.—The amounts of melted snow during the week were the largest at Truro, 1.65 inch, Plymouth 0.90 inch, and Bolton 0.81 inch; and the least at Blackheath, Cambridge, Norwich, Wolverhampton, and Hull; the average amount over the country was 0.32 inch.

The weather during the week was very cold and gloomy, and *snow* fell generally. *Fog* or *mist* was frequently prevalent all over the country.

JAMES GLAISHER.

Answers to Correspondents.

CHRISTMAS FLOWERS: *C. Z.* Any of the Japanese or other late Chrysanthemums, and the early-flowering Tulips, such as Van Thol. For Easter any of the Indian Azaleas might be had in bloom. Your question is too open for any more definite reply.

DICKSONIA ANTARCTICA: *G. C.* We cannot say what is the lowest temperature this Fern will bear. In its native habitat it is subjected to frost and snow, and it has stood out uninjured in various parts of England and Ireland, but we imagine anything like severe frost would severely cripple it, unless the stems and crowns were sufficiently protected. Slight frosts do not appear to injure it, but it probably suffers more from our comparatively dry atmosphere.

HOUSES FOR FRUIT FORCING: *A Market Gardener.* Going the cheapest way to work, we should prefer to make the roofs a fixture, with ventilators under the coping of the back wall, rather than adopt the more expensive plan of having sliding lights; and instead of adopting the system of glazing without putty, would bed the glass well in with putty, but put none on the top, as is usually done. The sash-bars should be about 2 inches by 1½ inch, and be slightly bevelled off on the under side, and fixed about a foot apart, with every fourth or fifth bar of stouter wood than the others—say 3 inches by 2 inches, or something like that. It does not matter what size the squares are; use that which you can get cut the cheapest. For general work the best angle for the roof is 45°, and for early work somewhat sharper. The best early Grapes for market are Black Hamburgh and Buckland Sweetwater; and for late use Muscat of Alexandria, Lady Downe's, and Black Alicante. Gros Colmar is not the same as Gros Guillaume: the latter produces very much larger bunches than the former, but is not so large in the berry, nor so round in shape.

HOW TO COOK MOORHENS.—The skin is very tough and indigestible. I always had these birds skinned (their breasts and wings covered with buttered paper), and roasted like teal, served with Lemon or Orange sauce, and a tureen of good brown gravy. The buttered paper should be removed a short time before the birds are served, so as to what cooks call "froth" them. *Mrs. Alfred Watney.*

ICE: *W. L. H.* You should put a good layer of straw, or any other non-conductor of heat, at the bottom and sides of the ice-house, and break the ice tolerably small as it is thrown in. It is not necessary to use salt.

MUSHROOM BED: *Y. Kent.* Many fungi delight in half-decayed stable manure; the spores of these fungi are always flying about in the air, and when they happen to light on a ready-made Mushroom bed they are just in their element, and the new-comers take possession of the position at once. The fungi sent belong to an abnormal form of A. virgineus, a common aggressor on Mushroom beds, and one often mentioned to former correspondents of the *Gardeners' Chronicle.*

NAMES OF FRUITS: *J. H. Heyward.* 1, *Pear:* Chaptal. *Apples:* 2, Norfolk Beaufin; 3, King of the Pippins.

NAMES OF PLANTS: *G. M.* 1. Veronica speciosa variegata; 2, Ornithogalum longibracteatum; 3, Erica colorans.—*Inquirer* (Huntroyde). Send further particulars, as to habit, hardiness, &c.—*J. McRonald.* Calotropis procera.

OSMUNDA REGALIS AT CAMSTRADDAN.—In the second column, at p. 751, the word "Rossdal" is used for Rossdhu in a very harmless manner; but in the same column the word "bog" is twice used for the word "bay," which rather significantly mars my contention. *J. Gordon.*

CATALOGUES RECEIVED:—Messrs. J. Veitch & Sons (Royal Exotic Nursery, King's Road, Chelsea, S.W.), Catalogue of Garden and Flower Seeds, Horticultural Implements, &c.—Messrs. J. Carter & Co. (High Holborn, London, W.C.), Wade Medium: a General Illustrated Descriptive Catalogue.—Messrs. Felton & Sons (Harborne Road, Edgbaston, Birmingham), Spring Catalogue of Seeds for the Vegetable and Flower Garden.

COMMUNICATIONS RECEIVED.—W. R. M'N.—A. T.—T. F. J.—T. C.—J. R.—F. V. M.—D. T. F. (next week).—H. M.—W. N.—E. O. F.—C. J. C.—H. F.—H. K.—G. T.—C. N.—C. H.—N. P.—E. B.—R. T. C.—J. T. B.—J. D.—A. O. W. (you will see your suggestions have been anticipated).—J. W. S.—J. S.—J. D.—J. Mayo, Drury.—J. B. R.—W. M. P.—R. B., sen.—W. H.—J. C. (thanks).—C. F. & F.—J. R. J.

Enquiries.

He that questioneth much shall learn much.—BACON.

GRAFTING OLD GRAPES.—Would some of your correspondents be kind enough to give their experience in grafting, or bud-grafting, of old Grape Vines? To myself and many more gardeners it would, no doubt, be very interesting and instructive. *W. W.*

Markets.

COVENT GARDEN, December 24.

A quiet business and bare market have made this one of the gloomiest Christmases we have experienced for some years, foreign importations considerably falling off this last week or two. Fair samples of Grapes are still in good demand. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arum Lily, or Richardia æthiop., doz.	24	0–30	Euonymus, var., doz.	6	0–18
Azaleas, per dozen	24	0–60	Ferns, in var., p. doz.	4	0–18
Begonias, per doz.	6	0–12	Ficus elastica, each	2	6–15
Bouvardias, per doz.	18	0–24	Foliage Plants, various, each	2	0–10
Camellias, per dozen	18	0–60	Hyacin., Rom., doz.	12	0–18
Chrysanth., per doz.	6	0–30	Mignonette, per doz.	6	0–9
Cyperus, per dozen	6	0–12	Myrtles, per doz.	16	0–12
Dracæna terminalis	30	0–60	Palms in variety, each	2	6–21
— viridis, per doz.	18	0–24	Pelargoniums, scarlets, zonal, doz.	6	0–12
Epiphyllum, per doz.	18	0–60	Primulas, per dozen	6	0–12
Erica Cavendishii, per doz.	6	0–9	Solanums, ber., doz.	6	0–18
— gracilis, p. dozen	9	0–12			
— hyemalis, p. doz.	12	0–42			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 blooms	0	6–1 0	Lily of Valley, spray	1	0–2 0
Arum Lilies, 12 blms.	12	0–24 0	Mignonette, 12 bun.	6	0–9 0
Azaleas, 12 sprays	1	6–4 0	Narcissus, paper-white, 12 sprays	2	0–6 0
Bouvardias, per bun.	1	0–4 0	Pelargoniums, 12 sp.	2	0–4 0
Camellias, per dozen	6	0–18 0	— zonal, 12 sprays	1	0–2 0
Carnations, per dozen	1	6–4 0	Primula, double, per bunch	1	0–2 0
Chrysanth., per doz.	2	0–6 0	Roses (indoor), doz.	2	0–12 0
— per 12 bunches	9	0–18 0	Tropæolum, 12 bun.	2	0–6 0
Epiphyllum, 12 blms.	1	0–3 0	Tuberoses, per dozen	3	0–6 0
Eucharis, per doz.	10	0–18 0	Violets, 12 bunches	4	0–6 0
Gardenias, 12 blms.	12	0–24 0			
Heliotropes, 12 sp.	0	6–1 0			
Hyacin., Rom., 12 sp.	2	0–4 0			

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	2	6–5 0	Oranges, per 100	4	0–8 0
Cobs and Filberts, lb.	0	9–1 0	Pears, per doz.	4	0–8 0
Grapes, per lb.	2	0–6 0	Pine-apples, per lb.	2	0–4 0
Lemons, per 100	3	0–10 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, English Globe, doz.	2	0–4 0	Horse Radish, p. bun.	4	0–..
— Jerusalem, bush.	4	0–..	Lettuces, Cabbage, per score	1	6–..
Asparagus, Fr. sprue, per bundle	1	6–..	Mint, green bunch	0	4–0 6
— English, per bun.	3	0–..	Onions, young, bun.	0	4–0 6
Beans, French, p. 100	2	0–..	Parsley, per bunch	0	4–..
Beet, per doz.	1	0–2 0	Peas, per quart	1	2–0 ..
Brus. sprouts, bush.	7	0–..	Potatos, new, basket	1	0–..
Cabbages, per doz.	1	0–2 0	Radishes, per bunch	0	1–0 3
Carrots, per bunch	0	4–0 6	— Spanish, doz.	1	0–..
Cauliflowers, per doz.	2	0–3 0	— New Jersey, doz.	2	0–..
Celery, per bundle	1	6–2 0	Rhubarb, doz.	1	0–..
Chilis, per 100	2	0–..	Shallots, per lb.	0	6–..
Cucumbers, each	0	4–1 6	Seakale, per punnet	2	6–..
Endive, Batav. dozen	1	6–..	Spinach, per bushel	3	0–..
Garlic, per lb.	0	6–..	Sweet Potatos, per lb.	0	6–..
Herbs, per bunch	0	2–0 4	Tomatos, per dozen	2	6–3 0
			Turnips, p. 12 bunch	3	0–..

The Potato market is quiet, and without alteration in prices.—Regents, 100s. to 130s.; Early Rose, 110s. to 120s. per ton.

SEEDS.

LONDON: *Dec.* 23.—This being Christmas week, a very quiet feeling, as might have been expected, characterises the seed market. English red Clover, unless of superior quality, does not meet with attention. Choice English Trefoil is firm at the recent substantial rise in value; finest parcels being with extreme difficulty met with, whilst of yearling seed there is none whatever obtainable. Consequently country holders, anticipating still higher rates, are unwilling to part with their limited stocks, even on the current advanced terms. Cable advices describe the American Clover market as strong, with a brisk Continental demand. The 116 tons sunk in the *Pommerania, en route* to Hamburg, have of course had to be replaced; but, apart from this, the consumption throughout Germany increases most markedly year by year. In neither white Clover nor Alsike is there any quotable alteration. For bird seeds, and also for Rape and Mustard, the sale is slow. Blue Peas and Haricot Beans move off at late rates. *John Shaw & Sons, Seed Merchants,* 37, *Mark Lane, London, E.C.*

CORN.

Trade at Mark Lane on Monday was particularly inactive; indeed so few were the transactions that the term trade would appear to be hardly justifiable. Quotations ruled as before in the case of Wheat, though a concession might have occasionally been made to force sales. The supply of English Wheat was short, while the show of foreign was pretty liberal. The fact of the market closing on Wednesday had the effect of curtailing business to some extent. Barley was dull, but the value of fine malting produce remained firm. Malt was quiet and without change. Oats and Maize were held for previous rates, but in the absence of business the market may be reported as nominal. Beans and Peas were in limited request, as also was flour, and prices showed little or no variation.—Average prices of corn for the week ending December 21:—Wheat, 40*s.* 8*d.*; Barley, 39*s.* 4*d.*; Oats, 21*s.* 1*d.* For the corresponding period last year:—Wheat, 51*s.* 4*d.*; Barley, 43*s.* 3*d.*; Oats, 23*s.* 11*d.*

CATTLE.

The market at Copenhagen Fields on Monday presented quite a holiday appearance. The number of beasts being very small, they were quickly disposed of at better prices; in a few instances our top quotation was exceeded. The supply of sheep was also small, but in this department trade was not so brisk, indeed there were very few buyers, and a clearance was not made. The few calves on offer were readily sold at high rates. Quotations:—Beasts, 4*s.* 6*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 5*s.* 6*d.* to 6*s.* 6*d.*; sheep, 5*s.* 4*d.* to 5*s.* 8*d.*, and 6*s.* 4*d.* to 7*s.* 2*d.*

POTATOS.

The Borough and Spitalfields reports state that with good supplies on offer, trade remains very quiet, and prices show no material change. Kent Regents, 100s. to 115s. per ton; Essex ditto 80s. to 100s.; Victorias, 110s. to 130s.; flukes, 110s. to 135s.; Champions, 80s. to 90s. —Potatos continue to arrive in moderate quantities. During last week 24,720 bags were received from Hamburg, 5924 bags 20 tons Antwerp, 2214 bags Louvain, 545 sacks Rouen, 152 Dahouet, 200 Boulogne, and 15 bags 30 packages from other parts of the Continent.

COALS.

House coals have been in good demand, and an advance of 1*s.* per ton was obtained for both best and second. Quotations:—Bower's West Hartley, 15*s.* 9*d.*; Walls End—Harton, 19*s.* 9*d.*; Easington, 19*s.* 9*d.*; Haswell, 22*s.*; Hetton, 22*s.*; Hetton Lyons, 19*s.* 9*d.*; Original Hartlepool, 22*s.*; Tunstall, 19*s.* 9*d.*; Tees, 21*s.* 9*d.*

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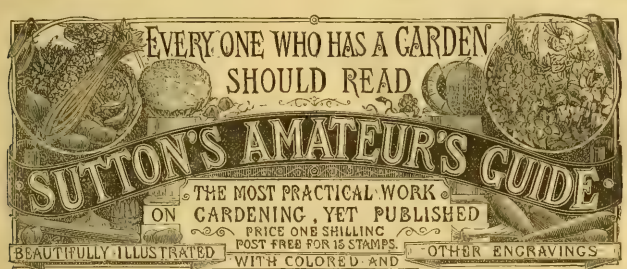
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CAULIFLOWER, Veitch's Autumn Giant	,,	1	6
CELERY, Major Clarke's fine solid Red	,,	1	0
CUCUMBER, Tender and True	,,	2	6
ENDIVE, Picpus, Green Curled	,,	1	6
ENDIVE, Round-leaved Batavian	per ounce	1	6
LETTUCE, Californian, Curled	per packet	1	0
LETTUCE, Early Paris Market	,,	1	0
LETTUCE, Hicks' Hardy White Cos	per ounce	1	6
MELON, Eastnor Castle Green-flesh	per packet	1	6
MELON, Read's Scarlet-flesh	,,	1	6
PEA, Criterion	per quart	2	6
PEA, Marvel (Laxton), new	,,	5	0
TOMATO, Hathaway's Excelsior	per packet	1	0
TURNIP, Veitch's Red Globe	per ounce	0	6
POTATO, Prince Arthur	per peck	5	0
POTATO, Veitch's Improved Ashleaf Kidney	,,	4	0

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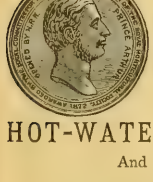
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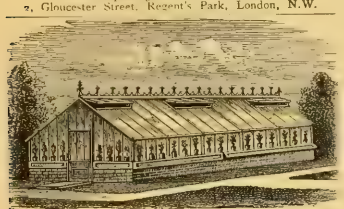
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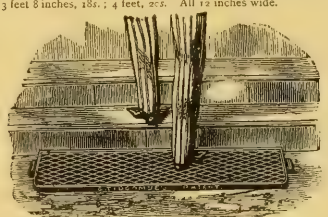
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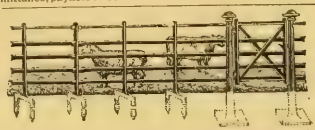
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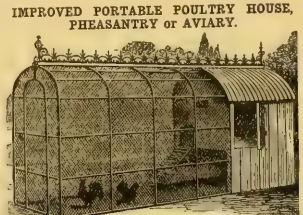
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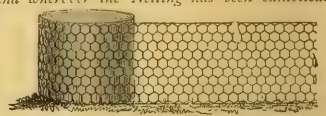
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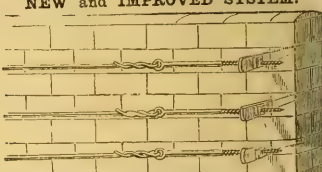
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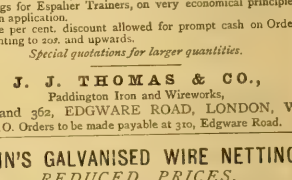
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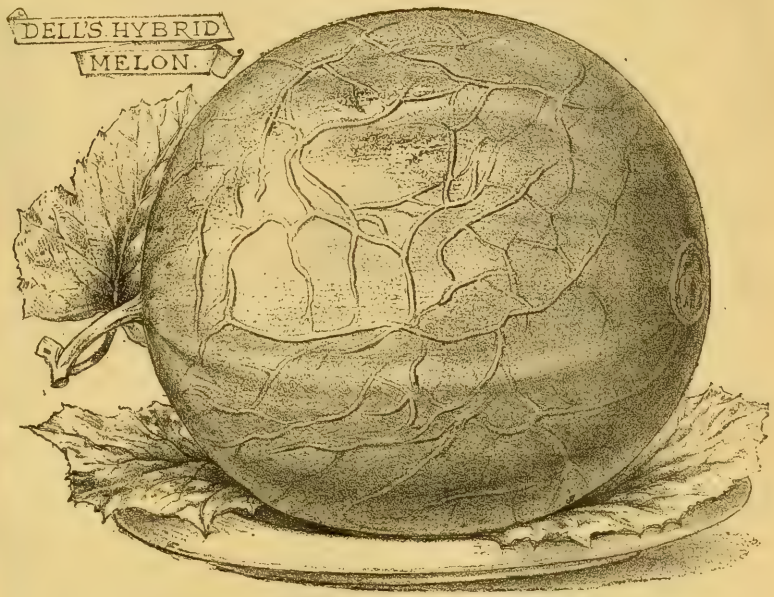
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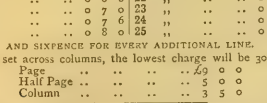
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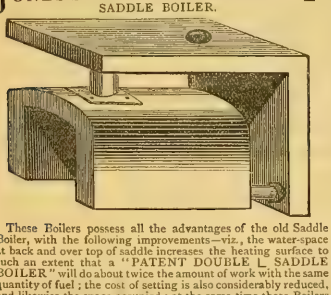
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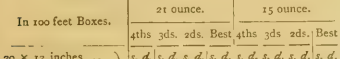
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20 × 12 inches ..	15 6	17 6	18 6	20 0	12 0	14 0	15 7	17 6
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